

### Research Article

## Effect of yoga on mental health in young and senior citizen

Kuldeep K. Chile<sup>1</sup>, Shriprasad V. Kulkarni<sup>2</sup>

<sup>1</sup>H.O.D. & Associate Professor, Director & Consultant<sup>2</sup>

<sup>1</sup>Department of Swasthavrutta

<sup>1</sup>Krishna Ayurvedic Medical College, Sankehswar, Belgavi, Karnataka, India.

<sup>3</sup>Vedbhavan Ayurved Chikitsalaya, Kolhapur, Maharashtra, India.

\* **Corresponding Author:** Dr. Kuldeep K. Chile, **E-mail:** [kuldeepchile@gmail.com](mailto:kuldeepchile@gmail.com)

Article Received on: 14/12/2020 Accepted on: 27/12/2020 Published on: 31/12/2020

### ABSTRACT:

**Background:** As we know India has a large number population and stress like anxiety also now days it is common. Yoga can be wisely applied in old age care. There is no any age restriction to practice yoga. Effect may differ by age. There is a need to study the mechanism of action of yoga with respect to the condition.

**Aim:** To find the effect of yoga on mental health between young and senior age person.

**Materials and Methods:** Twenty-five normal healthy volunteers of both sexes were divided into two groups according to age. Fifteen participants of the age group between 60 to 70 years and 10 participants of the age group between 20 to 30 years were selected. Selected individuals were subjected to 90 min of yoga classes daily for a month. State Trait Anxiety Inventory (STAI) was given before yoga on the first day and after one month of practice to assess the change in State anxiety and Trait anxiety.

**Results:** Senior group - State anxiety score decreased from 41.13 ±8.43 to 30.8±6.49, Trait anxiety score reduced from 45.66±7.5 to 40.73±8.3. Younger group - State anxiety score reduced from 38.7±4.8 to 30.8±4.1, Trait anxiety score reduced from 46.2±7.9 to 42.9±9.1. Changes were statistically significant with P<0.05.

**Conclusion:** Reduction in the State and Trait anxiety score signifies that yoga has both immediate as well as long-term effect on anxiety reduction. Thus, yoga helps to improve the mental health in both the groups.

**KEY WORDS:** state-trait anxiety inventory, stress, yoga

### INTRODUCTION:

India has a large number population and stress like anxiety also now days it is common. In the year 2000, the population of people aged above 65 years was 20.3% and in 2011 it has reached 27%. Cancer and heart diseases are the two major causes of death in India. Dementia, stress, degenerative joint diseases and respiratory infections are the most common health problems affecting the elderly population. Daycare centers and old age homes are working hard to improve the quality of life of the aged. Different methods were being adopted to improve their lifestyle and keep them active. Music therapy, animal therapy, massages and stretch exercises are among them. Yoga is an ancient Indian science, which helps to improve physical, mental, social and spiritual health. Yoga has found its special existence in India by its peculiarities

like asana and pranayama but many consider yoga as an alternate to exercise. Few research works have been conducted in India on yoga. There is a need to show that yoga is not merely an exercise system but it has many more health benefits. It can wisely apply in the old age care to improve the quality of life. Research needed to understand the mechanism of action of yoga.

Stress is a major factor affecting the mental health of a person irrespective of age. Presentation of the stress may vary from that of fight to flight phenomenon. Chronic stress is the major cause of many physical and mental disorders. Yoga has been effectively used in the management of stress. It has been observed that the practice of yoga decreases verbal aggressiveness

compared to physical exercise. It is also useful against physical stress like cold exposure and stress due to diseases like epilepsy. Yoga has been found useful for mental disorders like Depression. In a study conducted by us, on healthy seniors participants were divided into groups as yoga, exercise and waitlist control. The yoga group showed significant improvement in quality of life and physical measures compared to the exercise and waitlist control group.

Age is an important factor to be considered while studying the physiological changes. Even though there is no age, restriction to practice yoga the effect may differ by age. There is a need to study the effect of yoga with respect to age.

'STAI' Test is a newly developing, noninvasive, simple method to assess the acute sympathetic response or stress. The aim of this study is to compare the effect of yoga on mental health in young and senior.

#### **MATERIALS AND METHODS**

In this study 25 normal healthy volunteers of both genders, interested in yoga were selected. They were divided into two groups according to age. First group with 15 participants of age group between 60 to 70 years and a second group of 10 individuals between the age group of 20 to 30 years were selected.

#### **Inclusion criteria**

1. No previous experience in Yoga
2. In senior group - Retired person with Controlled hypertension

#### **Exclusion criteria**

1. Severe systemic illnesses like severe hypertension and insulin-dependent diabetes mellitus
2. Any painful condition like arthritis
3. Recently undergone major surgery

#### **Ethical clearance**

Informed written consent was taken from the entire participant.

#### **Design of the study**

It is a comparative study between the young and senior subjects to assess the effect of yoga on mental health. Fifteen seniors and 10 young participants were assessed before and after yoga practice.

#### **METHODS:**

Selected individuals were subjected to 90 min of yoga classes twice a week for a month. Yoga classes were conducted in the morning between 6.30 am to 8 am, minimum of one hour in empty stomach. They were instructed to practice Asanas, Pranayama and Meditation, Yoga program was designed based on:

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Postures should be simple and safe

Should give stretch to the muscles of the extremities, trunk and neck

Should be performed in all postures: standing, sitting, supine and prone.

Asanas were -

#### **Standing position-**

1. Tadasana,
2. Ardha katicakrasana,
3. Pada hasthasana,
4. Trikonasana.

#### **Sitting position-**

1. Vajrasana,
2. Paschimottanasana,
3. Gomukhasana.

#### **Supine position-**

1. Pavanamuktasana,
2. Pada uttanasana - Eka and Dwipada.

#### **Prone position-**

1. Bhujangasana,
2. Shalabhasana - Eka and Dwipada.

At the end of asana session, they were advised to practice Shavasana for 5 min.

After asanas, pranayama was practiced

Kapalabhati - 3 rounds each - 30 to 50 strokes,

Nadishodana pranayama - 3 rounds,

Bhramari - 3 rounds, followed by 'OM' meditation for 15 min.

Yognidra- 5 min for relaxation.

### Assessment criteria-

State Trait Anxiety Inventory (STAI) was given before yoga practice and after one month of yoga practice to assess change in State anxiety and Trait anxiety. Each form contains 20 questions and each question is rated 1 to 4. In responding to the STAI S-Anxiety scale, examinees blacken the number on the standard test form to the right of each item statement, that best describes the intensity of their feeling 1) not at all, 2) somewhat, 3) moderately so, 4) very much so. In responding to the T-anxiety scale examinees were instructed to indicate how they generally feel by rating the frequency of their feeling of anxiety on the following four-point scale: 1) almost never, 2) sometimes, 3) often, 4) almost always. The questionnaire contains both anxiety questions (e.g. I feel frightened, I feel upset) and anxiety absent questions (e.g. I feel calm, I feel relaxed). The scoring weights for the anxiety present items are the same as the blackened numbers on the test form i.e. 1, 2, 3 and 4. The scoring for the anxiety absent items are reversed i.e. responses marked 1, 2, 3, 4 are scored 4, 3, 2, 1 respectively. Scores for both the S- and T-anxiety scales can vary from a minimum of 20 to a maximum of 80.

### Statistical analysis-

Obtained data was analyzed statistically using paired t test to test the significance within the group, and compared between the groups using unpaired t test

to assess the difference between the groups. SPSS program and Microsoft Excel 2003 were used to perform statistical analysis. Level of significance was set at  $P < 0.05$ .

### RESULTS:

In senior group, out of 15 participants, 11 were males and four were females. In the 10 young participants, seven were males and three were females. In the senior group, five members were taking medicine for hypertension and it was under control.

#### STAI - Senior group

State anxiety Score decreased from  $41.13 \pm 8.43$  to  $30.8 \pm 6.49$ ,  $P < 0.05$  a statistically significant change.

Trait anxiety Score for general feelings reduced from  $45.66 \pm 7.5$  to  $40.73 \pm 8.3$  with  $P < 0.05$ , a statistically significant decrease.

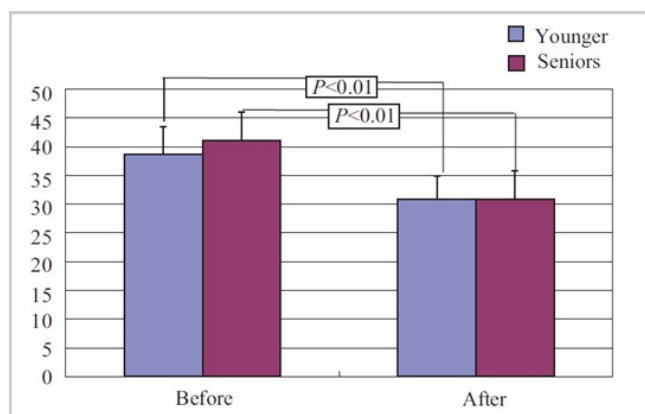
When the change in state anxiety was compared with that of trait anxiety the difference was significant. The response was more for state anxiety.

#### STAI - Younger group

State anxiety Score decreased from  $38.7 \pm 4.8$  to  $30.8 \pm 4.1$ . The change which occurred after yoga practice in present feeling was statistically significant.

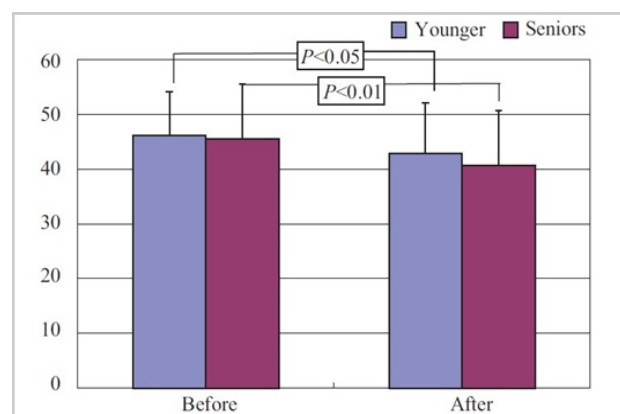
Trait anxiety score reduced from  $46.2 \pm 7.9$  to  $42.9 \pm 9.1$  with  $P < 0.05$ , a significant change was observed.

**Figure 1: State anxiety score before and after yoga in young and senior groups**



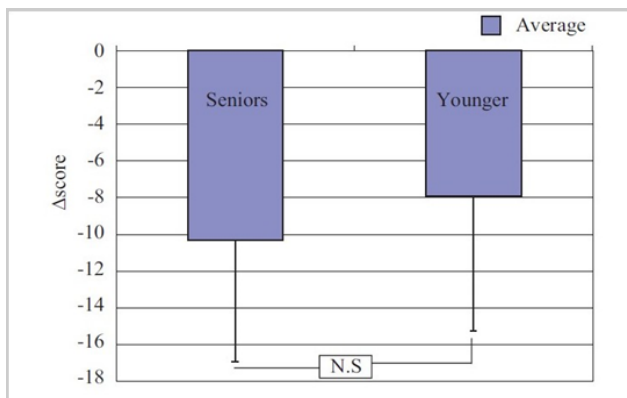
When the change in state anxiety was compared with that of trait anxiety, the difference was significant. Response was more for state anxiety compared to trait anxiety.

**Figure 2: Trait anxiety score before and after yoga in young and senior groups**

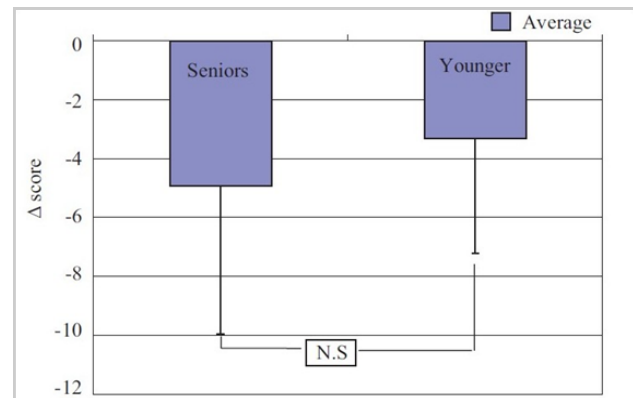


When compared between the groups for any difference in response for state anxiety and trait anxiety, the result was not significant [Figure 3] and [Figure 4].

**Figure 3: Comparison between the groups:  
Change in state anxiety score**



**Figure 4: Comparison between the groups:  
Change in trait anxiety score**



## DISCUSSION:

STAI was used as subjective criteria to assess the effect of yoga on mental health. Trait anxiety refers to relatively stable individual differences in anxiety-proneness, that is, differences between people in the tendency to perceive stressful situations as dangerous or threatening and to respond to such situations with elevation in the intensity of their state anxiety reactions. T-anxiety may also reflect individual differences in the frequency and intensity with which anxiety states have been manifested in the past, and in the probability that S-anxiety will be experienced in the future. The stronger the anxiety trait, the more probable that the individual will experience more intense elevations in S-anxiety in a threatening situation. Scores on the S-anxiety scale increase in response to physical danger and psychological stress.

Both state anxiety and trait anxiety scores decreased after yoga practice in both the groups. There was no difference in response between the groups. Both the young and seniors showed a decrease in their anxiety scores. Participants felt better and relaxed after practicing yoga. Response was more for state anxiety compared to trait anxiety. Thus yoga has both an immediate as well as long-term effect on anxiety reduction and helps to bring even behavior changes or controlled response to any type of stress if practiced regularly. It has been observed that yoga-based relaxation technique decreases state anxiety more in comparison to supine rest. In one more study where yoga was a complementary treatment for depression, state anxiety score was decreased.

Mechanism of action according to Yoga: Asana gives controlled stretch to the muscles and improves the flexibility. Relaxing Asanas like Shavasana help to relax the body and mind. Pranayama helps to gain

control over the breathing. According to yoga, by controlling the prana one can control the mind. By practicing asana, flow of prana becomes normal and by practicing pranayama one can control the prana. Even pranayama like Bhramari and yogaNidra has a soothing effect on the mind. Later, by practicing meditation one can easily concentrate and relax. Chanting 'OM' helps to control the mind from different unwanted thoughts.

Lack of a control group may be considered as a limitation of this study but sufficient references about similar studies having control are provided so that the result of this study can be attributed to yoga.

## CONCLUSION:

Yoga helps to improve the quality of mental health in both young and senior individuals by reducing the intensity of stress. Hence Yoga can be wisely applied in welfare programs to improve the Quality of Life in all age groups.

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**Cite this article as:**

[Kuldeep K. Chile, Shriprasad V. Kulkarni, Effect of yoga on mental health in young and senior citizen, ADJIM 2020; 5\(4\), p. 08-12.](#)