

## **The effects of Yoga and Meditation practices on psycho-physiological changes amongst adolescent criminals at a model jail**

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### **ABSTRACT**

Mankind has always tried to attain peace and happiness through all available means. The changing conditions of the environment- the pollution, the depleting ozone layer, the infiltration of UV radiation are affecting the genetic constitution of mankind. This has a factorial significance in changing the psychological, intellectual, physical and chemical working of mankind.

Moreover the undue feelings of depression and inferiority in today's mad race after materialism and self enhancement has frustrated the tender young age and they sometimes fall pray to the criminal acts sometimes serious enough to bring the offenders into conflict with the legal authorities.

At this point how can yoga and meditation practices help these adolescents to work upon their sick psycho-physiological conditions. The present study was conducted by the author herself dedicating three hours daily for a year amongst the adolescent criminals at the model jail Burail Chandigarh. And a drastic change in the physical lifestyle, emotional eqnanimity and self esteem could visibly be felt which was often reported to the author by the jail officials and the experiment shows it too.

The researcher a social worker while working at Tihar jail & Burail jail fell that the problem of run-away students requires dire need to be taken care of. We have worked on dropouts, special children, etc.

But the problem of running away, bunling and then falling prey to the bad elements conjoins the above research with the feld of education.

### **INTRODUCTION**

The rapid industrialization and urbanization leading to excessive crowding, too much of competition, excessive hurry and worry are some of the crucial factors which ultimately lead to behavioral, psychological, physical and pathological changes.

Besides these physical factors, the never-ending race after materials, in the absence of a channelized and moral way of life, has maligned the minds of men by stirring in various impurities of selfish motives. The obscenity and vulgarity shown uncensored by the mass media has polluted the minds of people.

Initially, a person tries his best to adapt himself to face such malignity. He rather, likes this at the initial stage as it seems lucrative in the name of providing a feeling of competition and of attaining his ends but however, by the slightest sign of failure or setback one suffers from some stresses and strains. However, if such situations keep continuing for a long time the efforts of

adaptation may fail and the person starts getting the manifestation of psychomatic changes one by one in his mind. The latent impressions of his stressful actions and experiences are carried on in the depths of personality. Ved vyasa says that such inhibitions, latencies of right and wrong actions, subliminal impression and mutations are carried on as properties to take ride of mind that is not fully seen.

Similarly, Freud says that any mental process, the existence of which is inferred in some ways from its effects but of which we are not directly aware is the 'unconscious'. The effects of stress are projected through the unconscious.

### **MEANING AND CONCEPT OF YOGA**

Yoga sums up all the aspirations and achievements of Indian thought. It is a science on the practical side and an epitome of philosophy on the intellectual side. It is thus both an intellectual system and a practical discipline.

'Yoga', tersely, being the yoga of the mind implies that the harnessing or disciplining of the mind is fundamental to all systems. This is clearly borne out by numerous authoritative statements as follows:-

"Yoga is a restraint of mental fluctuations and modifications." - Patanjali

"Balance of mind is called Yoga."

- Gita

"Yoga is the best adaptive activity."

- Gita

### **NEED OF YOGA**

It is gratifying to note that more powerful drugs are being produced and marketed for the benefit of the patients of psychosomatic disorders borne out of the strenuous life conditions of today's world. However, the use of such powerful drugs has its own drawback, such as drug dependency, drug addiction and toxic manifestation, if used for a longer time.

Hence in recent years there has been an intense search for some non-medical measures not only to have control over these diseases but also to prevent the development of these disorders.

If we look into the ancient past of mankind we can easily find out some of the methods described by the earlier philosophers, sages and spiritual leaders for maintaining tranquility of mind. Amongst them Yoga seems to be the earliest and the most effective method for providence of peace and tranquility of the mind.

Like in the Far East, especially in Japan, Zen meditation seems to be a well-developed method for attaining mental peace.

In the Middle East, where Islamic culture has been flourishing during the last twelve centuries, the control of mental activities was done through the 'Sufi' way. The main 'Sufi' technique includes prayers, which is nothing but another form of 'Bhakti Yoga'.

In spite of the availability of these method in various parts of the world, one must realize that the basic principles involved in the development of these techniques are those of Yoga. Each one of these techniques has highlighted only one or full Eightfold Yogic Discipline described by the great sage Patanjali about 2000 years ago. Since then, all these techniques had a root in Yoga.

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### **EIGHT –FOLD YOGIC PATH (PATANJALI)**

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The most commonly and conveniently accepted is the eight-fold yogic path (Ashtang yoga) of Maharshi Patanjali. Which includes:-

- 1.) Yama -- Social Ethics
- 2.) Niyama -- Personal Ethics
- 3.) Asana -- Physical Postures
- 4.) Pranayama -- Breathing Exercises
- 5.) Pratyahar -- Control of Senses
- 6.) Dharna -- Contemplation
- 7.) Dhyana -- Meditation
- 8.) Samadhi -- Supreme Bliss

This eightfold yogic path was used as a treatment in the present study, out of which only yamas, niyamas, pranayamas and meditation were used in the study.

## EFFECTS OF YOGA

The psycho-physiological effects of those yoga techniques that were used in present study are presented below:

### 1. PSYCHO-PHYSIOLOGICAL EFFECTS OF SHATKARMA ON MIND AND BODY:

Out of the six cleansing processes (Neti, Dhauti, Kapalbhathi, Basti, Tratak and Nauli) only neti, dhauti, kapalbhathi and tratak have been used in this experiment.

Before starting neti one must arrange for the particular fluid (lukewarm salty water or milk or ghee or oil or string treated with ghee) suiting to one's body's nature and requirement. With the help of *netipot*, the fluid is made to enter one nostril and exit through the other one. The process is done from both the sides. This helps to lubricate the whole passage.

Kapalbhathi is performed after neti is done in which vigorous exhalations are done at very high rate. There is no kumbhaka or retention of breath in kapalbhathi. This helps to eliminate all the unwanted particles from the nasal passage.

The process of cleaning the food pipe and stomach is called dhauti, which is again done with lukewarm saline water. The basic concept that runs in favor of the lukewarm saline water is the fact that is similar to the temperature and taste of any body fluid and also that it serves as the best cleanser for the delicate internal organs of our body. Four to five liters of water is drunk at a time and then after mild stimulation of the stomach the practitioner forces out the water of his mouth. This gushing helps in forceful expulsion of all the unwanted materials like excessive bile and stomach juices like rennin and pepsin.

**Physiological effects:** The wrong and undisciplined eating habits of these days give rise to the production of unwanted juices resulting in hyperacidity which can be very easily removed with the practice of dhauti.

In case of hypoacidity where there is lack of digestive juices in the digestive system is also tackled very easily as the mild stimulation given to stomach activate the enzymatic activity in the body.

**Psychological effects:** The conditions of hypo and hyper acidity lead the sufferer to such psychological conditions that become the causes of depression, strain and anxiety etc.

So the practice of cleansing processes can prove a great help as a remedy for both physiological and psychological ailments of both body and mind.

## **2. PSYCHO-PHYSIOLOGICAL EFFECTS OF ASANAS ON MIND AND BODY:**

Asanas provide good physical and mental health and they train body and mind to maintain the state of equipoise i.e. samatvam (equanimity).

A state of equilibrium between body and mind enables the practitioner to sit hours together in any of the meditative asana without any inner or outer disturbance. A whole reconditioning of the psycho-physiological mechanism of the body is provided by the asanas.

Some people practice asanas as freehand repetitive brisk exercises where repetition may be very rapid and even with jerky movements. Though such a practice may improve stamina and endurance of the body but the pranic value of such practice is very much doubtful. Body stability aside, there remains always a question to the mental stability in such a practice.

On the other hand, when an asana is practiced smoothly, with proper relaxation in the muscles and joints, the attention of the practitioner is focused on the infinite in yogic terms, which can simply be said on the breath (prana). This attitude of an observer of self, while awareness is directed towards breath further relaxes the body.

Breathing is however, given a special consideration for therapeutic purpose and specific advantage in the psycho-physiological well being as well.

## **3. PSYCHO-PHYSIOLOGICAL EFFECTS OF PRANAYAM ON MIND AND BODY:**

There have been described various types of pranayamas in different scriptures. According to Patanjali, a slightest change brought in the normal speed of breathing is pranayama. Prolongation of breath while inhaling and exhaling done systematically is a pranayama.

Practice of pranayama requires a conscious control over the breath. The practitioner is fully aware of what he is doing during different phases of pranayama. Thus emphasizing that pranayama is not done mechanically. Each cycle of pranayama is a voluntary act having a complexity of three distinct phases i.e. Puraka, Kumbhaka and Rechaka.

- 1.) Puraka (Inhalation)**
- 2.) Kumbhaka (Holding of breath)**
- 3.) Rechaka (Exhalation)**

**Purpose of Pranayama:** If one sees and experiences that any activity which requires a total concentration of our mind, also controls our breath which sometimes even stops for instance while threading a needle, the breath comes at a halt for some moments. This clarifies the deep correlation between concentration of mind and breathing. The mind as being engaged fully in such a mental job gives a break to the thought process. During the times of emotional updates, our breathing is changed in its rate, depth etc. Thus we can say that the emotions and the mental activities are related to the nervous system which changes our breathing.

It means that the conscious breathing will touch the life-force (prana), which is deeply connected with the mind (nervous system) and finally with emotions. The primary aim of pranayama is to control the mind. When the mind is standstill, no thoughts will occur and during thoughtlessness no emotional disturbance is possible.

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### **Physiological Significance of 1:2 ratio of Puraka and Rechaka:**

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The proposed 1:2 ratio for the duration of puraka and rechaka is significantly employed to prolong the phase of exhalation. The time periods while inhalation must be so adjusted so as to give double proportion to rechaka (exhalation). This double duration of rechaka is highly on the basis of some of these **psycho-physiological principles**:

- \* In normal course, the urge of inhalation is always stronger than that of exhalation. This is due to Carbon dioxide tension in the blood at the end of normal expiration. While we prolong the phase of exhalation we overcome this chemical reflex and discard the urge of exhalation.

- \* Elongation of the rechaka trains the chemo-receptors of our body to withstand more and more concentrations of carbon dioxide in the blood.

- \* A deep and smooth exhalation gives relaxation. It has been experimentally seen that along with our breath, various anxieties and tensions are also released with prolonged exhalations.

- \* During the prolonged rechaka, the exhalation is mostly complete. The air containing maximum percentage of carbon dioxide is completely squeezed out of the lungs (except dead space volume and residual volume), when we inhale for puraka of the next cycle of Pranayama, we get maximum quantity of a fresh air equivalent to 75% of our vital capacity.

Thus, besides providing maximum supply of oxygen to the blood pranayama also positively influences our emotions.

### **3. PSYCHO-PHYSIOLOGICAL EFFECTS OF MEDITATION ON MIND AND BODY:**

The practitioners of meditation claim that they are able to induce many changes in their physiological responses to events. Some of the practitioners even show such feats like stopping their heartbeat temporarily and alterations in their normal breathing patterns. Are these mere feats? Scientific researches have also shown and have proven these induction of physiological changes with the help of meditation. The yoga meditators are capable of decreasing their consumption of oxygen by 20%. Meditation helps in:

- \* Reduction in oxygen consumption.
- \* Reduction in carbon dioxide elimination.
- \* Marked reduction in blood lactate concentration.
- \* Rapid rise in the electrical resistance of the skin.
- \* Changes in the brain wave activity.
- \* Slowing down of heart-beat rate.
- \* Overall decrease in rate of respiration.
- \* Decrease in the volume of air breathed.

Kindersley, Dorling pointed out that, there is little or no resemblance between the physiological changes noted in meditators and those found in hypnotized or sleeping subjects. For instance, whereas after meditation there is a marked drop in oxygen consumption for about five to ten minutes, there is no such drop during hypnosis, and decrease in oxygen consumption during sleep occurs after several hours.

The physiological quieting down of the rate of heartbeat can be achieved much more rapidly in meditation than in sleep or in the state of hypnosis. Oxygen consumption is at its highest rate during physical efforts like running, jumping etc.

#### **Psychological Effects:**

Although it is not as easy to measure the psychological changes as are the physiological ones. The psychological tests have a question to their exactness. But the long-term practice of meditation result in long term psychological changes such as reduction in anxiety, improvement of emotional intelligence, enhancement of self-esteem etc. Most of the researchers agree to this that by whatever test used, meditation reduces anxiety. Regular practice of meditation has also shown an

anti-addictive effect. The ill-effect of drugs such as tobacco, alcohol, marijuana, LSD, amphetamines, barbiturates is categorically reduced with the practice of meditation.

Even the power of concentrating for longer periods, the capability to memorize faster and more material and thinking creatively and positively is also enhanced with the practice of meditation. Increased and better job performance, job satisfaction, living out of reveries, increased control over one's senses, body and mind. Personality development is also one of the important effects of meditation.

#### **Physiological Effects:**

Meditation is also proving as an alternative medical treatment for a number of medical problems.

- \* It reduces blood pressure in hypertensive patients.
- \* Reduces the blood sugar level in type 2 diabetes.
- \* Improves heart functioning in patients with coronary heart diseases and in those with angina pectoris.
- \* Reduces the high cholesterol level.
- \* Reduces the frequency of epileptic attacks.
- \* Reduces the severity and frequency of headaches in migraine patients.
- \* Lessens pains, opens the airway passages in bronchial asthma patients.
- \* Improves the psychological states of the psychiatric patients.
- \* Reduces the salivary bacteria formation and decreases gum infection and inflammation.

#### **SAMPLE FOR THE STUDY:**

All eighty adolescent jail inmates at the Burail jail in the month of June and July 2003 were taken as a sample for the present study. These eighty adolescents were already put in two barracks and study was conducted on these two intact groups out of which one group was taken as experimental group and other as control group randomly.

As any criminal is sent to jail where crime is committed by him irrespective of his inhabitancy. Moreover, the environment and treatment given to criminals in different jails of the region is almost similar. So, the result of the present study may be generalized for the jail inmates belonging to the states of Punjab, Haryana, Union Territory of Chandigarh, Himachal Pradesh and Uttar Pradesh.

#### **EXPRIMENTAL DESIGN AND PROCEDURE**

Pre-test post-test control group experimental design was followed.

The actual experiment was conducted in three phases:

##### **Pre- Test:**

A sample of eighty jail inmates from Model jail, Burail, Chandigarh was taken. These eighty jail inmates were already put in two barracks by the jail authorities. There were forty adolescents in each barrack. So, two groups were already existing in the jail. One of the two groups was randomly assigned as experimental- group and other as control-group.

In this phase the initial scores were obtained pertaining to self-esteem, self-disclosure, emotional- intelligence and social-adjustment.

##### **Treatment:**

Experimental group was given training in Yoga and Meditation exercises by the investigator herself for two months and the control group was not given any training in Yoga and mediation

exercises. The demonstrations were given by the investigator herself for the first time and even as and when required.

**Post Test:**

In this phase the final scores were obtained pertaining to self esteem, self disclosure, emotional intelligence and social adjustment.

**TOOLS USED**

1. Self-Esteem Inventory (SEI) Adult form, by Stanley Coopersmith (1987) was used to measure the Self-Esteem of the criminals.

2. Self-Disclosure Inventory by Dr. Virendera Sinha (1982) was used to assess the Self-Disclosure of the criminals.

3. Self prepared Emotional- Intelligence Questionnaire was used to measure the emotional-Intelligence of the criminals.

4. Social- Adjustment Scale from the Global- Adjustment Scale (1994) by PSY COM services was used to assess the Social- Adjustment of the criminals.

**DATA COLLECTION**

The data was collected following strictly the design and procedure of the experiment. The data consisted of pre-test and post-test scores on the tests of Self-Esteem, Self- Disclosure, Emotional- Intelligence and Social- adjustment.

Gain scores of both the groups were taken for Self- Esteem, Self- Disclosure and Emotional- Intelligence.

Reduced scores of both the groups were taken for Social- Adjustment.

**ANALYSIS OF THE DATA**

The analysis of the collected data was based on the following simple statistical techniques:

1. Descriptive statistics like Mean, Median, Standard-Deviation, Skewness and Kurtosis were calculated on pre-test and post- test scores of Self –Esteem, Self-Disclosure, Emotional-Intelligence and Social-Adjustment to ascertain the nature of distribution.

2. T-ratios were calculated to test the significant difference between the experimental group and the control group in the mean achievement scores of the variables of self-esteem, self-disclosure and emotional-intelligence and the mean reduced scores of the variable of social-adjustment.

**RESULTS AND CONCLUSIONS**

On the basis of the analysis of raw data the following conclusions were brought forward.

1. Training in Yoga and Meditation practices was found to be effective in enhancing the Self-Esteem of jail inmates as compared to those who did not have any formal training in yoga and meditation practices.

2. Training in Yoga and Meditation practices was found to be effective in enhancing Self disclosing nature of jail inmates as compared to those who did not have any formal training in Yoga and Meditation practices.

3. Training in Yoga and Meditation practices was found to be effective in enhancing each of the dimension of Self-Disclosure viz; money, personality, study, body, interest, feelings and ideas,

vocation and sex of jail inmates as compared to those who did not have any formal training in Yoga and Meditation practices.

4. Training in Yoga and Meditation practices was found to be effective in improving Emotional Intelligence of jail inmates as compared to those who did not have formal training in Yoga and Meditation practices.

5. Training in Yoga and Meditation practices was concluded to be effective in improving each dimension of Emotional Intelligence viz; self regulation, empathy, social skills, motivation and self awareness of jail inmates as compared to those who did not have any formal training in Yoga and Meditation practices.

6. Training in Yoga and Meditation practices was found to be more effective in enhancing Social-Adjustment of the jail inmates as compared to those who did not have any formal training in Yoga and Meditation Practices.