CHAPTER - III

METHODOLOGY
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METHODOLOGY

This chapter explains the procedures adopted by the researcher in selecting the subjects, design used, selection of the variables, selection of the tests, reliability of the instruments, competency of the testers, fixing up of training loads and training.

This chapter also deals with the statistical procedures employed to analyze the collected data. The study was undertaken to analyze the training effects of Yogic Practice and Physical Exercises and the combination of Yogic practice and Physical exercises among the high school boys on selected Anthropometric Measurements, Motor Ability Components and Physiological Variables.

Selection of the subjects

Hundred healthy boys from the Government Boys High School, Annanagar, Trichy were randomly selected, their age ranging between 12-15 years. With the help of a medical officer, special care was taken to find out if they were medically fit enough to undergo the training schedule of yoga and physical exercise.
**Experimental Design**

The experimental design used for this study was a random group design. The selected subjects were divided into four groups of 25 each, namely Control Group (Group A), Physical Exercise Group (Group B), Yogic Practice Group (Group C) and Physical Exercise and Yogic Practice Group (Group D).

The experimental groups (Groups B,C&D) underwent training for a period of twelve weeks whereas the control group maintained their routine activities and no special training was given. The subjects of the four groups were tested using standardized tests and procedures on selected anthropometric measurements, motor ability components and physiological variables before and after the training period to find out the effects of the training.

**MEASUREMENT CRITERIA**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Unit</th>
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<tbody>
<tr>
<td>HEIGHT</td>
<td>Centimeters</td>
</tr>
<tr>
<td>BODY WEIGHT</td>
<td>1/10th of a Kilogram</td>
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<tr>
<td>CIRCUMFERENCE OF CHEST</td>
<td>Centimeters</td>
</tr>
<tr>
<td>SPEED</td>
<td>Seconds</td>
</tr>
<tr>
<td>AGILITY</td>
<td>Seconds</td>
</tr>
<tr>
<td>EXPLOSIVE POWER</td>
<td>Centimeters</td>
</tr>
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</table>
PULSE RATE : Counts per minute

BREATH HOLDING CAPACITY : Seconds

CARDIO RESPIRATORY ENDURANCE : Seconds

Statistical Techniques

Analysis of Covariance was used to find out the significant effect of various groups and Scheffe’s post hoc test was employed to find out the best group among the four.

Selection of variables and tests

The subjects were tested on the following Anthropometric Measurements Physical and Physiological variables.

**Anthropometric Measurements**

<table>
<thead>
<tr>
<th>Test/Measurement</th>
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<tbody>
<tr>
<td>1. Height</td>
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<tr>
<td>2. Body Weight</td>
<td></td>
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<tr>
<td>3. Circumference of Chest</td>
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</table>

**Motor Ability Components**

<table>
<thead>
<tr>
<th>Test</th>
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</thead>
<tbody>
<tr>
<td>1. Speed</td>
</tr>
<tr>
<td>2. Agility</td>
</tr>
<tr>
<td>3. Explosive Power</td>
</tr>
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</table>

50 Meters Run

6x10 Meters Shuttle Run

Standing Broad Jump
Physiological Variables

1. Pulse Rate
   Test: Pulse Beat per minute

2. Breath Holding Time
   Test: Maximum Breath Holding Time

3. Cardio Respiratory Endurance
   Test: 800 Meters Run

Reliability of instruments

The equipments used for the administration of the tests were borrowed from the Research Laboratory, Department of Physical Education, Bharathidasan University.

Competency of the testers

The investigator conducted the test procedures along with ten qualified physical educationists who were well trained in handling the instruments and had adequate knowledge of the test procedures.

Data analysis

Analysis of Covariance was employed to find out if there was significance among the variables and scheffe’s post hoc test was employed to find out the difference between paired means.

Reliability of the data

To establish the reliability of the data 10 subjects were selected at random by ‘lot-method’. To ensure reliability, test and re-test method were
followed. Anthropometric Measurements, Motor Ability Components and Physiological Variables selected for this purpose were tested by the same testers under similar conditions.

Orientation of the subjects

Before the commencement of the training, the subjects were explained the purpose and importance of the study. The training and test procedures were advocated and demonstrated in detail to them to ensure proper understanding and secure effective cooperation so as to derive reliable data from the tests.

Test administration

Before the conduct of the tests, the researcher demonstrated each test to the subjects. A model performance had also been done to make them clearly understand the test procedures. The test items and the procedure for the administration used in the present study are explained below.

ANTHROPOMETRIC MEASUREMENTS

Height

Purpose : To measure the height of the subject.

Requirements

Studio meter and Score Sheet.
**Procedure**

Measurement is taken by measuring the maximum distance from the floor to the highest point on the head, when the subject faces directly ahead, feet together, and arms by the sides.

**Weight**

**Purpose**: To measure the weight of the body

**Requirements**

Electronic Weighing Machine and Score Sheet.

**Procedure**

The subjects stand with minimal movement with hands on their sides. The actual weight of the body mass is measured to one tenth of the Kilogram.

**Circumference of Chest**

**Purpose**: To measure the circumference of the body.

**Requirements**

Flexible Metal Measuring Tape and Score Sheet.

**Procedure**

This measurement is taken at the level of the middle of the sternum (breast-bone), with the tape placed horizontally around the back and under the
arms. The tape should be neither too tight nor too loose. After a normal expiration the measurement is recorded.

MOTOR ABILITY COMPONENTS

Speed

Test : 50 meters Run
Purpose : To measure the speed

Requirements

Digital Stop Watch, Whistle, Score Sheet and 50 meters marking.

Procedure

The subjects take their position behind the starting line. The starter cautions the subjects with the command “Ready” and then blows the whistle. The timers at the finishing line record the timing of the subjects. Two subjects run at a time so as to bring out the best in them.

Scoring

The score is the elapsed time to the largest one tenth of a second from the start to the instant the subjects cross the finish line.

Agility

Test : 6x10 meters Shuttle Run
Purpose : To measure Agility
Requirements

Digital Stop Watch, Whistle, Score Sheet and 10 meters marking.

Procedure

Three lines parallel each up to a length of ten meters is marked. The starting and the finishing lines are the same. The subjects stand behind the starting line and on hearing the whistle sound the subjects run forward and touch the line that is 10 meters apart with one hand and return to touch the starting line. The subjects run up and down six times to complete the 6x10 meters Shuttle Run. Two subjects are made to run at a time so as to bring out the competitive spirit in them.

Scoring

The score is the elapsed time to the largest one tenth of a second from the start and the instant the subjects crossed the finish line.

Explosive Power

Test : Standing Broad Jump

Purpose : To measure Explosive Power

Requirements

Sand pit with Take off Board, Measuring Tape and Score Sheet.
Procedure

The subjects are made to stand behind the take off mark with their feet parallel to each other and few inches apart. With slightly flexed knees and the arms moving forward and backward the subjects jump forward.

Scoring

The measurement is made from the takeoff line to the nearest point where any part of the body touches the floor. Three trials are permitted and the best jump is recorded to the nearest centimeter.

PHYSIOLOGICAL VARIABLES

Pulse Rate

Purpose : To measure the Pulse Rate

Requirements

Stethoscope, Digital Stop Watch and Score Sheet.

Procedure

The subjects are made to relax for a minimum of forty five minutes after the usual evening study hours before the test is taken. As it is a time consuming and laborious task testing hundred students, ten physical educationists helped in conducting the test that started at 4.30 p.m. The subjects are tested thrice with a minimum of 20 minutes gap between each test. The subjects are made to sit in a comfortable position while the Pulse Rate is being taken.
The investigator places the right hand fore finger on the radial artery of the subjects. The number of beats for one full minute is counted and recorded. The lowest of the three tests is taken into consideration.

**Scoring**

Number of beats per minute is recorded.

**Breath Holding Time**

Purpose: To find out the maximum ability of the subject to hold his breath.

**Requirements**

Digital Stop Watch and Score Sheet.

**Procedure**

The subjects are asked to stand at ease and inhale deeply after which the subjects held their breath as long as possible. To prevent inhalation or exhalation through the mouth during the testing time the subjects are asked to keep their mouth closed. The subjects are asked to raise their index finger to let the investigator know the start and lower the index finger to signal the end. Three trials are given with a gap of 20 minutes between each trial. The best out of the three trials are recorded.
Scoring

The time of holding the breath till the subject lets the air out is recorded to the nearest one tenth of a second using a digital stop watch.

**Cardio Respiratory Endurance**

Test : 800 meters Run

Purpose : To assess the Cardio Respiratory Endurance

**Requirements**

Digital Stop Watch, Whistle, Score Sheet, 400 meters Track.

**Procedure**

On hearing the whistle sound the subjects ran to complete the 800 meters and the timing of each individual is recorded. Five subjects ran at a time to bring out the competitive spirit in them.

**Scoring**

The score is the elapsed time to the largest one tenth of a second between the starting and the instant the subject crosses the finish line.

**Administration of treatment**

Specifically designed physical exercises and yogic practices were selected in consultation with experts from respective fields. The Experimental
Groups B, C & D practiced for twelve weeks in the evening from 4.30 p.m to 6.00 p.m, a ninety minute schedule, for six days a week excluding Sundays. Physical exercises and yogic practices were demonstrated and were explained to the subjects and their doubts regarding physical exercises and yoga were clarified.

The subjects were also instructed to be cautious regarding injuries while undergoing the training. Care was taken by the investigator to check the training load of physical exercises and yoga, especially for the Experimental Group D as this group had to practice yoga and physical exercises within the stipulated ninety minutes.

**Description of Physical Exercises**

The following were the specific physical exercises designed keeping in mind the purpose of the study.

**Speed**

- Wind Sprints
- Acceleration Drill
- High Knee Action

**Agility**

- Side Shuffle
- Zigzag Drill
- Four Corner Drill
Explosive Power

- Hopping
- Squat Jump
- Four Count Jumping Jack

Cardio Respiratory Endurance

- On the Spot Running
- On the Spot Jogging
- Skipping

The following were the general physical exercises which were less strenuous in nature.

- Heel Raise
- Alternate Toe Touch
- Ankle Rotation
- Bent Knee Sit-ups
- Push Ups
- Trunk Bending Forward & Backward
- Knee Touching Chest
- Arms Rotation Clockwise & Anticlockwise
The following was the package of specific physical exercises and general physical exercises that was incorporated so as to give enough time for the subjects to recoup energy. That is, a specific physical exercise that was strenuous in nature followed by an exercise that was less strenuous. After the warm up and stretching exercise session the following exercises were practiced.

- Elbow to opposite Toe Touch
- Walking Heel Raise
- Half Squats
- Wind Sprints
- Heel Raise
- Side Shuffle
- Alternate Toe Touch
- Hopping
- Ankle Rotation
- On the spot Running
- Bent Knee Sit-ups
- Acceleration Drill
- Push Ups
- Zig Zag Drill
- Trunk Bending Forward & Backward
- Squat Jump
- Knee Touching Chest
- On the Spot Jumping
- Arms Rotation Clockwise & Anticlockwise
- High Knee Action
- Elbow to Opposite Toe Touch
- Four Corner Drill
- Walking Heel Raise
- Four Count Jumping Jack
- Half Squat
- Skipping

**Training details of Physical Exercises**

<table>
<thead>
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<th>Duration of Training</th>
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<tr>
<td>Number of days per Week</td>
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<td>6 Days</td>
</tr>
<tr>
<td>Duration of Session</td>
<td>-</td>
<td>90 Minutes</td>
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</tbody>
</table>
Training Phases

Phase - I  -  General Warm-up and Stretching
Phase - II -  Practice of Physical Exercises
Phase - III -  Warm down

Time Schedule

Warm-up and Stretching  -  10 Minutes
Practice of Physical Exercises  -  60 Minutes
Distributed rests in between the load  -  15 Minutes
Warm down  -  5 Minutes

The training period consisted of 90 minutes per session in the evening
hours from 4.30 p.m to 6.00 p.m. for 12 weeks excluding Sundays. A total of
72 sessions were possible and the exercises were practiced according to the list
of exercises mentioned, following the time schedule.

Description of the selected Yogic Practices

A package of Yogic Practices was designed with the help of experts
keeping in mind the purpose of the study. The following is the package of
Yogic Practices.
Asanas

- Tadasana
- Vrkasana
- Trikonasana
- Artha Chakrasana
- Padahasthasana
- Padmasana
- Yoga Mudra
- Vajrasana
- Supta Vajrasana
- Paschimottanasana
- Uthirasana
- Navasana
- Bhujangasana
- Halasana
- Dhanurasana
- Pavanamukthasana
- Chakrasana
- Janusirshasana
- Salabasana
- Savasana
Pranayama

- Abdominal Breathing
- Thorasic Breathing
- Clavicular Breathing
- Nadisuddhi
- Bhastrika
- Ujjayi
- Kapalabhati
‘Tadasana’ is the mountain pose.

Procedure

- Rest the feet flat on the ground and stretch all toes.
- Heels should not come off the floor and the weight should be exactly in the center of the feet.
- Tighten the knees and pull up the kneecaps. Compress the hips and pull the muscles at the back of the thighs up.
- Keep the spine erect, raise the sternum and expand the chest.
- Return to the normal position and relax the body.
‘Vrkasana’ is the tree pose.

**Procedure**

- Place the sole of the right leg against the inside of the left thigh as high as possible with heel up and toes pointing downwards.
- Slowly bring the arm sideways and above the head and join the hands together.
- Close the eyes and keep the body upright for a fixed duration.
- Come back to starting position by releasing stage in reverse order.
- Repeat the same standing on left leg.
‘Trikonasana’ is the triangle pose.

**Procedure**

- Stand erect with the feet about a meter apart and stretch the arms sideways and raise them to shoulder level.
- Bend to the right, taking care not to bring the body forward.
- Simultaneously bend the right knee slightly.
- Place the right hand on the right foot, keeping the two arms in a line. Turn the left hand toward the right side.
- Look up to see the left hand palm.
- Repeat on the opposite side.
‘Artha Chakrasana’ is the half back bend pose.

Procedure

- Stand with your feet parallel to each other 12 inches apart.
- Raise the hands above the head and bring it slowly downwards and place the palms on the sides with the thumb in front.
- Bend backwards with the head in line.
- Gently apply force on the palms and push the back forward.
- Maintain the posture for a minimum of 30 seconds.
- Breathe normally.
- Return to starting position.
‘Padhahasthasana’ is the ‘hand’ to ‘foot’ pose.

Procedure

- Raise the hands from the side, upwards.
- Bend forward until the fingers or the palms of the hands touch the floor on either side of the feet.
- Touch the knees with the forehead.
- Keep the knees straight.
- Exhale while bending forward.
- Return to normal in reverse order.
‘Padmasana’ is the lotus posture.

**Procedure**

- Sit on the floor with legs fully stretched out.
- Place right foot on the top of left thigh sole up.
- Left foot on right thigh soles up.
- Place the left hand on left knee and the right hand on right knee, palm up with Chin Mudra.
- Body erect, eyes closed, breathe normally.
- Return to normal in reverse order.
‘Yogamudra’ means psychic union pose.

**Procedure**

- Sit in ‘Padmasana’ and close the eyes.
- Fold hands behind the back and inhale deeply.
- While exhaling, bend forward, keeping the spine straight.
- Bring the forehead to the floor or as close as possible.
- Relax the whole body in the final position breathing slowly and deeply.
- Stay in the final position for as long as it is comfortable.
- Slowly return to the starting position.
‘Vajrasana’ means thunderbolt posture.

**Procedure**

- Kneel on the floor.
- Bring the big toes together and separate the heels.
- Lower the buttocks onto the inside surface of the feet with the heels touching the sides of the hips.
- Place the hands on the knees, palms up with Chin Mudra.
- Avoid excessive backward arching of the spine.
- Breathe normally and fix the attention on the flow of air passing in and out of the nostrils.
‘Supta Vajrasana’ means sleeping thunderbolt pose.

**Procedure**

- Sit in Vajrasana.
- Slowly bend back, taking the support of the right elbow and arm first and then the left.
- Bring the top of the head to the ground, arching back. Place the hands on the chest.
- Close the eyes and relax the body.
- Breathe deeply and slowly in the final position.
- Return to the starting position in the reverse order breathing in and taking the support of the elbows and arms.
‘Paschima’ means posterior and ‘tan’ means stretch – stretching the posterior that is the back and hip muscles.

**Procedure**

- Sit, stretch legs fully toes inwards.
- Inhale for three seconds.
- Exhaling for three seconds bend forward and touch toes, with outstretched hands, head touching knees, drop elbows.
- Retain position for six seconds.
- Inhaling for three seconds return to starting position.
‘Uthirasana’ means Camel Posture.

**Procedure**

- Sit in Vajrasana and rise with knees firm on the floor.
- Keep the feet together. Lean backward, reaching for the right heel with the right hand and the left heel with the left hand.
- Push the abdomen forward, trying to keep the thighs vertical and bend the head and spine backward as far as possible.
- The arms should anchor the shoulders to maintain the arch of the back.
- Return to the starting position by slowly releasing the hands from the heels one at a time.
‘Navasana’ means boat posture.

**Procedure**

- Lie in the base position, palms down.
- Keep the eyes open throughout.
- Breathe in deeply. Hold the breath and then raise the legs and arms.
- Raise the shoulders, head and trunk off the ground.
- Balance the body on the buttocks raising the hands off the floor.
- The hands should be open with the palms facing downwards.
- Look towards the toes.
- Remain in the final position and hold the breath.
- Breathe out and return to the supine position.
‘Bhujangasana’ is the cobra pose.

**Procedure**

- Lie on the stomach, legs stretched out, point toes outwards, place palms on floor by side of chest, forehead resting on the ground.
- Slowly lift head and shoulder backwards without pressure on palms, while inhaling for three seconds.
- Retain breath for six seconds.
- Return to starting position while exhaling for three seconds.
- Lie down in Makrasana for 3-5 minutes.
‘Halasana’ means plough pose.

**Procedure**

- Lie flat on the back with the legs and feet together. Place the arms beside the body with the palms facing down.
- While exhaling, lower your legs over the head, one by one.
- Inhale, then exhale, extending your legs over the head without bending the knees. Place toes on the floor.
- Stretch arms on the floor in the direction opposite to the legs.
- Breathe normally.
- Come out of the posture, bend the legs, take the buttocks back, and slowly slide down, keeping palms alongside hips.
‘Dhanurasna’ means bow posture.

**Procedure**

- Lie on the stomach flat on the floor.
- Gently fold the right leg and hold the ankle with the right hand.
- Fold the left leg and hold the ankle with the left hand.
- Raise the head, chest and thighs as high as possible by gradual application of force on the hands and legs.
- Raise the body and make a back arch on vertebral column as much as possible.
‘Pavanamukthasana’ is the leg lock posture.

**Procedure**

- Lie down on the back.
- Keeping legs together, hug tightly the drawn up knees against the chest.
- Raise your head and touch the chin with the knees.
- Keep the breath normal and toes stretching outside.
- Place the head on the ground when the neck gets tired.
- Return to starting position.
‘Chakrasana’ means wheel pose.

**Procedure**

- Lie down on back.
- Bend the knees; keep the palms on the ground on either side of the head with fingers pointing downwards.
- Raise the body to knee level and rest the head on the ground.
- Lift the body and head and arch the back, so that the body weight is placed on the hands and feet.
- Stretch the arms steadily until the elbows are straightened and lift the body as high as possible and breathe normally.
- Return to normal position.
‘Janu Sirhasana’ means head to knee pose.

**Procedure**

- Sit with the legs outstretched and the feet together.
- Bend the left leg, placing the sole of the foot against the inside of the right thigh. Keep the left knee on the floor.
- Place the hands on top of the right knee, keeping the spine straight and the back muscles relaxed.
- Slowly bend forward, sliding the hands down the right leg, and grasp the right foot and touch the knee with the forehead.
- Hold the position for as long as is comfortable.
- Return to the starting position and rest the hands on the knees.
- Repeat with the left leg stretched.
‘Salabasana’ means locust posture.

**Procedure**

- Lie flat on the stomach with the legs and feet together and the soles of the feet uppermost.
- The arms may be placed either under the body or by the sides.
- Rest the chin on the floor throughout the practice.
- Breathe normally, close the eyes and relax the body.
- Slowly raise the legs as high as possible, keeping them straight and together.
- Slowly lower the legs to the floor and return to the starting position and relax the body.
‘Savasana’ means corpse posture.

**Procedure**

- Lie supine, feet approximately two feet apart, hand 10 inches away from sides.
- Create a ‘let go’ sensation, eyes closed.
- Breathe normally and relax.
ABDOMINAL BREATHING

Abdominal or diaphragmatic breathing is practiced by enhancing the action of the diaphragm and minimizing the action of the rib cage. During the inhalation the diaphragm moves downward, pushing the abdominal contents downward and outward. During exhalation the diaphragm moves upward and the abdominal contents move inward.

Procedure

- Lie in savasana and relax the whole body.
- Continue observing the natural breath for some time.
- Place the right hand on the abdomen just above the navel and the left hand over the centre of the chest. The right hand will move up with inhalation and down with exhalation. The left hand should not move with the breath.
- Feel the abdomen expanding and contracting.
- Continue breathing slowly and deeply.
- Inhale while expanding the abdomen as much as possible, without expanding the rib cage.
- At the end of the inhalation the diaphragm will be compressing the abdomen and the navel will be at its highest point.
- On exhalation the diaphragm moves upward and the abdomen moves downward.
• At the end of the exhalation the abdomen will be contracted and the navel compressed towards the spine.

THORACIC BREATHING

Thoracic breathing utilizes the middle lobes of the lungs by expanding and contracting the rib cage.

Procedure

• Lie in savasana and relax the whole body.
• Expand the chest as much as possible.
• Exhale by relaxing the chest muscles. Feel the rib cage contracting and forcing the air out of the lungs.
• Breathe slowly and deeply through the chest with total awareness.
• The diaphragm should not be used.
• Continue thoracic breathing for a few minutes, pausing slightly after each inhalation and exhalation.

CLAVICULAR BREATHING

It occurs after the thoracic inhalation has been completed. In order to absorb a little more air into the lungs, the upper ribs and the collar bone are pulled upwards by the muscles of the neck, throat and sternum. This requires
maximum expansion on inhalation and only the upper lobes of the lungs are ventilated.

**Procedure**

- Lie in savasana and relax the whole body.
- Inhale fully, expanding the rib cage.
- When the ribs are fully expanded, inhale a little more until expansion is felt in the upper portion of the lungs around the base of the neck. The shoulders and collar bone should also move up slightly.
- Exhale slowly, first releasing the lower neck and upper chest, then relax the rest of the rib cage back to its starting position.

**NADISUDDHI**

Nadi Suddhi means the alternate nostrils breath or Sun and Moon breath.

**Procedure**

- Sit in a comfortable sitting posture.
- Close the right nostril with the right thumb and slowly, smoothly and deeply inhale the air through the left nostril.
- Close the left nostril with the right hand little and ring fingers.
- Open the right nostril by releasing the right thumb, now slowly and smoothly breathe out the air through right nostril. Then slowly, smoothly and deeply inhale the air through right nostril.
• Then close the right nostril with the thumb. Gently open the left nostril by releasing right hand little and ring fingers. Now slowly and smoothly breathe out the air through left nostril.

BHASTRIKA

‘Bhastrika’ means bellows breath - by alternate nostrils.

Procedure

• Sit in Padmasana posture.

• Close the eyes and relax the whole body.

• Close the right nostril with the right thumb. The inhalation and exhalation of air is done with full force through the left nostril quickly for about 10-20 times.

• After the rapid breath is over, take a slow smooth deep inhalation through the left nostril.

• Close the left nostril with the thumb. The inhalation and exhalation of air is done with full force through the right nostril quickly for about 10-20 times.

• After the rapid breath is over, take a slow smooth deep inhalation through the right nostril.
UJJAYI

Ujjayi means victorious breath.

Procedure

➢ Sit in a comfortable position and Exhale.
➢ Breathe in through both nostrils in a slow and continuous flow by partly closing the glottis.
➢ Keep the abdomen muscles under control and contracted slightly throughout inhalation in order to get expansion of the thoracic cage.
➢ Hold the breath comfortable for a few seconds by applying all the three bhandhas. The air should be then exhaled while the glottis is kept half closed and the abdomen muscles are tightly contracted in order to empty out the air from the lungs.

KAPALABHATI

‘Kapala’ means skull and ‘bhati’ means light.

Procedure

• Sit in a comfortable pose.
• Close the eyes and relax the whole body.
• Inhale deeply through both nostrils, expanding the abdomen and exhale with a forceful contraction of the abdominal muscles.
• The next inhalation takes place by passively allowing the abdominal muscles to expand.

• Count each respiration mentally. After completing 10 rapid breaths in succession inhale and exhale deeply.

**Training Details of Yogic Practices**

<table>
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<tr>
<th>Training Details</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>Duration of Training</td>
<td>12 Weeks</td>
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<tr>
<td>Number of Days per Week</td>
<td>6 Days</td>
</tr>
<tr>
<td>Duration of Session</td>
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**Training Phases**

- Phase – I - Asanas
- Phase – II - Pranaymas

**Time Schedule**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Asanas</td>
<td>50 Minutes</td>
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<tr>
<td>Pranayamas</td>
<td>25 Minutes</td>
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<tr>
<td>Distributed Relaxation</td>
<td>15 Minutes</td>
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The training period consisted of 90 minutes per session in the evening hours from 4.30 p.m to 6.00 p.m. for 12 weeks excluding Sundays. A total of 72 sessions were possible and the selected asanas and pranayama were practiced. The practice of asanas had three phases;
i. The Start

ii. The Hold

iii. The Release

The Asanas were designed in sequence of counter movements with variations from one asana to another (i.e) when one asana required forward bending it was complemented by another asana that had a back bending pose. E.g. Halasana against Dhanurasana.

Pranayama was practiced with three distinct phases;

i. Inhalation

ii. Suspension

iii. Exhalation

Due care was taken to provide a dust free environment for the practice of asanas and pranayama in a serene atmosphere. The practice of asanas and pranayama was covered systematically on rotation as per the scheduled package.

Physical Exercises and Yogic Practices

The Physical Exercise & Yogic Practice Group (Group D) practiced both the same package of Physical Exercises that was done by Physical Exercises Group (Group B) and the same set of Yoga that was practiced by Yogic Practices Group (Group C) for 90 minutes. Since Group D had to practice the Physical Exercise and Yoga within the stipulated time of 90 minutes the
repetition per session was half less when compared to Group B and Group C so as to keep up the time schedule of 90 minutes per session.

Training Details of Physical Exercises & Yogic Practices

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<thead>
<tr>
<th>Duration of Training</th>
<th>-</th>
<th>12 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Days per Week</td>
<td>-</td>
<td>6 Days</td>
</tr>
<tr>
<td>Duration of Session</td>
<td>-</td>
<td>90 Minutes</td>
</tr>
</tbody>
</table>

Training Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>-</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase - I</td>
<td>General Warm-up and Stretching</td>
<td>10 Minutes</td>
</tr>
<tr>
<td>Phase - II</td>
<td>Practice of Physical Exercises</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>Phase - III</td>
<td>Practice of Yoga</td>
<td>5 Minutes</td>
</tr>
</tbody>
</table>

Time Schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>-</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-up and Stretching</td>
<td>-</td>
<td>10 Minutes</td>
</tr>
<tr>
<td>Practice of Physical Exercises</td>
<td>-</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>Distributed Relaxation in between load</td>
<td>-</td>
<td>5 Minutes</td>
</tr>
<tr>
<td>Practice of Asanas</td>
<td>-</td>
<td>25 Minutes</td>
</tr>
<tr>
<td>Pranayama</td>
<td>-</td>
<td>15 Minutes</td>
</tr>
<tr>
<td>Distributed Relaxation in between load</td>
<td>-</td>
<td>5 Minutes</td>
</tr>
</tbody>
</table>

The training period consisted of 90 minutes per session in the evening hours from 4.30 p.m to 6.00 p.m. for 12 weeks excluding Sundays. A total of 72 sessions were possible and the selected exercises and yogic practices were practiced.