
YOGA FOR DEAF AND DUMB PESONS

CONTENTS

PAGE NO.

CHAPTER-1 INTRODUCTION

- 1.1 HISTORY OF YOGA
 - 1.2 MEANING AND CONCEPT OF YOGA
 - 1.3 TYPES OF YOGA
 - 1.4 YOGA IN ANCIENTTIMES
 - 1.5 YOGA IN MODERN WORLD
 - 1.6 BENEFITS OF YOGA
 - 1.7 STATEMENT OF PROBLEM
 - 1.8 LIMITATIONS
 - 1.9 OBJECTS OF THE STUDY
 - 1.10 HYPOTHESIS
 - 1.11 SIGNIFICANCE OFTHE STUDY
 - 1.12 MEANING AND ELU CIDATION OF THE VOCABULARY
- REFERENCE

CHAPTER-2 REVIEW OF THE LITERATURE

REFERENCE

CHAPTER-3 METHOD AND PROCEDURE

- 3.1 SAMPLE
 - 3.2 FITNESS VARIABLES
 - 3.3 ASANAS
 - 3.4 PRANAYAM
 - 3.5 PLAN OF THE STUDY
 - 3.6 EXPERIMENTATION
 - 3.7 ORGANIZATION OFTHE ANALYSIS
 - 3.8 STATISTICAL STU DY OF INFORMATION
- REFERENCE

CHAPTER-4 RESULTS AND DISCUSSDN

- 4.1 SECTION I
- 4.2 SECTION II
- 4.3 DISCUSSION OF RESULTS OF THE STUDY

CHAPTER-5 SUMMARY CONCLUSION AND SUGGESTIONS

- 5.1 MAJOR FINDINGS
- 5.2 CONCLUSIONS
- 5.3 IMPLICATIONS OFFINDINGS

BIBLIOGRAPHY

APPENDICES

Chapter – 1

INTRODUCTION

For the modern generation life has become a race track where everybody wants to come first. Right from the childhood parents expect their kids to be an all rounder, whether it is sports, cultural activities or academics. To compete with each other, today's youth specializes in every field and wants to win by any possible means. Similarly, in the field of sports and physical education the capacities have developed beyond belief.

The records are made and broken every day. And being one of the competitors', human being is forgetting his own precincts. One is not able to accept that certain things are unattainable for him as well, and to achieve those unattainable he take the shelter of drugs and steroids, and those artificial means leaves him of nowhere.

When someone loses his peace of mind, medals and certificate becomes useless and incapable of bringing his happiness. A stressful person falls prey of unhealthy company and involves himself in unsocial and unhealthy practices.

Sometimes, people are envious of other's name and fame and imagine other's prosperity as their defeat. They always remain disturbed. Everybody in his own field is mentally anxious. Here comes the role of yoga. It can play a vital role in eliminating mental stress from life. The national policy of education had given emphasis on yoga right from the school level. It states, "As a system which promotes an integrated development of body and mind,

yoga will receive special attention. Efforts will be made to introduce yoga in all schools; to this end, it will be introduced in teachers training courses.¹

Yoga is not a religion; it is a way of living whose aim is 'a healthy mind in a healthy body'.

Man is a physical, mental and spiritual being; yoga helps in promoting a balanced development of all the three. Other forms of physical exercises, like aerobics, assure only physical well-being. They have little to do with the development of the spiritual or astral body.

Yogic exercises recharge of the body with cosmic energy. This facilitates

:

- Attainment of perfect equilibrium and harmony.
- Promotes self- healing.
- Removes negative blocks from the mind and toxins from the body.
- Enhances personal power.
- Increases self-awareness.
- Helps in attending focus and concentration, especially important for children.
- Reduces stress and tension in the physical body by activating the parasympathetic nervous system.

The aspirant feels rejuvenated and energized. Thus, yoga bestows upon every aspirant the powers to control body and mind.

The role of yoga in achieving the best possible sports performance is considered to be vital one. The word 'yoga' signifies functional integration of spirituo-psychosomatic development, ensuring not only health of the body but also experiencing the sense of well being, sense of the mind and soul simultaneously. It has, therefore, laid down certain ways and means in the form of various physical and mental procedures for attaining physical and psychological fitness.

Although the western world has come to understand yoga as a form of stretching or exercise, yoga is more than a series of poses: it is a way of being. Yoga can be practiced by anyone. There is no need to ascertain an ideal physical or mental condition, only the will to begin and engage.

History of yoga

1.1 Historical development of yoga

Yoga is one of the oldest sciences of the world originated from India, which is very useful for both getting and maintaining the physical, mental and moral health. The yoga has started with the development of civilization. According to one of the classical texts of yoga known as Hathayoga pradipika, **Lord Shiva** is the first teacher of yoga, where as Bhagavad -Gita tells **Lord Krishna** is the first teacher of yoga.

Some historical researchers have proved that yoga was present during the time of Vedas. After the period of Vedas, a great sage Maharshi **Patanjali** systematized yoga, its meaning and its related knowledge through his **Patanjali yoga sutras**. After Patanjali, many sages contributed greatly to the field through their practices and literatures.

For the purpose of systematic study of the historical development of yoga, it may be divided into three periods. They are

1. Pre-Patanjali period: [before 500 B.C.]
2. Patanjali period: [500 B.C to 800 A.C.]
3. Post-Patanjali period: [800 A.C. onwards]

1.2 Pre Patanjali period

The historical evidences of yoga were seen up to 4500 B.C. So the time before 4500 B.C. and after 4500 B.C. up to Patanjali period is considered as **pre Patanjali period**. The main sources which we can get during those times are Vedas, Upanishads, Smrti, teachings of Buddhism, Jainism, Panini, Epics and Puranas.

1.2.1 Vedas

Among the available Vedas four are important, namely Rig-Veda, Yajurveda, Samaveda and Atharvaveda. There is no any direct explanation of word yoga in Vedas, whereas the word '**dhira**', is mentioned in all Vedas. The meaning of dhira is self-realiz. The sitting posture i.e., asana, the pranayama,

the mudras, meditation techniques, the cleanliness yama and niyama, the dharanas are explained in Vedas. The asanas explained in Vedas are mainly for the purpose of meditation.

The **sun salutation** was the part of routine activity during that time. The pranayama that is told in the Yajurveda, which is practiced during the regular practice, is same as Anuloma viloma. The various types of meditation techniques are also explained in the Vedas. The practice of mudras is also explained in the Vedas. The Vedas also explain about the tapas, vratas and the ultimate aim of them are to attain moksha (liberation).

1.2.2 Upanishads

Upanishads are the essences of the Vedas. Among the available Upanishads, 10 are important. The important Upanishads that have explanations about yoga are as follow. The panchakosha theory is explained in Taittiriya Upanishad which is the main theory used in the treatment of diseases through yoga. Kathopanishad explains procedure to attain samadhi. This Upanishad explains the qualities of soul. The Kenopanishad, the Ishavasya Upanishad, Shwetasvatara Upanishads also give details about yoga.

1.2.3 Smrti

The Smritis are the texts, which deal about the discipline that one has to follow in his life. The main smrtis, which give details about yoga, are Manusmrti, Yajnavalkya smrti, and Harita smriti. According to the smrtis

there are four stages in life, they are

1) Brahmacharya

2) Grihastha

3) Vanaprastha

4) Sanyasa

The smrtis also give details about the lifestyles that we have to follow during these different stages of life. According to smrtis one has to sit in a seat that is prepared from darbha (one type of grass) for meditation. The asanas good for meditation are also explained in smrtis.

1.2.4 Jainism

In Jainism also yoga is explained. According to Jainism the movement of the mind and body towards the soul is called yoga.



LORD MAHAVIR

1.2.5 Teachings of Buddha

According to Buddha body is a fit vehicle to get the tranquillity of mind. For getting the steadiness of mind the body should become steady at first. The

methods of meditation are also explained in teachings of Buddha. According to that there are two types of meditations: suksma dhyana and nirahara dhyana.

1.2.6 Panini

He was a famous grammarian of Sanskrit. He wrote 8 Chapters, (lessons) of grammar known as Astadhyayi. The use of word yoga is there in his work.

1.2.7 The Epics

The Ramayana and Mahabharata are the two main epics that give the details about yoga. Ramayana consists of 24,000 shlokas distributed among seven Chapters. The great book of yoga known as **Yoga vasistha** was written in this time. In Ramayana the moral disciplines, yama and niyama are explained in detail. We can see the definition of dharma in this book. Mahabharata is another important epic, which gives details about yoga. The Bhagavadgita known as jewel of Mahabharata gives the definition for yoga.



GOUTAM BUDDHA



PANINI

1.2.8 Puranas

Among the available puranas eighteen are important. Out of these few puranas give details about yoga. The Bhagavata purana explains Bhakti yoga. Linga Purana gives the details about yama, niyama and pranayama. Vayu Purana gives details about pratyahara, dharana, and dhyana.

1.3 Patanjali Period [500 BC – 800BC]

The period between 500 BC and 800 AD is considered as Patanjali's period. Patanjali systematized yoga in the form of sutras. Patanjali was the author of classics in three important fields. He wrote a treatise on grammar; the Mahabhasya. He has also written book on Ayurveda. He has the credit of compiling Yoga sutra.

Patanjali's yoga sutra consists of 196 sutras. It is divided into four Chapters, and they are,

- 1.** Samadhi pada: This Chapter deals with the nature of samadhi.
- 2.** Sadhana pada: This Chapter deals with the methods for refining the body mind and senses.
- 3.** Vibhuti pada: In this Chapter the properties of yoga and art of integration through concentration, meditation and absorption indicated. The manifestation of super natural power is discussed in it.
- 4.** Kaivalya pada: In this final section, Patanjali draws the attention of the yogi to the soul. The various types of samadhi are explained in this Chapter. These Yoga sutras explain every aspect of yoga systematically.

PATANJALI



1.4 Post Patanjali period:

The time after Patanjali up to today is known as post Patanjali period. The yoga developed gradually after the period of Patanjali. Many classical texts about yoga were written during this period. The great personalities of yoga and their texts on yoga are as follow:

(i) Shankaracharya (8th Century): Shankaracharya proposed Advaita Philosophy. He has written **Yoga Taravali**, which tells about Hatha yoga and **Saundarya lahari** that explains Kundalini yoga. He has also written commentary on Patanjali yoga sutras.

(ii) Ramanujacharya (11th Century): He has written the book Tantra sara that explains Kundalini yoga. He proposed Vishistadvaita philosophy.

1.4.1 Bhakti yoga period

Bhakti yoga was popular during 12th century to 16th century. Narada bhakti sutra, the famous text on bhakti became popular at that time.

Surdas, Tulsidas, Purandaradas, Kanakadas, Vittaladas and Meerabai were some of the famous Bhakti yogis. They popularized the Bhakti yoga through devotional songs. They have also written devotional songs.



SHANKARACHARYA RAMANUJACHARYA

1.4.2 Hatha yoga period:

The Hatha yoga period is from 9th century to 18th century. The development was at its peak during the 14th century. **Adinatha** was the founder of Hatha yoga.

The various Hatha yogis and the books written by them on Yoga are as follows.

- Matsyendranatha (9th Century) --- Kala jnana nirnaya
- Goraksanatha (9th Century) --- Goraksa Shataka
- Chauranginatha (11th century) --- Chaurangi Shataka
- Svatmarama (14th Century) --- Hatha Pradipika
- Gheranda (15th Century) ---- Gheranda Samhita
- Shrinivasa Bhatta (17th Century) --- Hatha Ratnavali

The hatha Yoga period Yoga was popularized by some great personalities'. The famous personalities and their contributions for popularizing Yoga during this period are as below.

* Sadashiva Brahmendra Saraswati: He has written '**Shiva Yoga Dipika**', which tells about Yama, Niyama, Asanas, and Adharas of the body.

Ramana maharshi, Ramakrishna parama hamsa, Parama hamsa Yogananda gave their contributions for Raja yoga. The great disciple of Ramakrishna parama hamsa, Swami Vivekananda, has written commentary on Patanjali yoga sutras. He was also a great sadhaka.

1.5 Meaning and concept of yoga

The meaning and definition of yoga had been discussed by a lot of philosophers and commoners yoga is a philosophy that nurtures and connects the body, mind, spirit and soul, within ourselves and to one another. Yoga is

an extremely broad term. Its meaning is personal and unique to each individual, rendering a lifelong journey through physical health, well-being, mental clarity and eventually, unadulterated bliss.

Yoga is a way of life, an art of righteous living or an integrated system for the benefit of the body, mind and inner spirit. This art originated, was perfected and practiced in India thousands of years ago. The references to yoga are available in 'Upanishads' and 'Puranas' composed by Indian Aryans in the later Vedic and post- Vedic period. Still 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.

The Geeta² defines yoga as the evenness temper (Sidyah asidyoh samo bhutwa sawatwom yoga uchyate; ch. II 48), it is true union of jivatma and paramatma. Swami Digambarji satyapal (1987)³ says, "The union of Atman and paramatma is yoga". "The word 'yoga' is derived from the Sanskrit root 'Yuj' which means union or merger, to bind, to join, and to attach, the merger of soul with God and experience of oneness with him is yoga". Yoke in English is said to be the same word as yoga.

Yoga means union of the mind, body and spirit with the divine and while this refers to a certain state of consciousness both individual and universal, it is also a method to help one to reach that goal.

The real meaning of “yoga is deliverance from contact with pain and sorrow”. A lamp does not flicker in a place where no wind blows, so is a yogi who controls his mind, intellect and self, being absorbed in the spirit within him. Practically speaking yoga is a science, which deals with the health of body and harmony of mind. The main purpose of yoga is to provide with sound body and a tension free sound mind. Its ultimate objective is ‘self-identification’, ‘self-perfection’, by the method of ‘self-purification’ and ‘self-realization’.

The word yoga occurs in Rigveda⁴ (1976) in various senses, such as yoking or harnessing or achieving the unachieved. The word yoga in sense of yoke is used in many places in the Rig-Veda and Brahman śapath and this word with its derivation yugya (carrier of the yoke and animals) is quite familiar in the later Sanskrit literature.

Eliade (1958)⁵ has rightly suggested that the four basic and interdependent concepts, i.e. four ‘kinetics ideas’ that brings us directly to the core of Indian spirituality. They are ‘karma’, ‘maya’, ‘nirvana’ and ‘yoga’. Eliade ends by emphasizing that the pursuit of truth by the Indian sage is for achieving liberation or freedom from the limitations of human condition, which distinguishes him from a western philosopher.

A coherent history of Indian thought could be written starting from any one of these basic concepts; the other three would inevitably have to be discussed. In terms of Western philosophy, we can say that, from the post-Vedic period on ward, India has above all thoughts to understand.

(1) The law of universal causality, which connects man with the cosmos and condemns him to transmigrate indefinitely. This is the law of karma.

(2) The mysterious process that engenders and maintains the cosmos and, in so doing, makes possible the “eternal return” of existences, this is maya, cosmic illusion, endured (even worse- accorded validity) by man as long as he is blinded by ignorance (avidya).

(3) Absolute reality, “situated” somewhere beyond the cosmic illusion woven by maya and beyond human experience as conditioned by karma: pure being. The Absolute, by whatever names it may be called—the Self (atman), Brahman, the unconditioned, the transcendent, the immortal, the indestructible, nirvana, etc.

(4) The means of attaining to being, the effectual techniques for gaining liberation. This corpus of means constitutes yoga properly speaking.

A certain number of ancient treatises deal exclusively with the principles; the methods are different systems of yoga. The main treaties, which form the basic scriptures of yoga, are the followings:-

i) The ‘Yoga Upanishad’ which are the Vedic literature and which deals with all the aspects of yoga.

ii) The ‘Yoga Darshan’ of Patanjali and its commentaries which form the basic treatise of ‘Raja yoga’.

iii) The technical treatises of ‘Hath yoga’ such as the Hath yoga Pradipika, Gherand samhita, Shiva samhita etc.

Yoga has always been unrelated with any religion or sect in India. It has remained continuous and independent discipline which could be adopted by anyone, irrespective of religion, creed, caste, sex or age without any hindrances. Yoga aims at integrated and harmonious development of all the potentialities of man.

According to Kevalyanda and Vinekar, (1968)⁶ yoga lays great stress on three aspects. These three integral steps are:-

- i) Cultivation of correct psychological attitude.
- ii) Re-conditioning of neuron-muscular and neuron-glandular system. In fact it enables the whole body to withstand greater stress and strain at the same time.
- iii) Laying great emphasis on health, giving diet and encouraging the natural process of elimination, whenever it is necessary.

1.6 Types of yoga

1.6.1 Ashtanga yoga (Patanjali's Ashtanga yoga - eight limbs / step yoga)

The basis of ashtanga yoga is the yoga sutras (Sanskrit verses) of Patanjali. We will consider the different aspects of yoga while remaining under the guiding principles of Patanjali's yoga (Ashtanga yoga). The asana, pranayama, dharana, dhyan & samadhi or the yama and niyama are systematically described by Patanjali in his Sanskrit sutras (verses).

1. Yama (principles)

2. **Niyama (personal disciplines)**
3. **Asana (yoga positions or yogic postures)**
4. **Pranayama (yogic breathing)**
5. **Pratyahara (withdrawal of senses)**
6. **Dharana (concentration on object)**
7. **Dhyan (meditation)**
8. **Samadhi (salvation)**

1.6.2 Hatha Yoga

The term Hatha yoga has been commonly used to describe the practice of asana (postures). The syllable 'ha' denotes the pranic (vital) force governing the physical body and 'tha' denotes the chitta (mental) force thus making Hatha yoga a catalyst to an awakening of the two energies that govern our lives. More correctly the techniques described in Hatha yoga harmonize and purify the body systems and focus the mind in preparation for more advanced chakra and kundalini practices.

The Hatha yoga system includes asana along with the six shatkarmas (physical and mental detoxifying techniques), mudras and bandhas (psycho-physiological energy release techniques) and Pranayama (pranic awakening practices). Fine tuning of the human personality at increasingly subtle levels leads to higher states of awareness and meditation.

1. Yogasana (yoga positions)
2. Six shatkarmas (physical and mental detoxifying techniques)
3. Mudras and bandhas (psycho -physiological energy release techniques)
4. Pranayama (pranic awakening practices)

1.6.3 Mantra yoga

(Japa yoga, requirements, state of consciousness in Mantra yoga, methods of chanting, effects of mantra, how to practice and rules of mantra chanting)

Mantra yoga has its origin in Vedic sciences and also in Tantra. In fact all the verses in Vedas are called mantras. It is said that any person who can chant or sing Vedas can achieve the ultimate salvation or union with supreme consciousness. Only by chanting the mantras, is the aim of Mantra yoga.

1.6.4 Bhakti yoga

Bhakti is yoga of devotion or complete faith. This faith is generally in the God or supreme consciousness in any of the forms. It may be Lord Rama, Krishna, Christ, Mohammed, Buddha etc. It may be a Guru for his disciples. Important thing is the person interested in following this path should have very strong emotional bond with the object of faith. The flow of emotional energy is directed to this object.

Mostly people suppress their emotions and that often reflects in the form of physical and mental disorders. This Bhakti yoga releases those suppressed emotions and brings the purification of inner self. Continuous

meditation of God or object of faith gradually decrease the ego of the practitioner, which further prevents new distractions, fickleness or even pain and induces strong bonds of love. Slowly the practitioner loses the self identity and becomes one with the object of faith; this is a state of self realization.

1.6.5 Karma yoga

Karma yoga is a path of devotion to the work. One loses his identity while working, only selfless work remains. This state is very difficult to achieve. Generally some rewards or incentives or outcome follows the work and one is attached to this reward or incentive. This is not the Karma yoga. Non-attachment with the work and becoming the perfect instrument of the super consciousness in this manifested universe is the ultimate aim of Karma yoga.

In the initial stages of Karma yoga, individual possesses strong sense of ego and consciously or unconsciously he is attached to the fruits of his efforts or at least praise or recognition but by continuous involvement in the work and change in mental attitude, one can surely disassociate himself from the ego and his own personality. In this state the work becomes worship to the God, it becomes spiritual, also the individual becomes expert, skilled and yogi. He achieves stability of mind in all conditions, he is not disturbed or excited or happy in any of the situations. He becomes divine and his actions represent God's will.

The essence of Karma yoga as extracted from 'Bhagvad Gita' says: The world confined in its own activity except when actions are performed as worship of God. Therefore one must perform every action sacra-mentally and be free of his attachments to the results.

1.6.6 Jnana yoga

Jnana yoga is the process of converting intellectual knowledge into practical wisdom. It is a discovery of human dharma in relation to nature and the universe. Jnana yoga is described by tradition as a means to obtain the highest meditative state and inner knowledge.

Jnana literally means 'knowledge', but in the context of yoga it means the process of meditative awareness which leads to illuminative wisdom. It is not a method by which we try to find rational answers to eternal questions; rather it is a part of meditation leading to self-enquiry and self-realization.

Some of the components of Jnana yoga are:

1. Not believing but realizing.
2. Self-awareness leading to self-analysis.
3. Experiencing knowledge.
4. Realizing the personal nature .
5. Developing intuitive wisdom.
6. Experiencing inner unity .

1.6.7 Kundalini yoga (from the Tantras)

This system of yoga is concerned with awakening of the psychic centers or chakras, which exists in every individual. There are six main chakras in the human beings. The mind is made up of different subtle layers. Each of these layers progressively is associated with the higher levels of consciousness. Each of these levels is related to the different chakra or psychic center located throughout the psychic body.

There are number of other chakras apart from the six main, which are associated with planes below the human level. In all we have chakras that connect us to animal levels of mind, to the instinctive realms of being or to the sublime heights of consciousness.

In Kundalini yoga, higher-level chakras are awakened and also the activities associated with these higher psychic centers. The basic method of awakening involves deep concentration on these chakras and forcing their arousal. Asanas, pranayama, mudra and bandha and other forms of yoga such as Mantra yoga are also used to stimulate the awakening.

1.6.8 Kriya yoga

The word kriya means 'activity' or 'movement' and refers to the activity or movement of consciousness. Kriya also refers to a type of practical or preliminary practice leading to total union, the final result of practice. Kriya yoga does not curb mental fluctuations but purposely creates activity and

awakening in consciousness. In this way all faculties are harmonized and flower into their fullest potential.

Kriya yoga originated in antiquity and evolved over time through practice and experience. The full form of Kriya yoga consists of over 70 kriyas out of which only 20 or so is commonly known.

The kriya practices are inscribed in numerous tantric texts written in Sanskrit. To date only a few of these have been translated into other languages, the most authoritative magnaopus on the subject of Kriya.

The practices of Kriya yoga were propagated by swami Satyananda Saraswati from secret teachings described in the yoga and tantra shastras.

1.6.9 Raja yoga

Raja yoga usually refers to the system of yoga that is described in the yoga sutras of sage Patanjali. In this ancient text sage Patanjali describes eight stages of yoga which are known collectively as Raja yoga.

Raja yoga is a comprehensive yoga system which deals with the refinement of human behavior and personality through the practice of the yamas (restraint) and niyamas (disciplines); attainment of physical health and vitality through asanas (postures) and pranayamas (pranic breathing techniques); management of mental and emotional conflicts and development of awareness and concentration through pratyahara (sensory withdrawal) and dharana (concentration); and developing the creative aspect of consciousness

for transcendental awareness through dhyana (meditation) and samadhi (absorption in the universal identity).

1.6.10 Swara Yoga

Swara is Sanskrit word, meaning sound or note. It is also a continuous flow of air through one nostril. Yoga means union, so Swara yoga is a science which is realization of cosmic consciousness through control and manipulation of breath.

Swara yoga is science which is a complete study, observations, control and manipulation of breath or swara. Pranayama is only related to control of breath in various ways. In swara yoga, we will find association of breath in relation to activities of sun, moon, various seasons, physical and mental conditions of individuals etc. So Swara yoga is more comprehensive in theory and practices related to breath.

1.6.12 Eight folds of yoga:

The practice of **yoga** does not only focus on physical postures to improve the body, but deals with all the aspects of our being and our lives. **Patanjali** who is considered the father of modern yoga compiled 195 aphorisms which are called the yoga sutra. In the yoga sutra⁷, he described the eight aspects of a yogic lifestyle and called it the eight limbs of yoga.

The limbs are practical guides to a person's personal development to achieve the harmony of the mind, the body and the spirit which leads to samadhi or enlightenment. Upon practicing all eight limbs of the path it becomes self-evident that no one element is elevated over another in a

hierarchical order. Each is part of a holistic focus which eventually brings completeness to the individual as they find their connectivity to the divine. Because we are all uniquely individual a person can emphasize one branch and then move on to another as they round out their understanding.

(1) Yamas

(Abstention) or injunctions for improvement of social behavior. Yama is our attitude towards others and the world around us. There are five Yamas:

(i) Ahimsa or non-violence

This Yama does not only mean not doing harm to others in thought and in deed, but also to practice acts of kindness to other creatures and to one's own self.

(ii) Satya or truthfulness

Satya is the Yama that is about living a truthful life without doing harm to others. To practice Satya, one must think before he speaks and consider the consequence of his action. If the truth could harm others, it might be better to keep silent.

(iii) Asteya or non-stealing

This Yama is not only concerned about the non-stealing of material objects but also the stealing of other's ideas and other forms of possession.

Using power for selfish motives or telling someone else about confidential information we had been entrusted with, is against Asteya.

(iv) Bramacharya or non-lust

Bramacharya means to move toward the essential truth or to achieve self-control, abstinence or moderation especially regarding to sexual activity. It is about not giving in to our ego's excessive desires or taking nothing in excess.

(v) Aparigraha or non-possessiveness

This yama is about living a life free from greed or taking only what is necessary and do not take advantage of someone or of a situation. It is about using our powers correctly and appropriately and not exploiting others.

(2) Niyamas

Observance or injunctions for purification of mind. Niyama is how we treat ourself or our attitude towards other self. The following are the five Niyamas:

(i) Sauca or cleanliness

This niyama is concerned on both the outer and inner cleanliness. The practice of pranayamas, asanas and yogic cleansing practices to detoxify and cleanse the physical body are necessary to achieve inner

cleanliness. The mind must also be kept clean or pure. Outer cleanliness, on the other hand, means to keep a clean environment or surroundings.

(ii) Santosha or contentment

Santosha is to practice humility, modesty and finding contentment with what we have and who we are.

(iii) Tapas or austerity

This Niyama refers to keeping the body in good condition. Tapas are practiced through disciplining the body, speech and mind like eating only when hungry and maintaining a good posture.

(iv) Svadhyaya or study of the sacred text and of one's self

This involved studying one's self, self-inquiry and self-examination and other things that can help we get to know our self more. As our knowledge about ourself grows deeper, so is our connection to the higher power and or union with all things.

(v) Isvarapranidhama or living with an awareness of the divine.

This niyama encourages us to let go of our false sense of control and to connect to the Divine or that which gives us the sense of wholeness and sacredness.

(3) Asanas or physical postures

The **Asanas** are designed to free our mind and body from tension and stress. It relaxes, rejuvenates, and energizes the body and aims to bring the body and the mind into a harmonious union. Asanas should be done with comfort, ease, alertness and steadiness, achieving a balance between ease and effort.

(4) Pranayama or breath control

Pranayama is the control of breath. The breath is regulated and controlled through the practice of breathing exercises. The duration of inhalation, retention, and exhalation of breath is regulated with the aim of strengthening and cleansing the nervous system and increasing a person's source of life energy. Pranayama practice also makes the mind calmer and more focused.

(5) Prathayara or withdrawal of the senses

This occurs during meditation, pranayama or asana where in we are so focused and immersed on our yoga, meditation or breathing pose that we become unaware of outside situations. Our focus becomes inward and we are no longer distracted by outside events.

(6) Dharana or Concentration

Dharana is training the mind to focus without any distraction. To achieve this, we can focus our mind into an object at a time. This can also serve as a preparation for meditation.

(7) Dhyana or meditation

Meditation is the practice by which there is constant observation of the mind. It means focusing the mind on one point, stilling the mind in order to perceive the self. It is an uninterrupted flow of concentration aimed to heighten one's awareness and oneness with the universe. It is also an important tool to achieve mental clarity and **health**.

(8) Samadhi or enlightenment

This is the ultimate goal of the eight limbs of yoga. It is characterized by the state of ecstasy and the feeling that we and the universe are one. It is a state of peace and completion, awareness and compassion with detachment.

The practice of yoga does not only deal with developing the body but also covers all the aspects of a person's life as stated in the eight limbs of yoga. It is concerned about the physical, mental and spiritual well-being of an individual as well as his environment and relationship with other creatures. Real practice of these eight principles leads to deeper self-knowledge, love and respect towards other people and creatures, cleaner environment, healthy diet, and union with the divine.

Out of these eight limbs only selected asanas and pranayams are taken for the study in convenience with motor and psycho ability.

1.7 YOGA IN ANCIENT TIMES

Yoga shares some characteristics not only with Hinduism but also with Buddhism that we can trace in its history. During the sixth century B.C., Buddha started teaching Buddhism, which stresses the importance of

meditation and the practice of physical postures. Siddharta Gautama, the first Buddhist to study yoga, achieved enlightenment at the age of 35.

Later, around 500 B.C., the **Bhagavad-Gita** or lord's song was created and this is currently the oldest known yoga scripture. It is devoted entirely to yoga and has confirmed that it has been an old practice for some time. However, it doesn't point to a specific time wherein yoga could have started. The central point to the Gita is that - to be alive, means to be active and in order to avoid difficulties in our lives and in others, our actions have to be benign and have to exceed our egos.

Just as the Upanishads further the Vedas, the Gita builds on and incorporates the doctrines found in the Upanishads. In the Gita, three facets must be brought together in our lifestyle: Bhakti or loving devotion, Jnana which is knowledge or contemplation, and Karma which is about selfless actions. The Gita then tried to unify Bhakti yoga, Jnana yoga, and Karma yoga and it is because of this that it has gained importance. The Gita was a conversation between prince Arjuna and God-man Krishna and it basically stresses the importance of opposing evil.

Yoga is an oldest health art. Yoga develops spiritual power and physical fitness and has been performed over the centuries by sages of ancient India. But exact evolution of yoga is not known. It has been written in the great book of Hinduism that long ago Lord Shiva sitting on the Himalayan mountain explained yoga to Parvati. After some time she fell asleep but Lord Shiva found, a fish was listening to him. He came to know it was Lord Vishnu inside

that fish. So Lord Shiva sends him on earth to spread the doctrine of yoga on earth for human welfare.

Lord Vishnu was born as Matsyendra Nath (in Sanskrit fish means matsya) and he taught yoga to his disciples. Garish Nath was the best disciple amongst all and got name and fame in the same field later. This way yoga came into existence and gradually it became famous. In the field of yoga, 'Sankhya yoga darshana' is one of the best texts written by kapil muni, who was considered as a great monk. (Lord Krishna⁸ "Sidhanam Kapil Muni" 26/10 Bhagwad Geeta).

Later, Maharshi Patanjali wrote the great book of yoga, "Patanjali yoga darshana. He introduced a magnificent psychological base of yoga.

The second definition from the first Chapter of the yoga darshana Patanjali describes yoga as "Chitah vritti nirodhah⁹", and it means restraint of mental modification as suppression of fluctuation of consciousness.

To obtain a healthy and spiritual life many monks, kings and others have practiced yoga as directed by Sankhya and Patanjali. Hath yoga has been a part of yoga discipline from the Ramayana, Mahabharata, Nalanda, Rajput, Muslim, British period (pre-independence) and post-independence period. Hath yoga ensures perfect health by physical and mental purification. It brings balance and harmony between body and mind.

The Bhagvad-Gita consists of eighteen Chapters. Each Chapter is called yoga. Yoga is the science of the individual consciousness attaining communion

with the ultimate consciousness. So each Chapter is seen as a highly specialized yoga revealing the path of attaining realization of the ultimate truth. The first six Chapters have been classified as the Karma yoga section as they mainly deal with the science of the individual consciousness attaining communion with the ultimate consciousness through actions. These Chapters are:

Chapter 1 : Visada yoga (lamenting the consequence of war)

Chapter 2 : Sankhya yoga (the eternal reality of the souls immortality)

Chapter 3 : Karma yoga (the eternal duties of human beings)

Chapter 4 : Jnana yoga (approaching the ultimate truth)

Chapter 5 : Karma vairagya yoga (action and renunciation)

Chapter 6 : Abhyasa yoga (the science of self realization).

The middle six Chapters have been designated as the Bhakti yoga section as they principally are pertaining with the science of the individual consciousness attaining communion with the ultimate consciousness by the path of devotion.

Chapter 7 : Paramahansa vijnana yoga (knowledge of the ultimate truth)

Chapter 8 : Aksara-parabrahman yoga (attainment of salvation)

Chapter 9 : Raja-vidya-guhya yoga (confidential knowledge of the ultimate truth)

Chapter 10 : Vibhuti-vistara-yoga (the infinite glories of the ultimate truth)

Chapter 11 : Visvarupa-darsana yoga (the vision of the universal form)

Chapter 12 : Bhakti yoga (The path of devotion).

The final six Chapters are regarded as the Jnana yoga section as they are primarily concerned with the science of the individual consciousness attaining communion with the ultimate consciousness through the intellect.

Chapter 13 : Ksetra-ksetrajna vibhaga yoga (the individual consciousness and ultimate consciousness)

Chapter 14 : Gunatraya-vibhaga yoga (the three qualities of material nature).

Chapter 15 : Purusottama yoga (realization of the ultimate truth)

Chapter 16 : Daivasura-sampad-vibhaga yoga (the divine and the demoniac natures defined)

Chapter 17 : Sraddhatraya-vibhaga yoga (the three divisions of material existence)

Chapter 18 : Moksa-opadesa yoga (final revelations of the ultimate truth) .

Bhagvad Gita could be truly said mainly as a religious treatise. Though it contains ancient Indian philosophy, policy and the code of worldly conduct, yet it is essentially a guide to the way of life. For centuries millions have found peace and tranquility in their lives by following the path shown by the Bhagvad Gita.

It sets a religious experience of the ultimate reality. The all sects and the followers of all the traditions and doctrines among the Hindus accept Bhagvad Gita as a very holy religious book. Bhagvad Gita can easily be construed to be the foundation of not only of the Hinduism, but of the root of the religion itself. The union (yoga) of the self (Atma) with the ultimate reality (Paramatma) is the final goal of the followers of the Bhagvad Gita.

It brings about reconciliation among the apparently conflicting doctrines of the way of knowledge (Gyan-yoga) of action (Karma-yoga) and of devotion (Bhakti-yoga). All these paths lead towards one goal only. The term yoga (means to unite, to yoke), is used in Gita, in the sense of union of the self with the supreme being. One must bear in mind that he/she should not run away from the battle field whenever he/she is called upon to fight for Truth.



LORD KRISHNA AND ARJUNA

Bhagvad Gita teaches the practical way to realize the supreme ideal. It does not give only a purely metaphysical world of thought to the seeker of the truth; it takes him to the real world of experience. The supreme bliss can only be experienced; it cannot be reached by idle speculation of wits and mental gymnastics. Bhagvad Gita gives us metaphysics (brahma-vidya) as well as a practical discipline (yoga shastra).

By emptying our minds of impure thoughts, desires and wants, by putting our entire energy in the single minded contemplation of the nature of the ultimate reality, by constant efforts (abhyas) and being in a state - where the self (atma) becomes one with the supreme being (paramatma). This is

called "yoga" (coming from the root "yuj"-it means yoking of or comes into union with the God (parameshwar). After one attains this state, ignorance (Agyana), illusion (avidya) and egoistic state of mind (ahankara) can no longer exist.

The self experiences the pure truth, pure mind and pure bliss (sat, chit, anand). Bhagvad Gita guide us to this yoga and bhaktiyoga. This is the essence of Bhagvad Gita. Gyanyoga is the way of knowledge, Karmayoga of right efforts, of total devotion and surrender to the will of God. Thus the Bhagvad Gita shows the way of salvation to all without any distinction or reservation. It is for the entire humanity. Distinctions of place, caste creed or sex does not come in its way.

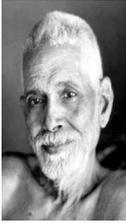
Yoga in modern world

Yoga and spirituality are inseparable. It is an ancient teaching that helps the persistent practitioner to achieve the spiritual enlightenment. By no means has it consisted of a set of exercise routine only. Yoga is comprehensive system, a way of thinking, a way of living one's everyday life. In essence, spirituality deals with one's relationship with that which is beyond individuality.

From the yogic perspective, one experiences the spirituality by cultivating his awareness and taking this awareness deep into the subtle dimensions of his being. Awareness allows one to experience the subtler aspects of life and marks a step on his inner journey toward self-realization. Once one has forged a conscious relationship with that which is beyond the

"little" him, then one can bring that connection and understanding into his everyday life. Only then can one truly permeate his life and teachings with depth and meaning.

In this modern era yoga help to achieve the highest goal of spirituality regardless of one's spiritual aim. Yoga has always been an important part of Indian civilization. Though its form have changed or seen with a different outlook in different centuries. Yoga was practiced and looked upon greatly in fifth and sixth century but during eighteenth century as Indian history was going through a turmoil in British rule where the encounter of two different culture occur whose consequences we are still facing, yoga was viewed differently but people kept experiencing it and it was passed on from generation to generation.



RAMKRISHNA
PARAMHANSA



SWAMI VIVEKANAND



RAMANA MAHARSHI

Many yogis appeared, practiced and spread yoga during these centuries. Some names are written in golden letters in history, some are going vague and some are mixed in ashes. Swami Ramkrishna Paramhansa and his chief disciple Swami Vivekananda belonged to nineteenth century, although their influences can still be felt, prompted by the urging of Ramakrishna and helped by the historical situation of India, which was responsible for his English education. Vivekananda started a trend for popularity of yoga with which inevitable ups and downs has stayed with us ever since.

One of the great yogis of twentieth century was Ramana Maharshi. His instructions, especially the two books “Self Enquiry” and “Who am I” can be classified as follower of the path of 'Janana yoga'. He said that breath control is only an aid for diving deep within oneself. One may as well dive down by controlling the mind. When the mind is controlled, the breath is controlled automatically. One need not attempt breath control, mind control is enough. Breath control is only recommended for those who cannot control their minds straight way.

In the absence of enquiry and devotion, the natural sedative pranayama (breath regulation) may be tried. This is known as yoga marga (the path of yoga). If life is imperiled the whole interest centers round one point, the saving of life. If the breath is held the mind cannot afford to (and does not) jump at its

pets - external objects. Thus there is rest for the mind so long as the breath is held. All attention being turned on breath or its regulation, other interests are lost. The source of breath is the same as that of the mind. Therefore the subsidence of either leads effortlessly to the subsidence of the other.



SRI

Another great yogi of twentieth century was Sri Aurobindo. Sri Aurobindo was the ever-creative silent bridge between God's will and his fulfilment. In Integral yoga, God-realisation means merely standing at the shore of the vast sea of consciousness. The fire-pure change of the inner and outer life means swimming in that sea. Manifestation of the divine on earth means returning home after having crossed the sea. It is not a dream of God but his decree that heaven and earth must fall supremely in love with each other. He wants their marriage to take place sooner than immediately. Earth feels that she is inferior to heaven. Heaven feels that he is superior to earth. And because of their mutual hesitation, the day of their marriage is kept in abeyance.

Integral yoga has made a significant choice. It wants not only to see and feel the conscious evolution of life, but also to embody a fully harmonised life of matter and spirit. An Integral yogi is he who sacrifices his life to become a bridge between earth and heaven. He has foregone heaven; he uplifts earth. The aspirant in man is the cross-bearer. The yogi in man is the crown-bearer. To say that yoga is the realisation of God is not to say all. Yoga is the living union.

Even some scientists were attracted to the physiology of human body and psychology of the human personality while practising yoga. Certain investigators Mookerji, Chahal and Giri (1977)¹⁰; Wenger, Bagachi (1961)¹¹; Robson (1972)¹² and Gharote (1981)¹³ saw that yoga has a significant effect on the nervous system.

1.7 Benefits of yoga

Yoga, the sanskrit word for 'union', is a practice that uses posture and breathing techniques to induce relaxation and improve strength, and its health benefits may surpass those of any other activity. Whether one practice yoga to relax, stretch, breathe, meditate, or simply because it's in fashion, he may not realize the numerous health benefits of yoga. And while there are many different kinds of yoga, ranging from the gentler Hatha yoga to the more strenuous, like Bikram yoga (which is performed in a 105°F room) or power yoga, every form of yoga improves health from head to toe. Here are some of yoga's many health benefits.

1.7.1 BENEFITS OF YOGA TO OUR BONES, MUSCLES, AND JOINTS

(i) The physical benefits of yoga are myriad. Yoga keeps our body strong, as it involves all the muscles in our body to hold and balance yoga asanas (poses). The various yoga postures strengthen our feet, legs, hands, abdominals, lower back, legs, and shoulders.

(ii) Yoga's stretching and breathing exercises improve our flexibility, helping joints, tendons, and muscles stay limber. People suffering from osteoarthritis or rheumatoid arthritis will see a noticeable improvement in their stiffness, pain, and other arthritic symptoms by practicing yoga poses and postures.

(iii) Yoga improves our endurance, especially the more athletic forms of yoga such as ashtanga yoga, power yoga, vinyasa yoga, and Bikram yoga. These rigorous yoga practices follow a specific sequence of poses (asanas) that become more challenging as one progresses. Unlike the gentler Hatha yoga, the forms of Ashtanga yoga, Power yoga, Vinyasa yoga, and Bikram yoga require one to keep his body in constant motion between poses, resulting in a strenuous cardiovascular workout and improved core strength.

(iv) Hatha yoga can relieve chronic back and neck pain, since the poses and postures gently stretch and strengthen our back and neck muscles.

(v) Yoga is often prescribed to help heal various injuries, including repetitive strain injuries, knee and back injuries, pulled hamstrings, even minor skin burns.

(vi) Yoga is an excellent weight-bearing exercise that can improve our bone density. This is particularly beneficial for women approaching menopause, since yoga can help ward off osteoporosis, or thinning of the bone.

1.7.2 BENEFITS OF YOGA TO THE CARDIOVASCULAR SYSTEM

Yoga has tremendous health benefits for our heart. Most notably:

(i) The gentler forms of yoga lower our blood pressure because the asanas (yoga poses, postures, and yoga positions) keep blood flowing evenly throughout our body while we focus on our breathing.

(ii) People suffering from hypertension can benefit from yoga tremendously, as Hatha yoga can lower our heart rate and blood pressure.

(iii) Many practitioners claim that yoga has also lowered their cholesterol.

(iv) Power yoga is an excellent form of cardio conditioning, which strengthens core muscles while it keeps blood and oxygen circulating throughout your body.

1.7.3 BENEFITS OF YOGA ON MENTAL HEALTH

(i) Yoga benefits anyone's mental health by helping him or her relax, and it is an effective form of psychological therapy. Yoga reduces anxiety and stress, resulting in better health, better mood, and better concentration throughout the day. Yoga has been used to help treat a wide variety of emotional and mental disorders, including acute anxiety, depression, and mood swings.

(ii) Even children can benefit from yoga. Those with attention deficit disorder and hyperactivity can learn to relax and get control by using yoga breathing and yoga asanas.

(iii) Because yoga is a form of meditation, it results in a sense of inner peace and purpose, which has far-reaching health benefits.

(iv) Yoga has been used to help heal victims of torture or other trauma.

1.7.4 BENEFITS OF YOGA ON OTHER HEALTH CONDITIONS

(i) Yoga can rid one of tension headaches and migraines because yoga circulates blood and oxygen to our head, which can often, prevent headaches from starting.

(ii) A regular yoga practice helps boost antioxidants throughout your body, resulting in a stronger immune system and improved ability to heal quickly from disease or injury.

(iii) Yoga can help lose weight and maintain a healthy weight throughout the life. Power yoga is a vigorous form of yoga that burns calories, resulting in weight loss.

(iv) Many women going through menopause report an easing of symptoms when they begin practicing yoga.

1.7.5 BENEFITS OF YOGA IN EVERYDAY LIFE

(i) Yoga can help cure insomnia, as regular yoga practice leads to better and deeper sleep.

(ii) Yoga can help fight fatigue and maintain your energy throughout the day.

(iii) Yoga is an effective treatment for a variety of autoimmune diseases because it can reduce the symptoms these diseases often cause, such as stiffness, malaise, fatigue, and weakness.

1.7.6 Importance of yoga in sports

(i) Yoga for cure of sports injuries

Herbert De. Vries (1961)¹⁴ has reported the utility of stretching procedure of hath Yoga in relieving certain conditions of muscles due to injuries in sports.

(ii) Yoga for the prevention of sports injury

Yoga is the perfect activity for athletes interested in cross training, injury prevention, increasing core strength, and increasing balance. It is not over-stating things to say that yoga can truly be the fountain of youth for athletes and fitness enthusiasts.

Most sports or fitness injuries occur through over-training and repetitive injuries. Performing the same motions over and over again with the same muscles, tendons, and ligaments create muscle imbalance, tight muscles, and inflammation. Yoga can change all that by creating the proper muscle balance through its stretching movements and balancing postures.

(iii) Increased functional range of movement and flexibility

Yoga is not just stretching. It is stretching in functional movements that create increased range of motion, increased flexibility, and increased strength in motion muscles and joints. Yoga reverses all of those repetitive movements that tighten our muscles.

Most athletes give up yoga because they are very bad at it. They are bad because they have become so tight over the years from doing the same

movements over and over. For example long-distance runners typically have very tight hamstrings and lower back muscles. Yoga can bend the body in the opposite directions to balance out those tight areas.

(iv) Develop the proper breathing technique

Athletes know that proper breathing is vital for stamina and peak performance. Too much nervousness or anxiety will disrupt breathing and proper performance. Yoga teaches us how to breathe deeply in a relaxed manner, the perfect type of breathing for sports performance. In addition, proper breathing can increase stamina through efficient oxygen use. The best way to focus on a task and be in the moment is to focus on the breath. Yoga focuses on breathing and all athletes can reach their peak performance faster through a proper breathing technique.

(v) Increased core strength

Instead of bulking up to look good, most high-level athletes know that core strength is the most efficient kind of strength. Your core is what helps one to create power in his movements and sporting motions. Every yoga poses uses core strength because our core is how our body maintains its balance. If the body is off balance in a pose, a strong core mid-section can contract to stabilize the body. Also, many yoga movements require isometric mid-section contractions which are a much more natural way to increase core strength as compared to a workout machine.

Padahastana, Paschimottasana, Ugrasana and Halasana should be performed by athletes to avoid any injury during running events.

1.7.7 Yoga for promotion of sports

Yoga has also a role to play in the promotion of sports. It depends on:

i) Promotion of specific sports skills.

There are several books like 'Yoga for tennis' and 'Yoga and football' where yoga's help in the field of sports is described.

ii) Promotion of basic motor fitness factors.

De. Vries (1961)¹⁵, Gharote (1974)¹⁶ (1976)¹⁷, Dhanraj (1974)¹⁸, Giri (1966)¹⁹ R. Moses (1972)²⁰, Gharote and Ganguly (1976)²¹ had done research work which could be quoted. Terrien (1969)²² have given enough evidence for promoting fitness factors through yoga. Gharote has also mentioned a short term yogic training to improve basic fitness factors.

iii) Promotion of psychological factors

Emotional factors are very important in the performance of sports. If rightly used emotions can contribute to the improvement of the performance in sports. Emotions are governed by the working of the autonomic nervous system. Control over the autonomic nervous system brings the emotional disturbances down. Yogic exercises as a group play a significant role in the training of the autonomic nervous system. Stretching exercises like asanas,

relaxation techniques, and breathing exercises in the form of pranayama are excellent in conditioning the system.

1.7.8 Maintenance of physical fitness

The enormous physical benefits are just a “side effect” of this powerful practice. What yoga does is harmonize the mind with the body and this result in real quantum benefits. It is now an open secret that the will of the mind has enabled people to achieve extraordinary physical feats, which proves beyond doubt the mind and body connection.

Yoga through meditation works remarkably to achieve this harmony and helps the mind work in Synchronise with the body. How often do we find that we are unable to perform our activities properly and in a satisfying manner because of the confusions and conflicts in our mind weigh down heavily upon us. Moreover, stress which in reality is the killer affecting all parts of our physical, endocrinal and emotional systems can be corrected through the wonderful yoga practice of meditation.

In fact yoga = meditation, because both work together in achieving the common goal of unity of mind, body and spirit – a state of eternal bliss.

The meditative practices through yoga help in achieving an emotional balance through detachment. What it means is that meditation creates conditions, where you are not affected by the happenings around you. This in turn creates a remarkable calmness and a positive outlook, which also has tremendous benefits on the physical health of the body.

These are just some of the tangible benefits that can be achieved through yoga. Having seen this, it is educative to note why the ancient yogis performed yoga and the interdependence of yoga and meditation. The ultimate goal of the yogis was “self realization” or “enlightenment”.

But what is interesting is that for this they had to meditate for extensive spells of time – days, weeks and much more. This required tremendous physical fitness, energy and the capacity to subsist on next to nothing. Yoga positions or asanas provided them the fullest fitness with the least metabolism or stress and meditation in turn provided them the strength and will to perform these asanas effectively – a virtuous cycle of cause and effect. This mutually symbiotic relationship helped them in their path.

Yoga is a metaphysical doctrine or a philosophy. It provides amazing improvement towards health, personal appearance and youthfulness, which appears to be miraculous. In the modern era health and psychological problems are treated by yoga. It can be said that physical, mental and psychological problems could be treated through yoga.

The present study is about the physical and psychological aspect of deaf and dumb persons through yoga. A lot of work is done on the effect of exercises on various components of motor abilities of a person. Regarding the physical, psychological and physiological variables (vital capacity, pulse rate, flexibility, B.P., cardio vascular endurance, maximum breath holding, maximum expiratory pressure, mental health, self confidence, flexibility, agility, speed,

endurance and strength) of deaf and dumb persons a very few studies have been conducted.

1.8 STATEMENT OF PROBLEM

The present research is conducted with the students of the centres for deaf and dumb, situated in Kolkata. It is been observed that growth and development so such students depends upon their health.

1.9 LIMITATIONS

- (i)** All the subjects (the students of Kolkata School of Hearing and speech impaired) belonged to economically different status of families having different food habits; hence their diet could not be controlled.
- (ii)** The personal habit of the subject and their state of mind as well as emotional stress and strains, owing to their studies and exams in school could not be controlled.
- (iii)** Extra practice, if any, the subjects with the desire to perform better than other subjects, could not be controlled.
- (iv)** No special motivational techniques were used to encourage subjects to do their best and there was no way to determine whether the subjects have the same degree of motivation during pre and post tests.
- (v)** However, the nullifying affect of the above factors was accepted for the purpose of the study.

1.10 OBJECTS OF THE STUDY

The study was conducted with the following objective in mind:

- (i) To find out the effect of selected yogic practices on physical and psychological variables of different age group 14 to 20 years.
- (ii) To find out the effects of selected yogic practices on physical and psychological variables of hearing and speech impaired children.

1.11 HYPOTHESIS

In the light of earlier research in the theoretical formulation pertaining to yoga, to ascertain the physical and psychological fitness, the following hypotheses were formulated:-

- (i) Controlled and experimental groups are likely to differ on psychological fitness variables of hearing and speech impaired children viz. self-confidence and mental health.
- (ii) Controlled and experimental groups are likely to differ on physical fitness variables of hearing and speech impaired children viz. strength, agility, speed, endurance and flexibility.

1.12 SIGNIFICANCE OF THE STUDY

The study will be useful for the following:

- (i) To evolve yogic physical and psychological fitness exercise for the school and college students specially hearing and speech impaired children.

- (ii) To device instructional programme and training programmes.
- (iii) To cultivate regular habits and improve interest among the students towards yogic practices.
- (iv) To perform the yogic practices more scientifically.
- (v) To know the effect of Asana this may be beneficial on school level students for their motor fitness.
- (vi) The study helps to understand the meaning and depth of yoga as a science, which is under further scientific researches in other parts of the world.
- (vii) Yoga coaches can take help of the study to train their students.
- (viii) The study gives a scientific base to the ancient Indian discipline of yoga, which our ancestors practiced for healthy living.

1.13 MEANING AND ELUCIDATION OF THE VOCABULARY:

The key words in the statement have been explained below, in order to draw out a meaning, which has been considered for present investigation.

(a) Yogic practices

“Yogic practices are poses which are bodily practiced to bring about particular psychological results.”²³

This is the tradition system of doing exercises and this form of Hath Yoga comprising asana pranayams and shatkarma. Asana are poses assumed

by the body, slow stretching movement, the final pose being held for sometimes steady and relaxed.

The work of Iyengar and Kuvalyananda was selected for the practice of selected yoga, asana and pranayams by the subjects.

(b) Physical and Psychological Variables

Strength, endurance, speed, agility, flexibility, mental health and self-confidence are defined below in short.

(c) Speed

“It is the performance pre requisite to do motor action under given conditions, movement tasks, external factors, individual prerequisites in minimum time.”²⁴

(d) Strength

“Strength is the ability to overcome resistance to act against resistance; strength should not be considered a product of only muscular contraction. It is in fact a product of voluntary muscles contractions caused by the neuro-muscular system.”²⁵

(e) Endurance

Hardyal Singh explained in his book (Science of sports training)

“Harre 1986 defined endurance as the ability to resist fatigue”.

“Endurance is the ability to do sports movement with the desired quality and speed, under condition of fatigue”.²⁶

Endurance is one of the most important components of physical fitness. It is required in almost all the activities of game and sports. It is the most important factor of motor ability.

(f) Agility

“In the past, five motor abilities were recognized as components of physical fitness these were strength, endurance, speed, flexibility and agility, but since two and half decade the term agility has been replaced by co-ordinative abilities.”²⁷

(g) Flexibility

A health and performance related component of physical fitness that is the range of motion possible at a joint. Flexibility is specific to each joint and depends on a number of specific variables, including but not limited to the tightness of specific ligaments and tendons. Flexibility exercises enhance the ability of a joint to move through its full range of motion. Flexibility is defined as a range of movement about a joint. A flexible person can perform his skills with more ability. With flexibility injuries while sports could be avoided.

(h) Active flexibility

This refers to the ability to stretch an antagonist muscle using only the tension in the agonist muscle. An example is holding one leg out in front of you as high as possible. The hamstring (antagonist) is being stretched while the quadriceps and hip flexors (agonists) are holding the leg up.

(i) Passive flexibility

The ability to hold a stretch using body weight or some other external force. For example, holding one leg out in front and resting it on a chair. The quadriceps are not required to hold the extended position.²⁸

(j) Mental Health

“There is no clear-cut distinction between mental health and mental illness. Those of us who are normal have periods of depression; we lose our tempers and walk blindly in problems leaving no avenue to escape. In the same way, people who have been professionally classified, as mentally ill are that time free of abnormal symptoms”.

Wallace Wallin has defined mental hygiene as “.....the application of a body hygienic information and technique, culled from the science of psychology, child study, education, sociology, psychiatry, medicine and biology for the purpose of (1) the preservation and improvement of the mental health of the individual and of the community, and (2) for the prevention and cure of minor and major mental diseases and defects and of mental, educational and social maladjustment.”²⁹

“Our psychology is normally characterized by continual disturbances of varying degree of severity. Some of the common disturbances are fear, anxiety, suspicion, depression, insecurity, restlessness, anger and jealousy etc. Up to certain extent; such disturbances are considered “Normal”. But the disturbances experienced by an individual exceed what is regarded as normal, the person is said to be suffering from lack of “Mental health”. When disturbances significantly and in extreme proportion disable an individual, the person is deemed to be suffering from mental illness. Thus mental health is generally understood as absence of marked psychological disturbances.”³⁰

The World Health Organization defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".³¹ It was previously stated that there was no one "official" definition of mental health. Cultural differences, subjective assessments, and competing professional theories all affect how "mental health" is defined.³² There are different types of mental health problems, some of which are common, such as depression and anxiety disorders, and some not so common, such as schizophrenia and Bipolar disorder.³³

Most recently, the field of Global mental health has emerged, which has been defined as “the area of study, research and practice that places a priority on improving mental health and achieving equity in mental health for all people worldwide”.³⁴

Six popular indices of mental health were selected for inclusion in the present study:

(i) Over-all Adjustment

It refers to individual achieving an overall harmonious balance between the demands of various aspects of environment, such as home, health, social, emotional and school on the one hand and cognition on the other.

(ii) Emotional Stability

It refers to experiencing subjective stable feeling, which has positive or negative values for the individual.

(iii) Security-Insecurity

It refers to a high (or low) sense of safety, confidence, and freedom from fear, apprehension or anxiety particularly with respect to fulfilling the person's present or future needs.

(iv) Autonomy

It refers to a stage of independence and self-determination in thinking.

(v) Intelligence

It refers to general mental ability, which helps the person in thinking rationally, in behaving purposefully in environment.

(vi) Self-Concept

It refers to the sum total of a person's attitudes and knowledge towards himself and evaluation of his achievements.

(vii) Self-Confidence

Self-confidence is the confidence one has in oneself, one's knowledge, and one's abilities. It is the confidence of the type: "I can do this". "I have the ability to do this". Self-confidence is the one thing that is much more important than many other abilities and traits. If one does not have self-confidence, whatever one do will never become fruitful at all. The fruits of what one does without self-confidence are lost. Genuine self-confidence is the forerunner of achievements. Self-confidence integrates the powers of mind and body and focuses them towards the goal. Only such a concentrated energy can reach the goal.

“Self-assurance buoys you up and fills your sail with lusty wind. It also make easy, holding to a course on a choppy sea. Without it, anyone is weak veered by every wind. Some lacks confidence to the extent of being always hesitant. Such person develops tenseness that interferes with his thoughts if he gets a new idea. He dismisses it as worthless simply because it is his own, or fails to come forth with it for the lack of courage. Later he may found his own thought that he himself rejected is stated by someone else. Great work frequently includes what was often thought but never before communicated.

Some proud men have had notable political, military or religious careers. Their flattering opinions of themselves kept them performing at their maximum ability, and inspired confidence in them”³⁵

(viii) Asanas

Asana is a body position, typically associated with the practice of Yoga, originally identified as a mastery of sitting still, with the spine as a conduit of biodynamic union. In the context of Yoga practice, asana refers to two things:

the place where a practitioner (yogin (general usage); yogi (male); yogini (female)) sits and the manner (posture) in which he/she sits. In the Yoga sutras, Patanjali suggests that asana is "to be seated in a position that is firm, but relaxed" for extended, or timeless periods.

As a repertoire of postures were promoted to exercise the body-mind over the centuries, to the present day when yoga is sought as a primarily physical exercise form, modern usage has come to include variations from lying on the back and standing on the head, to a variety of other positions.

However, in the yoga sutras, Patanjali mentions the execution of sitting with a steadfast mind for extended periods as the third of the eight limbs of Classical or Raja yoga, but does not reference standing postures or kriyas. Yoga practitioners (even those who are adepts at various complex postures) who seek the "simple" practice of chair-less sitting generally find it impossible or surprisingly gruelling to sit still for the traditional minimum of one-hour (as still practiced in eastern vipassana), some of them then dedicating their practice to sitting asana and the sensations and mind-states that arise and evaporate in extended sits.

Asana later became a term for various postures useful for restoring and maintain a practitioner's well-being and improve the body's flexibility and vitality, with the goal to cultivate the ability to remain in seated meditation for extended periods. Asanas are widely known as **Yoga postures** or **Yoga positions**, but specifically translates to "pose you can hold with ease". By this

definition, practices where the participant is not at ease do not qualify as asana.

1) Pranayama

“Pranayama is the control of all life-forces by realizing naught but Brahman in all things as the mind, etc. The negation of the Universe is the outgoing breath. The thought: ‘I am Brahman’ itself is called the incoming breath. The permanence of that thought thereafter is the restrained breath. This is the Pranayama of the wise, while the pressing of the nose is only for the unknowing.”³⁶

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Chapter-2

REVIEW OF THE LITERATURE

An important crucial aspect of a research project is the survey of related literature, which means to locate, to read and evaluate the past, as well as current literature of research concerned with the planned investigation.

“The orientation provided by survey of related literature is helpful in making a straight forward statement of need for investigation and of avoiding two extremes of apologetic attitudes and exaggerated claims - C. V. Goods¹

Herbert De. Veries (1961)² evaluated the static stretching of Hath yoga technically called asana for improvement of flexibility comparing the effect of static stretching with that of conventional ballistic method of stretching for seven periods of 30 minutes each. He found both the methods improved flexibility. Ryan (1964) and Dhanraj (1974) also confirmed the results about the improvement in flexibility and relieving tension.

Comparative information about what has been done in the particular area from which one intends to take up a problem is very important. Review of related literature serves to avoid unimportant worn put problems and helps to make progress towards solution of a new one.

According to Goods, Barr and Scates³ survey of literature serve the following purpose:

1. To show whether the evidence already available solve the problem adequately without any further investigation and thus to avoid the risk of duplication;
2. To provide ideal theories, explanation or hypothesis valuable in formulating the problems;
3. To suggest methods of research appropriate to the problems;
4. To locate comparative data useful in interpretation of results;
5. To contribute to the general scholarship of the investigation.

“The review of literature is a time consuming but fruitful phase of investigation which provides familiarity with the literature on any problem help to the students to discover what is already known, what others have attempted to find out, what methods of attack have been promising or disappointing or solved.”⁴ In other words, the related literature is worthwhile for an effective piece of research.

Yoga is a vital element of life; besides it can ensure good health, disease control and psychophysical balance in present society. A scientific approach to psychophysical fitness and its building up a healthy society and healthy nation is remedy towards all psychophysical danger of deaf and dumb persons.

Patanjali believed that a person prone to abnormality as long as his behavior is subjected to environmental forces. Whereas, if this personality is guided by motivational forces (which control human activity from within) optimum benefits will be gained and the environmental force will not be

disturbed the functioning of the individual and his personality. Yoga and psychoanalysis were found in supplement and not supplant one other. However, while psychoanalysis is a therapeutic weapon, yoga is a discipline for promoting positive mental health.

“Medicine is a science of disease, yoga is a science of health, and even then why is it that modern medicine try to examine yoga?” Dr. Salk, Noble Prize winner.

For the physical and psychological fitness of deaf and dumb persons yoga plays an important role. Previously the view of yoga was that it develops mind and spirituality only but now the physical development aspect has also been realized.

“Most important of all yogic physical practices foster a unique kind of awareness, a unique intimacy of mind and breath, a subtle harmony within the physical body. One is literally “forced to introspect” as one holds the body still in what is sometimes a carry uncomfortable position in the beginning. Unlike in a sport that is basically isotonic, there is no release from strain and tension in movement.

The strain and the tension must be faced, encountered in stillness. This is an important difference in the two activities. Yoga fosters rarified awareness and control of outer environmental factors. The “internal struggle and confrontation” of yoga when handled successfully deepens the consciousness, (swadhya or self knowledge) not only of one’s own body, but also awareness of the working the nature of one’s own mind and emotion.⁵

Sahu and Bhole (1983)⁶ studied the effect of yogic training programme on psychomotor performance. The study was conducted on 10 male subjects in the age group of 24-25 years (Teacher training certificate course (1979), apart from routine course of 3 weeks of yogic exercises, the high pitched recitation was also given to them in the evening for this study. As a part of testing programme, Bhatia intelligence test battery was given to the students at periodic intervals. Psychomotor performance of the subjects was studied by way of their ability to make the dots on the chart paper of the McDonald-Schuster Apparatus after 3 days of training. The subjects were asked to make as many dots as possible with speed and accuracy; the following conditions were used for studying the performance:

- (i) Rest for 3 minutes in a chair in relaxed way.
- (ii) After 3 minutes recitation of "OM".
- (iii) After solving a psychological puzzle involving hand activity for three minutes.

It was observed that the dotting performance increased from week to week for all the three conditions.

Mookerjee et al. (1977)⁷ conducted a research study "Impact of yogic exercises on Indian Hockey team – winner of third World cup, 1975." It was observed that the performance of the players was steady and the tension and stress was reduced. Yogic exercises contributed towards the decrease of pulse rate resting metabolism and certain lungs parameters.

Lohan, Usha (1990)⁸ studied the effects of selected yogic practices on physical and physiological variables of children and reported that yogic practices effected physical and physiological variables significantly.



DR. M. L. GHAROTE

Gharote (1973)⁹ conducted a study on 27 males and 12 females. Male age varied from 25-48 and that of female 29-17 years. The short battery containing 8 tests for male subjects and 4 tests for female subjects was administered before and after three weeks training in yogic exercises.

The results indicated that it definitely improved the general fitness of male individuals with special emphasis on the fitness factors of flexibility trunk strength and equilibrium. The study suggests the utility of yogic exercises for the improvement of physical fitness.

Larsen and Yocom (1951) surveyed physiological research and tested 10 components of physical fitness like (i) Resistance to disease (ii) Muscular strength (iii) Cardio-vascular respiratory endurance (iv) Muscular power (v) Flexibility (vi) Speed (vii) Agility (viii) Co-ordination (ix) Balance (x) Accuracy.

Brown et al. (1975)¹⁰ studied effects of stressors on a specific motor task on individual displaying selected personality. Result showed that both self-confidence and emotional stability were related to ability to withstand stress. Stressor less affected subjects was high in self-confidence or emotional stability than were the subjects low in self-confidence or emotional stability.

Mall, Chaudhery and Giri (1978)¹¹ conducted a study to evaluate the effects of yogic "Relaxo concentration training" on two psycho motor tasks after

sub maximal exercises. The results of the study revealed that yogic relaxation concentration training could be used as an effective method to hasten the psychic and physical restoration progresses after sub maximal exercises.

Romanowski (1971)¹² have done considerable scientific research on psychophysical aspect of yoga. From the studies it has been observed that yoga exercise helped mental calmness and normal emotional reactivity and influenced the para-sympathetic system. Certain exercises in yoga facilitate psychic concentration and relaxation through course control of the vegetative system.

Shekhar (1981)¹³ made a study to compare the selected physical fitness components i.e. speed, flexibility, leg, explosive strength, gross body co-ordination, respiratory endurance of football and basket ball players on the basis of analysis of data it has been found that the basket ball players were comparatively superior to football players in extend flexibility and dynamic flexibility. The football players were found to be higher in leg explosive strength, abdominal strength and gross body co-ordination.

Gharote (1970)¹⁴ conducted a study on effect yogic exercise on abdominal muscular strength and endurance of female. The subjects were 12 female, whose strength and endurance of abdominal muscles was measured before the training programme was started. A yogic training of 3 weeks was given to them and after completion of the training their strength and endurance of abdominal muscles was measured again which had shown a significant improvement.

Studies conducted by Bhole (1971)¹⁵ Ganguly(1974) and Gharote(1976) has shown the same result that yogasanas improves the various components of physical fitness like strength, flexibility, speed, balance, cardio-vascular fitness and endurance. But, still the question arises that whether the muscular strength is improved by asana alone.

Yoga and isometrics had shown a positive effect on physical fitness and body composition in a different way and probably if both could be combined a better change in physical fitness and body composition could be gained.

Ibrahim and Morrison (1976)¹⁶ studied the effects of physiological exercise in certain psychological parameters. Athletes (N-10), representing men and women from the high school and college, were compared to 100 non-athletes in their self-concept and self-actualizing traits. In general, athletes were found to be average in their self actualizing traits and less than average in their self concept while the high school athletes differ to some extent, from the non-athletes. In both cases self concept, self actualizing, female college athletes and male college athletes did not differ significantly from their counterparts.

Deshmukh (1971,1972)¹⁷ reported 82.5 percent and 77.58 percent improvement in his study on 106 and 116 patients respectively, after undergoing yogic practices. These studies showed enough justification to carry on more elaborate and planned investigation on the value of yoga in the management of psychological, psychotic and physiological disorder.

From the studies of Ryan (1971)¹⁸ it is revealed that yoga exercises are helpful for flexibility and relieving tension.

The results obtained in a study conducted by Kocher and Pratap (1972)¹⁹ it has been observed that by yogic practice psycho-physiological disequilibrium reduces and it stabilizes mechanism in the face of external and internal stimuli.

Gharote (1979)²⁰ discusses about the common objectives of yoga and physical education. Health, physical fitness and emotional stability are the most common objectives that bring both of them to a common platform for the welfare of human being. The utility of any one of them depends in term of the effects that are obtained in promoting a particular objective either physical or mental factors of fitness.

Gharote (1978)²¹ defined yoga as practices consisting of asanas, pranayams, bandhas, mudras and kriyas. Asanas are special pattern of postures, involving static stretching, leading to stability of body and mind. Pranayams control an autonomic process of respiration. Bandhas and Mudras control the semi-voluntary muscle of the body. Kriyas are cleansing process controlling and reflex mechanisms.

In a study conducted by Tomer (1966)²² it has been observed that regular practice of yogasanas improved the physical fitness.

Gharote (1976)²³ practiced selected exercises which helped to increase physical fitness index derived from the Fleishman battery of basic fitness

tests. No improvement was seen in Extent flexibility, Dynamic flexibility, Softball throw, Cable jump, Pull ups and 60 yards run after the yogic practices at the end of three weeks.

It was significantly noted that the group having more fat on an average loose fat while the group having less fat, on an average gained fat as a result of yogic training. Weight change during post training period revealed that the subjects in the age group of 25-30 years, who gained in skin-fold lost weight significantly. The age group of 17-24 years (who gained weight in skin-folds) did not show any weight reduction within significant gain in skin-fold.

Prezyna (1967)²⁴ studied religious attitude and personality traits analyzed on the basis of the data supplied by the Cattelles 16 factor questionnaire. Results revealed the high positive religious intensity group to possess on the average more emotional maturity, more super ego control, and greater self-control higher sensitivity contest with environment. The opposite features characterized the lower intensity group.

A study was conducted by Ghildayal (1980)²⁵ to compare the effect of asana and general gymnastic exercise on reaction time, agility and flexibility. The subjects were 40 girl students of class X of a school in Gwalior. The students were tested on reaction time, agility and flexibility before the training. The students were divided in two groups. First group was given training on asanas and second group on general gymnastic exercises. The results were astonishingly same for reaction time and flexibility in both the

groups that it has shown improvement but in case of agility, second group with general gymnastic exercises showed a better result.

Chaudhery (1976)²⁶ conducted a study on the effect of selected yoga asana on length and strides in sprinting. The objective of the study was to assess the effects of selected asana on strides (length in sprinting). The subjects were 23 male students of the L.N.C.P.E Gwalior. The result of the study indicates that the length of stride in sprinting might improve significantly by the selected asana.

Gharote (1976)²⁷ conducted a study on 40 residential students of a high school. They were randomly selected and divided into experiment and control groups and were matched on the basis of the physical fitness index derived from Fleishman battery of basic fitness test. The experimental group was given training programme in selected yogic exercises for a period of 3 weeks. The training session was of 30 minutes duration.

After the experimental period both the groups were compared statistically. The results revealed that the experimental group showed significant achievement in physical fitness among the individual tests item. Significant achievements in scores were observed in leg lifts shuttle run and balance.

Rao and Changappu (1984)²⁸ studied about the joint Soviet Indian space mission Soyuz T-11 in which Air Force pilot turned astronaut Rakesh Sharma studied the possibility and effectiveness of yogic exercises for keeping fit in space. When the Indian cosmonaut performed these exercises other

crewmembers studied the activity of his body muscles and analyzed the biomechanical regimes of the work of various group.

Terrien (1969)²⁹ and Dhanraj (1974) also confirmed the results about the improvement in flexibility through yogic exercises.

Udupa (1978)³⁰ compiled a scientific treatise on "Disorder of stress and for their management by yoga in 1978". The following psychological and physiological conclusions were drawn from various studies:

1. Yogic asana and pranayams improved memory and intelligence quotient. The practice brought about homeostasis in psycho physiological functions.
2. Pulse rate and blood pressure was decreased. There was reduction in the circulation, acetylcholine, serum, cholesterol and blood sugar levels. There was an increase of serum proteins and an improved thyroid functions.
3. Savasana and meditative poses improved relaxation, reduced blood pressure and enhanced the microcirculation to the vital organs of the body. Plasma catecholamine was reduced indicating reduction of the activity of the sympathetic nervous system.

Thus, it is observed that yogic exercises are helpful in improving physical fitness. But these studies investigate the effect of yogic asana on only a few physical fitness components. Therefore, further studies are required to investigate the effect of yogic asana on physical fitness index in order to arrive at generalization.

Dintiman (1984)³¹ conducted the study to determine the methods of flexibility training programme a weight-training programme and the combinations of both would be affected running speed when used as supplementary training programme to the conventional methods of training sprinters.

One hundred and forty five subjects randomly assigned to one of five training group and were tested for flexibility training strength and running speed before and after 8 weeks training period. Results showed that both weight and flexibility (as supplements to sprint training) increases running speed significantly more than the supplemented sprint training programme.

Salagar, Bison and Jintukar (1975)³² observed increased oxygen requirements by simply sitting in padmasana posture required to be maintained along the performance of pranayama. The results showed that, at a low level of exercises (mild exercises); the persons practicing padmasana were more efficient than those who followed conventional resistance exercises. There was a definite increase in oxygen consumption during padmasana in some cases up to 100 ml. /min. It was further observed that in conventional exercises, muscle work against resistance, which result in hypertrophy of muscle fiber.

Yogendra (1971)³³ conducted a study that for the children below 5 years, free natural movement and play is considered sufficient for the harmonious growth of various organs and parts of the body but for the age group of 5-10 years exercises through the practice of yoga prayers and meditative poses is required for the growth and education of the body and mind.

Gharote (1971)³⁴ conducted a study to see the effect of certain yogic exercises on students age group of 15 years for two months. The asanas selected for the training were Bhujangasana, Ardh Salbhasana, Dhanurasana, Viparitakarani, Sarvangasana, Matsyasana, Halasana, Chakrasana (side-bending) Utkatasana, Paschimotasana, Vajrasana, Supt Vajrasana, Uddiyana, Ujjayi Savasana.

The effects of two month yogic training was retained at least for another period of two months, even when the practices were discontinued. This leads to the assumption that a continued practice of yogic exercises may contribute in the established patron of emotional stability. Short term yogic training helps automatic balance score to shift towards increased parasympathetic functioned.

Hittlemen (1962-63)³⁵ described the results of yoga practice as a full course as follow:

- (1)** Strength and recondition of the entire body.
- (2)** Regain youthful flexibility in spine and limbs.
- (3)** Help control and redistribute the weight in accordance with the physical structure.
- (4)** Remove tension from its many hiding places in the body.
- (5)** Remain relaxed under pressure.
- (6)** Store and release energy and vital forces to be used as needed.
- (7)** Heighten resistance to many common disorders.
- (8)** Awaken the vital force to help gain control of the emotions and mind.

(9) Restore grace, balance, poise and self-confidence.

(10) Improve in every one of the activities.

Roy (1965)³⁶ conducted a study on the effects of asanas compared to Ballistic exercise on running broad jumps. It was found that the performance in running broad jump could be improved significantly by both asanas and ballistic.

In a study conducted by Moorthy (1982)³⁷ it was observed that the yogic exercises help to retain their effects longer than the non-yogic exercises.

In a study conducted by Moorthy (1980)³⁸ it has been observed that yogic exercises improves minimum muscular fitness much greater than physical exercises.

Reddy and Kumar (2002)³⁹ conducted a comparative study of yogasana and aerobic dance and their effect on selected motor fitness components in girl students and concluded the practice of yogasana for a period of 12 weeks improves significantly the speed, agility, flexibility and circular respiratory endurance. But, it was also observed that there was no significant difference between yogasana and aerobic dance group.

Kuvalayananda and Venekar (1963)⁴⁰ have observed that yogic practices, particularly asanas are suppose to reduce psycho-physiological disequilibrium and also contribute to steadiness, psycho motor coordination and emotional stability.

Mohinder (2000)⁴¹ conducted a study that the practice of yogasanas increases emotional stability.

Kocher (1976)⁴² observed in a study that 40 subjects of 16-60 years of age administered the anxiety scale questioner and hostility direction and hostility questioner for the whole group initially and after yoga training. Results of this study showed the scores on general hostility were decreased and this reduction in scores indicated that the subjects were less extra punitive or hostile after yogic training.

Kathleen Ellis and Dummer M.⁴³ conducted a study on the factors which influence the physical fitness of deaf and dumb persons. The purpose of the study was to identify disability-specific factors that might influence the physical fitness performance of the persons. It was concluded from the result that, parent hearing status was the only disability-specific influence on fitness levels, with 80% of the persons with two deaf parents participating in three or more sessions of physical activity per week, compared to 37% of persons with at least one hearing parent.

Kocher (1976)⁴⁴ studied mental fatigue, immediate memory and knee jerk and found out that practices of yogic asanas significantly improve performance of mental work and memory. The regular activity to patellar tendon or knee jerk extent was reduced indicating a sign of general relaxation.

Moorthy, A.M. (1982)⁴⁵ observed that yogic asanas as well as physical exercises improved flexibility of 90 boys and 90 girls after six weeks of training as judged by Curton's flexibility test.

Sandhu, R. S (1994)⁴⁶ reported that the practice of yoga asana has increased flexibility, strength, endurance and balance of children.

Jayanti Ghose ⁴⁷ observed that various system of medicine mostly aim to cure the disease whereas the aims of yoga are to prevent the disease and to promote health by reconditioning the psycho physiological mechanism of the individual. The basic approach of yoga is to correct the life style by cultivating a rational positive and spiritual attitude towards all life situations. Like Ayurveda and Naturopathy yoga is a very wide and comprehensive system embracing all walks of human life. Unlike Ayurveda, Unani and Homoeopathy, yoga is not merely a system of treatment but has potential to develop all-round health-physical, social, mental and spiritual.

Kocher⁴⁸ in a study concluded that asanas were helpful in achieving the psycho-physiological equilibrium and emotional stability. The muscles tone was an involuntary function and was related to and influenced by the emotional make up of the individual. It was observed that the increased muscles tone, maintenance of posture and equilibrium had effects on steadiness and co-ordination aspects. Therefore, the improvement in scores seemed to be due to some change brought about in the mechanism and building co-ordination and steadiness pattern through the practice of yogic asanas.

“Yoga is a science as well as an art of healthy living-physical, mental, moral, and spiritual. It is a philosophy of life based on certain psychological facts. It aims at the development of a perfect balance between the body and

the mind. Yoga can help in any type of stress related problems such as high blood pressure, circulation and heart problems, backache, fatigue, rheumatism and depression. All the systems of medicine at their best aim at curing the disease whereas yoga aims at preventing the disease and promoting health by reconditioning the psycho-physiological mechanism of the individual.”⁴⁹

Yoga has another vital difference from sporting activity. Movement of breath and control of the breathing pattern is very important for a yogi. In yogic science the energy, which motivates body, mind and emotions, is called prana.

Multiple Scleroses are a disease of central nervous system, which generally originates due to injury in and around head or backbone area. The disease has its effect on mental health and patient feels tired very soon and yoga has been found very beneficial for the treatment of the disease in Oregon health and science University Australia. Yoga treatment was added to the medical treatment for some patients and it was concluded that the group given yoga training with medicine is much cured than the other one.⁵⁰

In studies conducted by Pratap (1968), Gharote (1971)⁵¹, it has been observed that the aim and objectives of yoga as Patanjali said that it is the means of controlling oneself against irrational conduct and ultimately provide emotional stability. In yoga the various practices are claimed to be better suited to bring about psychological, physiological equilibrium and emotional stability and it is observed that these practices are helpful in resolving conflicts and consequently contribute to the emotional stability and calmness.

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Chapter-3

METHOD AND PROCEDURE

In this Chapter the design of study is being presented. The subjects, samples, procedure or methodology for the collection of data and the statistical method at the end has also been specified.

3.1 SAMPLE

From Kolkata school of hearing and speech impaired, 30 students were selected randomly.

3.2 FITNESS VARIABLES

The following items have been selected to check the mental health balance of the subjects.

- (i) Emotional stability
- (ii) Over all adjustment
- (iii) Autonomy
- (iv) Security-insecurity
- (v) Self concept
- (vi) Intelligence

Selection of training practices

The experimental group was advised the following asanas and pranayams during the training.

3.3 Asana

- (1) Uttanpadasana (double legs raising).
- (2) Sarvangasana (the shoulder stand)
- (3) Halasana (the plough).
- (4) Matsyasana (the fish).
- (5) Chakrasana (the wheel).
- (6) Ustrasana (the kneeling wheel).
- (7) Suptvajasana (the kneeling pose).
- (8) Ardhamatsyenderasana (the half spinal twist).

- (9) Padmasana (the lotus).

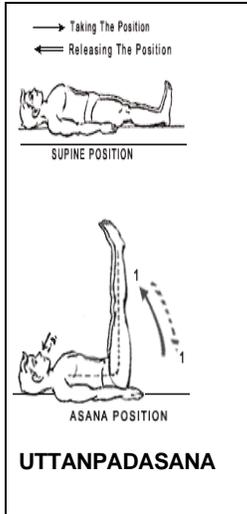
- (10) Vajrasana (the kneeling).

3.4 PRANAYAMS

- (1) Anuloma viloma.
- (2) Surya bhedana.
- (3) Chandra bhedana.
- (4) Shitali
- (5) Sitkari.

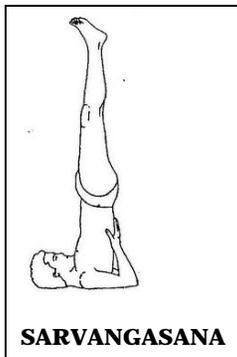
ASANA

3.3.1 Uttanpadasana (double legs raising)



1. Exhale and inhaling start raising both the legs upward and stop when they make angle of 90 degree with the floor.
2. Keep the sight at the toes of the feet.
3. Continue normal breathing and try to maintain the posture steady.
4. While raising the legs, it is necessary that the legs be kept straight and close together.
5. Keep the toes together and stretched towards sky.
6. Inhale and exhaling, bring both the legs down, back on to the floor.
7. Though this asana appears to be simple, it is difficult to maintain the posture. To start with try to maintain this for 5 to 10 seconds. Do not take unnecessary strain, if you feel uncomfortable then release the posture immediately.¹

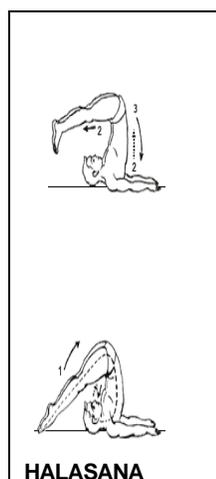
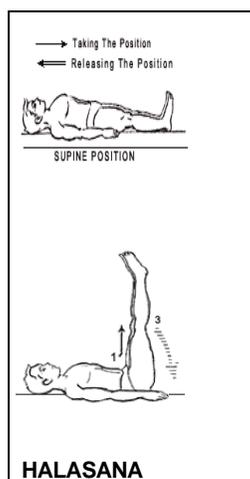
8. 3.3.2 Sarvangasana (the shoulder stand)



1. Lie flat on the back on a carpet, keeping legs stretched out, tightened at the knees. Place the hands by the side of the legs, palms down. Take a few deep breaths.

2. Exhale, bend the knees and move the legs towards the stomach till the thighs press it. Take two breaths.
3. Raise the hips from the floor with an exhalation and rest the hands on them by bending the arms at the elbows. Take two breaths.
4. Exhale; raise the trunk up perpendicularly supported by the hands until the chest touches the chin.
5. Only the back of the head and neck, the shoulders and the back of the arms up to elbow should rest on the floor. Place the hands in middle of the spine. Take two breaths.
6. Exhale; stretch the legs straight with the toes pointing up.
7. Stay in this position for 30 seconds with even breathing.
8. Exhale gradually slide down, release the hands, lay flat and relax.²

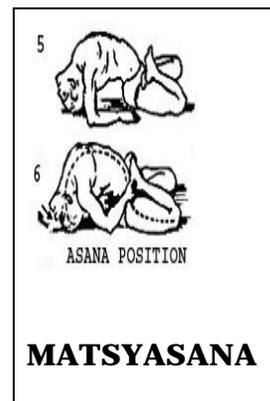
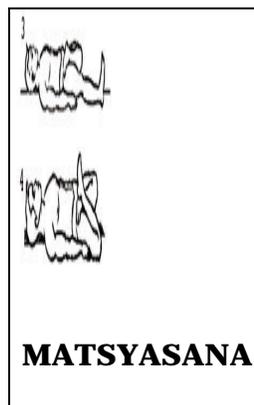
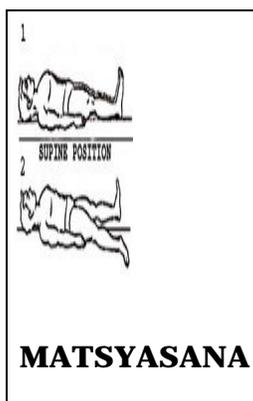
3.3.3 Halasana (the plough)



1. In this position the body looks like a traditional Indian plough pulled by bulls in the fields.
2. Also by practicing this pose one ploughs the body like one digs the earth, making it loose and free.
3. Exhale and while inhaling slowly raise the legs to a 90 degree angle from the floor.

4. Exhaling raise the waist and hips, taking the legs over the head, keeping them suspended above the ground.
5. After exhaling fully, lower the leg further down and rest the toes on the floor. Keep the toes stretched and breathe normally
6. Exhale and inhaling lift the toes up from the floor, keeping the legs straight in the knees.
7. Continue inhaling and slowly lower the spine back down to the ground, keeping the legs at a 90 degree angle with the floor.
8. Exhaling slowly lower both legs back to the supine position.³

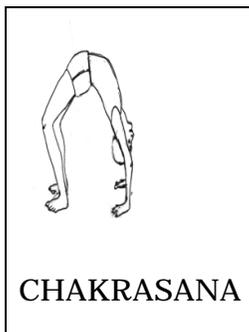
3.3.4 Matsyasana (the fish)



1. Spread the legs one foot apart.
2. Fold the left leg in the knee and place it on the right thigh.

3. Fold the right leg in the knee and place it on left thigh Now with the help of the elbows raise the head, curve the back backwards and place the top of the head on the floor, making the arch of the back .
4. Hold the toes of the feet with hands and continue normal breathing. In this asana, the thighs and knees are completely placed on the ground.
5. As the back is stretched in curve and head on floor, lot of weight is shifted to the head and throat is stretched.
6. Release the toes of the feet and support the shoulders with the elbows
7. Slowly reducing the weight on the head, straighten the neck and bring the shoulders on the floor
8. Straighten the right leg then the left leg
9. Bring back both the legs to normal position and take supine position⁴

3.3.5 Chakrasana (the wheel)



1. Start in supine position.
2. Bend at the knees and place the feet close to the buttock, about hip-width apart.
3. Lift the arms up and have them place beneath the shoulders, with the fingers pointing to the shoulder
4. Exhale while inhaling; lift the buttock, waist, lower and middle back off the ground.

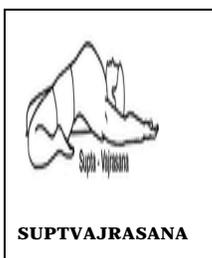
5. Exhale while inhaling; lift the shoulders up by pushing onto the ground with the palms.
6. Lift up the buttock; waist and the whole back until the hands are straight at elbows and legs at the knees. Breathe normally in the final position.
7. The whole back is in a backward arching position. There should be no tension in between the shoulder blades and in the neck region.
8. The weight of the body is distributed evenly on the feet and palms. You can do so by shifting the body (not the palms or feet) back and forth to find a balance in the weight distributed.
9. The neck should be in a relaxed position. Do not turn the head to either side as this might put unnecessary tension to the neck and shoulder.
10. The facial muscles should be relaxed and calm. Feel the openness of the chest and breath slow and steadily while in the pose Inhale while exhaling, bend at the elbows and legs at knees.
11. Bend the head, and release the head, shoulders, waist and buttock onto the ground. Rest the back entirely on the ground.
12. Bring both the palms away from the shoulders and have the arms down by the side of the body Straighten out the legs and come back into supine position.⁵

3.3.6 Ustrasana (the kneeling wheel)



1. Pre-pose Vajrasana.
2. Stand on the knees and keep the knees and feet separated.
3. Lean backward slowly and place the hands on the respective heels (place the right hand on the right heel and then left hand on left heel).
4. Do not strain. Push the abdomen forward.
5. Keep the thighs vertical and release the head and spine backward.
6. The weight of the body should be evenly supported by the legs and arms.
7. If possible place the palms on the soles of the feet.
8. One can also keep the toes erect.⁶

3.3.7 Suptvajrasana (the kneeling pose)

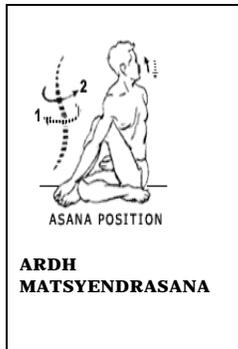


1. In Vajrasana shift both the heels outside the buttocks.
2. Slowly lean back, take the support of the elbows one after another and rest the back, shoulders and backside of the head on the ground.

3. Place the hands on the thighs or beside the thighs or in swastika banda or as a pillow below the head.

4. Knees may be kept apart in the beginning⁷

3.3.8 Ardhamatsyenderasana (the half spinal twist)



i) Sit on the floor, with the legs stretched straight in front.

ii) Bend the left knee and join thigh and calf; raise the seat from floor, place left foot under the buttocks and sit on the left foot so that left heel rests under the left buttock. The

foot used as seat should be kept horizontal on floor, the outer side of the ankle and the little toe of the foot resting on ground. If foot is not placed as such, it will be impossible to sit on it.

iii) Then bend right knee and lift right leg from the floor, place it by the outer side of the left thigh so that the outer side of the right ankle touches the outer side of the left thigh on the floor, keeping the right shin perpendicular to the floor.

iv) Turn the trunk 90 degree to the right until the left armpit touches the outer side of the right thigh. Bring the armpit over the right knee. Exhale, stretch the left arm from shoulder and twist it round the right knee. Bend the left elbow and move the left wrist to back of the waist.

v) The left arm should lock bend right knee tightly and there should be no space between the left armpit and the bent knee. To achieve this, exhale and move the trunk forward. Stay in this position and take two breaths.

vi) Now exhale deeply and swing back right arm from the shoulder, bend the right elbow, move right hand behind waist and either clasp it with left hand or vice versa. At first you will be able to catch a finger or two. With practice it will be possible to catch palms and then the wrist behind the back.

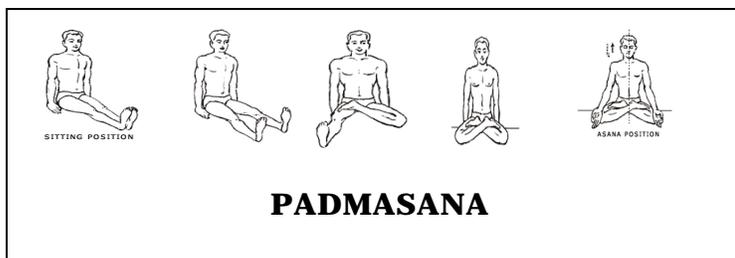
vii) The neck may be turned to left and gaze directed over the left shoulder, or to the right and gaze fixed at the centre of the eyebrows. The spinal twist will be greater if the neck is turned to left than when to right.

viii) As the diaphragm is squeezed by the spinal twist, the breathing will at first become short and fast. Do not be nervous. After some practice the pose can be held from half a minute to a minute with normal breathing.

ix) Release hands, remove right foot from the floor and straighten the right and then the left leg.⁸

x) Repeat posture on the other side.

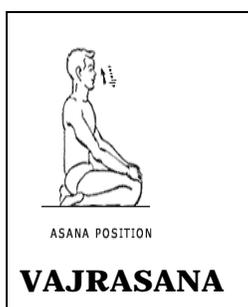
3.3.9 Padmasana (the lotus)



i) Sit on the floor with legs straight.

- ii) Bend right leg at the knee, hold right foot with the hands and place it at the root of the left thigh so that the right heel is nearer the naval.
- iii) Now bend the left leg and while holding left foot with hands, place it over right at root, the heel is nearer the naval.
- iv) People used to sitting on floor seldom have flexible knees. At the start they will feel excruciating pain around knees. By perseverance and continued practice pain will gradually subside and they can stay in the pose comfortably for a long time.
- v) From base to neck spine should remain erect. The arms may be stretched out, right hand being placed on right knee and left hand on left knee. The forefingers and thumbs are bent and should touch each other.
- vi) Change the position of legs by placing left foot over right thigh and right foot over left thigh. This will develop legs evenly.⁹

3.3.10 Vajrasana (the kneeling)



1. Fold the left leg in the knee and place the toe on the floor.
2. Fold the right leg in the knee and place the toe on the floor and join the two toes.
3. Sit on the pit formed by the parted heels Place the palms on the knees. It is important to keep the spine, the neck and the head, upright in one straight line in this Asana.

4. Keep the sight fixed at the level of the height. Don't have any pressure on the hands.
5. Let the whole weight of the body be set on the spine. Continue smooth breathing, when the final position is attained.
6. Remove the palms from the knees and bring them to the sides.
7. Take out the left leg and straighten it. Take out the right leg and straighten it.
8. Take the sitting position.
9. After a little practice, this Asana can be maintained for a long time.
10. In the daily routine it should be kept for five minutes to experience good results. With more practice it can be kept for three hours.¹⁰

3.4 PRANAYAM

3.4.1 Anuloma viloma

1. Beginners can start with deep breathing practice in sitting position (Padmasana - Lotus, Swastikasana- Auspicious, Vajrasana - Thunderbolt, Any Cross legged position in which the body can be relaxed and spine is erect.)
2. Pranav Mudra of right hand will help close the right nostril while inhaling through left nostril and ring finger can close the left nostril while inhaling through right.

3. Initially 4 seconds inhale through left and exhale for 6 seconds through right nostril, then inhale through right for 4 seconds and exhale through left for 6 seconds can be practiced for about 5 minutes.

4. With practice one can increase the counts to 4:8, or 5:10 or 6:12 seconds.

3.4.2 Surya bhedana

1. Beginners can start with deep breathing practice in sitting position (Padmasana - Lotus, Swastikasana- Auspicious, and Vajrasana - Thunderbolt, Any Cross legged position in which the body can be relaxed and spine is erected.)

2. Pranav Mudra of right hand will help close the left nostril while inhaling through right nostril.

3. Initially 4 seconds inhale through right and exhale for 6 seconds through left nostril, this can be practiced for about 5 minutes.

4. With practice one can increase the counts to 4:8, or 5:10 or 6:12 seconds.

3.4.3 Chandra bhedana

1. Beginners can start with deep breathing practice in sitting position (Padmasana - Lotus, Swastikasana- Auspicious, and Vajrasana - Thunderbolt, Any Cross legged position in which the body can be relaxed and spine is erected.)

2. Pranav Mudra of right hand will help close the right nostril while inhaling through left nostril.

3. Initially 4 seconds inhale through left and exhale for 6 seconds through right nostril, this can be practiced for about 5 minutes.
4. With practice one can increase the counts to 4:8, or 5:10 or 6:12 seconds.

3.4.4 Shitali

1. Beginners can start with deep breathing practice in sitting position (Padmasana - Lotus, Swastikasana- Auspicious, Vajrasana - Thunderbolt, Any Cross legged position in which the body can be relaxed and spine is erect
2. Then start inhaling through mouth by rolling the tongue, make sure that the air passing in is cooled via tongue.
3. Initially 4 seconds inhale through mouth while rolling the tongue and exhale for 6 seconds through both nostrils, this can be practiced for about 5 minutes.
4. With practice one can increase the counts to 4:8, or 5:10 or 6:12 seconds

3.4.5 Sitkari.

1. Beginners can start with deep breathing practice in sitting position (Padmasana - Lotus, Swastikasana- Auspicious, Vajrasana - Thunderbolt, Any Cross legged position in which the body can be relaxed and spine is erect.
2. Keep the waist, back, neck and the spinal column erect. Keep both your hands on the knees. Sit comfortably closing your eyes.

3. Bring your jaws together. Now place the front portion of the tongue against the front teeth and the rest of the tongue on the palate. Keep the lips open.
4. Now inhale through the mouth. Inhale through the right and left side of the lips while making the sound “Si-Si”. After inhaling, close your mouth. Retain breath and do Jalandhara Bandha.
5. After retaining your breath comfortably as long as possible, release the Jalandhara Bandha and exhale through both nostrils.
6. In the beginning this Pranayama should be done only thrice. It can be increased up to 15 to 20 times gradually.

3.5 PLAN OF THE STUDY

The subjects were divided into two groups, one was controlled and other was experimental. Each group had 15 hearing and speech impaired children. For nine-weeks pre-test programmes and post-test programmes were conducted. Physical and psychological factors were recorded during pre-test and after the tests were conducted the 15 hearing and speech impaired students were given yogic practices for nine weeks according to schedule.

The 15 hearing and speech impaired students practiced yogic exercises under proper guidance with the help of hearing and speech impaired teacher for nine weeks.

3.6 EXPERIMENTATION

Two groups of 15 students each were created. They were equalised on the basis of age randomly.

First group was experimental group with yogic practices given and second group was controlled group with no yogic practices.

A training programme of nine weeks having 2 sessions of one hour each in a day was organised to give practice of asana and pranayams.

3.7 ORGANIZATION OF THE ANALYSIS

The students of Kolkata school of hearing and speech impaired were chosen as subjects for research. For the experiments to be conducted, permission from Principal of the school was taken. Physical and psychological components of the students were pre-tested before the training started for 30 students where the full instruction was given with the help of hearing and speech impaired teacher before the test started.

Ten physical education teachers, hearing and speech impaired teachers and yoga coaches assisted for pre-tests, nine weeks yoga training and post tests.

3.7.1 Tools used

For physical factors eight pounds shot, zigzag run, TMT and bend and reach tests were used. For psychological fitness MHB by Arun Kumar and ASCI questionnaire by Agnihotri was used.

The tests conducted for measuring components of physical and psychological variables like strength, speed, agility, endurance, flexibility, mental health and self confidence of hearing and speech impaired children are as following:

3.7.2 Bend and reach test

(i) Purpose : To measure the flexibility.

(ii) Facilities and Equipments

A 20 inch scale marked half inches units was attached to a table so that half scale remains above and half below the level of table. The scale was not more than 3 inches wide.

(iii) Description

In taking this test the subject stood with toes even with the front edge of the table and against the side of the scale. The trunk was bend forward, finger in front of the scale the subject then reached slowly downward as far as possible. The fingertips of both hands moving parallel and equally down the scale. The knees were straight. The score was the distance on the downward stretch. Easy warm up bobbing were advocated to them before taking rest.

3.7.3 ZIG-ZAG RUNS TEST

(i) Purpose : To measure primarily the agility and secondarily the speed.

(ii) Facilities and equipment

A rectangular area at least 20 feet X 25 feet, five flag posts, a white flag, a stopwatch and marking powder.

(iii) Direction and instructions

Five flags posts (four at corner of 20 feet X 25 feet rectangle and one at the centre) were fixed. A starting and finish line was drawn at the side of a flag post. The subject assumes a starting stance on the starting line. On the show of white flag the hearing and speech impaired child run across the five flag posts as fast as possible and covered three rounds to finish the run at the finish line. The subject was asked to run as fast as possible and close to the flag posts without touching the flag posts. Two attempts were given to each subject. Time in seconds to complete the given course was recorded each time.

(iv) Scoring

The best time taken in seconds out of the two attempts was the final score of the subjects.

3.7.4 TREADMILL TEST

(i) Purpose : To measure the endurance.

(ii) Equipments

Measuring Tape, Six flags, marking powder, stop watch and grassy ground .

(iii) Procedure

The students assumed a starting position by taking a front leaning rest similar to that for push-up. From this position, one leg was flexed until the knee was between arms and the thigh was against chest. From this position, with one leg fully flex and other fully extended the test started on showing white flag to the subject who exchanged the position of his feet as fast as possible. The action of the feet was a jump from one position to the other (with

both feet). The jump exchange was continued as rapidly as possible for one minute. The subject jumped from one position to the other, keeping into consideration that the thigh must touch the chest on each exchange forward. Rear leg must be straight on exchange. Backward feet of the subject must be in straight line.

(iv) Scoring : The subject scored one point for exchange of position.

3.7.5 Eight pound shot put test

(i) Purpose : To measure strength.

(ii) Facilities and equipments

A marked circle sector for shot put event as per rules of Amateur Athletic Federation of India. A steel tape and a shot put of eight pounds were required.

(iii) Direction

The event was explained to be performed by the subjects as per the A. A. F. I rules. The students practiced to throw the shot put with one hand only and not from the shoulder. At the time the subject take a stance in the ring on show of white flag (commence) put was in close proximity to the chin and the hand was not dropped below this position during the action of putting the shot. It was not brought from behind the line of shoulders and it lands in between the sector line marked as landing area. The subjects were given three trials in succession, the fault was counted as trial but in the event if all the three trials were fouls the subjects were given chances until he made a fair put.

(iv) Scoring

Each put was measured in meters from the nearest mark made by the fall of the shot to the inside of the circumference of the circle. The final score was the distance of the best put measured to the nearest centimetre.

To test the psychological Fitness following test were used:

Mental Health: Mental Health Battery by Arun Kumar Singh was used.

In recent years clinical psychologists as well as educationist had started giving proper attention to the study of mental health. However, in India, relatively very few works had been conducted.

(v) Method

MHB intends to assess the status of mental health of persons in the age range of 13-22 years. Items for each part were separately written and submitted to a group of experts also made necessary corrections and modifications. Following Kelley's methods, (N=370) they were subjected to item analysis, which finally yielded about 130 items for the MHB. While selecting items, preference was given to those, which had high positive discrimination index (Singh1998). The desirability values of the items in the first five parts were determined by correlating the items with Hindi version of Morlowe-Crowne (M-D) Social Desirability Scale (1960). Items, which yielded high and significant correlations, with M-D-scale, were dropped. Finally a set of 130 items were retained for MBH, following are 130 items selected dimension wise for MHB:

Srl. No.	Name of the items	Total No. of Items
Part I	Emotional stability	15

Part II	Over all adjustment	40
Part III	Autonomy	15
Part IV	Security-insecurity	15
Part V	Self concept	15
Part VI	Intelligence	30
	Total	130

3.7.6 Self-Confidence: Agnihotri's self confidence inventory was used

Self-confidence does not necessarily imply "self-belief" or a belief in one's ability to succeed. For instance, one may be inept at a particular sport or activity, but remain 'confident' in one's demeanor, simply because one does not place a great deal of emphasis on the outcome of the activity. The key element to self-confidence is, therefore, an acceptance of the myriad consequences of a particular situation, whether they are good or bad.

When one does not dwell on negative consequences one can be more 'self-confident' because one is worrying far less about failure or (more accurately) the disapproval of others following potential failure. One is then more likely to focus on the actual situation which means that enjoyment and success in that situation is also more probable. If there is any "self-belief" component it is simply a belief in one's ability to tolerate whatever outcome may arise; a certainty that one will cope irrespective of what happens.

Belief in one's abilities to perform an activity comes through successful experience and may add to, or consolidate; a general sense of self-confidence also comes with knowledge. One will be more confident even if performing an activity never done after being taught. With each step successfully performed, belief in one's abilities will increase.

(i) Items - analysis

The preliminary form of the inventory consisting of ninety true-false type items was administered to a sample of 30 individuals. Taking 28% of the top scores and 28% of the bottom scores identified the extreme groups. On the basis of the proportion of true and false answer for each item the validity index of each item was determined with the help of Flanagan's Table of normalized bi-serial coefficients. The obtained validity indices ranged between .07 and .73. The items having validity indices .25 and above were retained for the final form of the inventory. Thus, the final form of the inventory had 56 items.

3.8 STATISTICAL STUDY OF INFORMATION

The Statistical study of information which was obtained through random sampling, which was compiled and tabulated variable wise and group wise, was done on computer.

To know the level of significance of the difference of pre and post test mean scores of each variable at the initial stage, the value of means standard deviation of all the variables were computed.

To know the significance of difference among various exercises groups against each variables where the difference were found significant at 0.05 and 0.01 level of confidence, the t-test was applied and results were tabulated to know the level of significance of difference among various groups at the second stage. A detailed computation in the form of tables and graphical representation is given.

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