In the era of modern civilization, the impact of industrialization and technology can be visualized on every aspect of human life. This fast changing scenario has turned every individual into a living machine as his dependency on automated machines is growing with each passing day. It is due to the fact that he is always striving hard to make more-and-more money to surge ahead of others and to earn more luxuries for himself and his family. As a result, he is always living a life of immense tension and unwanted pressures. Money has become the prime mover of his life. It is everything for him viz; father, mother and even God. In the pursuit of money-making he has forgotten all the social obligations, relations, morality and even his health. As a result, he is not able to spare even a short span of time to look after his health. This situation has made him more prone to all sorts of diseases due to lack of proper exercise, diet and rest. Prolonged and unscheduled working hours, improper diet and insufficient rest periods have turned him into a physically weaker, mentally disturbed, emotionally unstable and socially unharmonious individual.
Good health and fitness can not be taken for granted, especially with today’s sedentary and automated life-styles.

“Our modern life-style fosters unfitness.” (Bud Getchell, 1976)

In such a drastic scenario he requires such activities which can enlighten his soul and bring an all-round development to his personality. Yoga, being a science of spirituality through meditation, can make him free from worldly sorrows, submerge him in the God, and get him eternal bliss. Also, regular practice of yoga can take him towards the higher echelons of health and fitness. Every individual can perform yogic exercises as they don’t need any special infrastructure and equipments. They can be practiced wherever you get a space to sit freely and can be done indoors as-well-as outdoors. According to Sw. Satyananda Sarswati (1963) “Yoga is not an ancient myth but most valuable inheritance of the present. It is essential need of today and culture of tomorrow.”

2 Saraswati Sw. Satyananda (1963), Yoga Kirti Satambh, Munger: B. Y. B., India.
Obviously, the above statement reflects that yoga is not a luxury but a necessity of the present time for mankind because situation of life itself has become too demanding and yoga is the only way out.

People have modern comforts and amenities at their command even then they are much worried and disturbed. They cannot go to bed without taking sleeping pills.

Anjana (2008)\textsuperscript{3} says the much-talked National Policy on Education-1992\textsuperscript{4} has put much emphasis on Yoga Education. This policy 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 teacher training courses” (N.P.E., 1992). But nothing significant could be done. Finally government of India has formed Department of AYUS (Ayurveda, Yoga, Unani & Siddha) which regulate and propagate these Indian origin alternative systems of medicine. This could be

\textsuperscript{3} Anjana (2008), ‘Effects of Specific Cultural Asanas and Isotonic Training on Motor Fitness of College Female Students’, A Ph.D. thesis submitted to Kurukshetra University.p: 2-6

resulted only due to scientific researches in the field of yoga and other systems. But yet now, no integrated comprehensive policy for yoga in education system has been proposed. This is because of lacking of good scientific researches on school children / students about efficacy of yoga training.

(A) YOGA

II. Meaning and Concept of Yoga

Maharshi Patanjali has given a new dimension to the orthodox yoga philosophy. He collected, coordinated and illustrated the basic principles of yoga in his classical work Yoga Sutras. He explained yoga as ‘Chitta Vritti Nirodha’ (3/1),\textsuperscript{5} which means to free mind from any kind of modifications.

According to Upanishads, yoga is the higher state of consciousness in which the activities of mind and intellect ceases to a stationary state and wisdom comes to a stand.

"Yoga is a system of living with sense and science, of the realization of ultimate values and altruistic mission of life. Yoga involves a harmonious order of mind, matter and man.

\textsuperscript{5} Patanjali Yoga Sutras.- Verse –3, chapter-1.
Thus Sw. Satyananda explains yoga in general term and its place in modern time. **J.P.N. Misra (1999)**\(^6\) points out more clearly linguistic meaning as 'Yoga' is derived from the Sanskrit dhatu (root) 'Yuj', which means 'to join' or 'to bind', 'to attach'. It also means 'to direct' and 'to concentrate on a particular point of thought', 'to work in full attention of mind and body'. It is a true union of 'Atma' (Soul) with almighty 'Parmatma' (God). This union also includes physical, mental, intellectual and spiritual faculties of a human being. Further Mishra cited the words of Mahadev Desai as, ‘it is the yoking of all the powers of body, mind and soul to God’. He says "this means the disciplining of the intellect, the mind, the emotions, the will, that yoga presupposes; it means a poise of the soul which enables one to look at life in all its aspects evenly."

As stated in Sri Bhagvad Gita, yoga is the freedom from sorrows. It has also been defined as **‘Yoga Karmasu Kushalam’**\(^7\) By a reference as narrated in Bhagvad Gita, yoga has been described as **Samatvam Yoga Uchchyate**\(^8\), which means Yoga is equanimity in success and failure or to act

---


\(^7\) Sri Bhagvad Gita verse-50, chapter-2

\(^8\) Sri Bhagvad Gita verse-48, chapter-2.
without greed for result and to remain unmoved after both success and failure.

i. “In Bhagavad Gita, Lord Shri Krishna explains to Arjuna that deliverance from contact with pain and sorrow is called yoga. It is mentioned that when mind, wisdom and self are under well control, freedom from desires prevails, only then one can understand the real meaning of eternal joy and that will be condition beyond explanation. In such a condition the person abides by the real feeling and does not move even a bit. He will be free from the greatest state of agonies and sorrows. This is the real yoga.” Thus in Bhagavad Gita various definitions are provided because for different states of mind evolution and types of person there exist a particular type of yoga suitable for them respectively.

Few more definitions from different text are very conclusive provided as under:

(i) According to Katha Upanishad: "Yoga is the firm holding back of the senses."

(ii) According to Maitri Upanishad: "Union with the deity in the fire, in the sun, in heart is yoga."
(iii) According to **Rigveda**: "It implies an attitude, an effort which brings the individual (microcosm) in identity and affirmation with the whole (macrocosm)."

(iv) According to **Markande Purana**: "Yoga removes ignorance and impurities and thus leads one's mind to enlightenment as to the true nature of self."

(v) According to **Vishnu Purana**: "It is union of mind with the spirit of life, in the river of world’s problems and pains."

(vi) According to **Darshan Mala**: "Yoga is the union of the seer and the Seeri."

(vii) According to **Yoga Vashishta**: "Yoga is method travelling with happiness."

We can define yoga as the science of consciousness, the science of creativity, the science of personality development, the science of self, and the science of body and mind. Actually its meaning, definition and explanation may differ from person to person in view of varied nature of an individual's feelings and experiences. But one thing is perfectly clear that yoga is always concerned with three integrated components of self - body, mind and consciousness.
II. Origin of Yoga

Although yoga has innumerable facets, its fundamental teachings are based on philosophical and spiritual principles. Sankrachariya (1960)\(^9\) observed that yoga starts with Lord Shiva and His first disciple was Parvati. While Sw. Sivaananda (1979)\(^{10}\) observe that yoga occurs from Rigveda. Popular conception is that yoga is originated by Maharishi Patanjali but it is false because he merely co-ordinated and compiled the sutras from past literature and past experiences. Its development has taken place gradually in many phases of time, beginning from the previous knowledge stored in ancient Upanishads, Bhagavad Gita and the basics elaborated by Patanjali in his monumental work “Yoga Sutras”. Yoga Darshan and Sankhya Darshan are so much vividly descriptive that most of the principles (sutras) revealed there are very much relevant even today. Misra (1999)\(^{11}\) Yoga has travelled and got enriched through the wisdom and thoughts of several Hindu, Jain, Buddhist and Sufi philosophical thinkers, as well as of the modem sages and saints like Swami Vivekananda, Sri Aurobindo, Pandit Sampumananda and Mahatma Gandhi.

---

\(^9\) Sankracharya (1960), Gita Bhasya, Gorakhpur: Gita Press, India.

\(^{10}\) Sivanananda, Swami (1979), Yoga and Yoga Asana, The Divine Life Society: Rishikesh, India.

\(^{11}\) Misra, J.P.N (1999), Preksha Yoga, New Delhi: B. Jain Pub. (P) Ltd. India, p.05.
Several scientific studies have been carried out on yoga in association with modern basic and medical sciences. Even after continuously changing scenario, the basic spiritual principles of yoga are still relevant and acceptable to one and all. Further, Misra, comparing the Yoga and Samkhya clarified that according to Samkhya metaphysical knowledge is the only path to salvation, whereas according to yoga it may be achieved by precious techniques of meditation. Both Samkhya and Yoga agree that the world is real. Patanjali’s effort was directed especially to co-ordinate the philosophical material, taken from Samkhya, around technical formula for concentration, meditation and ecstasy. In fact Patanjali converted the mystical thoughts of yoga into a systematic system of philosophy, by giving it proper shape of technique, which is under reach of a human being.

**ii-a) Yoga in six major ancient philosophical systems of Indian origin**

According to Singh (1994)\(^\text{12}\) the classical systems of Indian philosophy are the six systems – ‘Sad Darshana’. Darshana is from the Sanskrit root ‘drah’ to see or Vision. The ‘Sad

Darshana’ are, therefore, the six points of view of Indian philosophy or may be called as six major visions about the same unique reality. Although these schools have varying philosophies, yet there is also a kind of unity in them. There are different view points of the one truth.

(i) **Nyaya Darshana** was founded by Rishi Gotama, is the science of logics.

(ii) **Vaisheshika Darshana** was founded by Kanada Rishi, is the revelation of knowledge leading to the realisation of the self.

(iii) **Samkhya Darshana** was founded by Maharishi Kapila, is pure philosophy and tries to harmonise the teaching of the Vedas through reason.

(iv) **Yoga Darshana** was founded by Maharishi Patanjali, gives an integrated approach, teaching the aspirant to train his body and mind to achieve the goal of existence, which is trance or 'Samadhi'.

(v) **Mimamsa Darshana** is also called 'Purva Mimansa; because it deals with the 'purva' (earlier) part of the Vedas. The school was founded by 'Jaimini'. It lays down the nature of 'dharma', and emphasises the ritual and ethical side of religion rather than the philosophical.
(vi) **Vedanta Darshana** or 'Uttar Mimansa' is called so because it deals with the later part of the Vedas or essence of vedas.

It is very obvious and seems natural that various aspects of yoga do have a Hindu flavour, such as the Sanskrit mantras and verses that practitioners may recite aloud or repeat mentally or the ideas of moral retribution (karma) and reincarnation. However, the emphasis in yoga is based on self-experiential knowledge and personal verification rather than mere belief or disbelief. Further, some of the ideas that may seem typically Hindu and possibly strike you as strange, such as reincarnation, are not unique to Hinduism. The premise that life continues after the death of the physical body and that our spiritual identity is subsequently clothed in another body is common to many religious traditions.

**Stephen (1958)**\(^\text{13}\) says that though yoga is indeed associated with certain metaphysical notions, but its practice itself does not require that we should adopt them. People of any religion or spiritual persuasion, as well as open minded agnostics, can practice yoga with great benefit. However, they

tend to have the kinds of yogic experiences that cause them at least to entertain. So Stephen stressed that the metaphysical explanations of yoga should not prove a stumbling block to anyone with a genuine desire to explore this ancient tradition. It is this built in flexibility that has allowed the yoga tradition to adopt itself. If this sounds to same ears, we merely need to point out the case of The Buddha who lived some 2500 years ago. Although he was brought up in Hindu tradition but he was really an agnostic of sorts. He refused to speculate about ultimate things like soul, God etc. and advised his disciples to simply tread the path he had discovered and walked before them. Yoga, then is a universal art, which flourishes wherever a person is dedicated to higher values. The egotistical preoccupations of the unenlightened mind must banish the way of inner joy and outer harmony.

Yoga may be imagined like a tree that is old 5000 years and more, it has big tangled roots, a gigantic stem, several huge branches, numerous secondary branches and countless twinges. Some of the branches are quite dead, while others are very much alive, blossoming a new every spring. There are six major branches of yoga i.e. Hatha Yoga, Raja Yoga, Karma Yoga, Bhakti
Yoga, Jnana Yoga and Tantra yoga. Each branch is suited for a different personality style or approach to life. Hatha yoga is the forceful (Hatha) path, involving the deliberate arousal of the body's psycho-spiritual energy, called Kundalini Shakti or 'serpent power'. It is this energy that is though to rise through the seven primary psycho-spiritual centers (Chakras) of the body, its journey ends at the crown centre at the top of the head and co-incides with the experiences of ecstasy without a trace of duality in consciousness.

Traditionally, this path called for tremendous courage, determination and physical fitness. The modern western approach to Hatha Yoga is less demanding and in fact is widely employed as a form of physical therapy. Raja yoga is the royal (raja) path, proceeding by means of meditation and inner and outer renunciation. This approach is identical with classical yoga, as outlined in the yoga sutra of Patanjali, was composed two centuries past or before the Christ and according to some authorities even earlier. Some scholars with literary proofs consider Patanjali contemporary to The Buddha. Yoga Darshan and Samkhya Darshan are so much ‘vividly descriptive’ that most of the principles (sutras) revealed there are very much
relevant even in modern context. Raja Yoga consists of the well-known eight 'limbs' moral discipline, self-restraint, posture, breath control, sensory inhibition, concentration, meditation and ecstasy.

**Karma Yoga** is the path of self-transcending through actions, as taught in the Bhagwad Gita, the new testament of Hinduism. ‘*Karma binds Karma liberates*’ says Sw. Satyananda. So long as one act out of egotism, without awareness of one’s true spiritual identity, action (karma) is supposed to bind consciousness. In other words, such action is ‘karmic’. It leads to desire, which leads to other actions of a similar nature, which obscure out true identity more and more. Karma yoga seeks to break this vicious cycle and guide yoga practitioners to spiritual freedom through the discipline of work that is selfless and performed as a service to others. Karma yoga can be suited to apply to virtually all yoga practitioners in the contemporary world. It can bring sanity and balance to our work oriented society.

**Bhakti Yoga** is the path of self-transcending devotion or all embracing love for the divine, which is seen as being present in every person and thing. This is often considered to be the easiest
approach. However, for it to bear spiritual fruit our devotion or love must be intense and pure. Bhakti Yoga is best suited for those who are emotionally fluid and seek to cultivate an open heart.

**Tantra Yoga** is the path of self-transcendence through ritual means including consecrated sexuality. The fundamental axiom of Tantra Yoga or tantraism, is that there is no real gap between the divine and the world but that the divine inheres in the world and therefore, can be found in the midst of ordinary life. Tantra Yoga is widely misunderstood today, as consisting exclusively of sexual rituals, and many westerners are attracted to this branch of yoga because of that assumption. However, genuine Tantra Yoga involves a great deal more than sex, and in fact most tantric schools recommend a celibate life style. Tantra Yoga is the most oriental and esoteric of all yogic branches. However, some of its ideas and rituals may be found meaningful by western yoga practitioners. It is best suited for those serious students of yoga who have an inner relationship to the feminine cosmic power (Shakti) and who enjoy a more ceremonial approach.
Almost all systems of self-transformation begin with the
body whether they are philosophically eastern or western in
history or orientation. Every mediation system begins with a
special position of the body, like the familiar lotus position. This
quickly followed by attention to breathing even classical psycho-
analysis begun by Sigmund Freud, originally had the patient
down, thus changing mental states by changing physical one.
Asana is merely a special body position, which can allow and
create special mental effects and changes.

Today yoga is being applied in various fields of human
interest i.e. health, cure and prevention of injuries, sports
performance, body relaxation and above all the development of
physical fitness, which is the key pre-requisite factor needed for
sports performance in different sports activities. As far as
physical body of man is concerned many studies show that
practices of yoga make the body strong, flexible and had
improved performance. Yoga also improves general fitness
alongwith psychological demands concerned with human being.
Yoga has been proved to give mental equilibrium to an individual
or sports person.
Mishra (1999)\textsuperscript{14}, Meti and Srinivasan (2001) et al.\textsuperscript{15} have made study of Pranayama training on body function in normal young volunteers. They found potential benefits of pranayama in health and diseases and yoga practice have effect on respiratory valuables. The finding is that the practice of pranayama causes sympathetic activation. Other study shows significant effect of yoga asanas on developing motor fitness in late childhood period.

\textit{ii-b) Description of Yoga in Upanishada and Vedanta}

India is acknowledged the country of the origin of yoga where for hundreds of years it has been a part of man's activities directed towards higher spiritual achievements. To describe yoga, even in Indian terms, requires research into its past history and present situation, observed Singh (1999).\textsuperscript{16}

\textsuperscript{14} Misra, J.P.N (1999), Preksha Yoga, New Delhi: B. Jain Pub. (P) Ltd. India, p.146.


It has been rightly pointed out by Werner (1998)\textsuperscript{17} that the country of origin of Yoga is undoubtedly India where for many hundreds of years it has been a part of man’s activities directed to higher spiritual achievements. It belongs to the distant past—when and how it begins, can’t be established. It is not really proper to speak about the historical origin of Yoga. What is possible is to try to trace historical sources of information about the occurrence of yogis and yoga practice in the past in India. Werner (1998)\textsuperscript{18} further advances that the very earliest indication though not a proof, of the existence of some form of yoga practice in India comes from the pre-vedic Harappan culture which can be dated at least as far back as 2700 B.C. A number of excavated seals show pictures of a figure seated in a yoga posture that has been used by the Indian yogis of meditation till the present day. The posture of the figure pertaining to yogasana of meditation is important. Many seals were found in Mohanjodaro and Harappan picture scenes from religious life and mythological events, which obviously were of great significance to the people of that time. The seated deity and

\textsuperscript{17} Werner, Karel (1998), Yoga and Indian Philosophy, New Delhi: Moti Lal Banarsidas publishers, p 93.
\textsuperscript{18} Werner, Karel (1998), Yoga and Indian Philosophy, New Delhi: Moti Lal Banarsidas publishers, p 103.
other figures, undoubtedly absorbed in meditation, indicate that mental yoga exercises were known and played a substantial part in the religious or may be perhaps even said philosophical outlook. Archaeological discoveries allow us, therefore, to speculate with some justification that a wide range of yoga activities were already known to the ancient people of pre-Aryana Civilization of India.

In Vedic India, the situation was less difficult, but it is by no means easy to draw a picture of the state of yoga practice and knowledge of that time. Even when we accept sympathetically the view that the vedic literature which is the sole source of our knowledge originated with inspiration of enlightened seers. It has been preserved in the in form of the hymns, arranged into collections of our Vedas, namely, the Rig Veda, the Yajur Veda, the Sam Veda and the Atherva Veda.

Eliade (1958)\(^\text{19}\) rightly reported that the term Yoga: in its technical sense first occurs in the 'Taittiriya Upanishad' and the 'Jatha Unanishad'. But Yogic practice is discernible in the earliest Upanishada. Thus a verse from the Chandogya Upanishad,

‘atmani sarvendriyani sampratisha’, meaning that concentrating one's all senses upon oneself allow us to infer the practice of pratyahara; similarly, term 'pranayama', is frequently used in the 'Brihadaranyaka Upanishad'.

A physiological detail can be found in the 'Chandogya Upanishad', it is mentioned that there are a hundred and one arteries of the heart. Only one of these passes up to the crown of the head. Going up by it, one goes to immortality. This reference is of considerable importance; it reveals the existence of a system of mystical physiology concerning with psycho-spiritual phenomenon.

**Dasgupta's (1974)** observations state that in 'Prashna Upanishad' it is said that the vital principle (prana) derives its existence from the self. He shows 'Yoga' as a system of thought or discipline apart from the general metaphysical position.

The Yogic Upanishads and the literature of Tantra will give increasingly important and valid details.

The 'Kathopanishad' describes Yoga thus: "When the senses are stilled, when the 'mind is at rest, when the intellect

---

wavers not, then, says the wise, the highest stage is reached. This steady control of the senses and the mind has been defined as Yoga. He who attains it, is free from delusion”.

Anjana (2008)\textsuperscript{21} Observes in the Upanishad ‘Maitry’, Yoga is described as the method of fixing our thoughts on the object of meditation and most of the characteristic of this science have been mentioned there in this connection. The ‘Maitri Upanishad’ knows only four of the eight ‘angas’ of classic yoga -- ‘Yama’, ‘Niyama’, ‘Dharana’ and ‘Smadhi’. The Physiological materialism of the explanation of ‘Dharma’ is interesting. By pressing the tip of his tongue against palate, by restraining voice, mind and breath one see Brahma’ through contemplation ‘Tarks’. Several passages lay stress on the syllable ‘OM’; meditation on it leads to deliverance, and that brings the vision of the ‘Brahma’ and immortality.

The’ Culika Upanishadas’ , was probable written at the same period as the’Maitri’, and in it we find the simplest form of the theistic yoga. Chronologically, these two are followed by two groups of short Upanishads in the nature of technical manuals

for the use of ascetic discipline of either 'vedanta' or 'yoga'; the two groups are known as the 'Samnyasa Upanishads' and the 'Yoga Upanishadas', the former is almost all in prose, the latter in verse.

In the group of 'Samynsa Upanishadas', we must mention the 'Brahma Upanishad', the 'Samynsa', the' Aruneya', the 'Kanthasruti', the 'Jabala', and the 'Paramahamsa Upanishad'. The ‘Paramahamsa Upanishad’ regards concrete experimental knowledge of the unity between the individual soul ‘Jivatman’ and the supreme soul ‘paramtaman’ as yoga. The group of yogic Upanisads  include the 'Brahmabindu', 'ksurika', 'Tejobindu', 'Brahmavidya', 'Amrtabindu', 'Nadabindu', 'Dhyanabindu', 'Yogasikha', yogatattva', Dhyahnbindu'. Other collections include ten or eleven still later yogic Upanishads Yogakundali, Varsha, Pasupatabrahma, etc.

It is the 'Yogatattva' Upanishad that appears to be most minutely acquainted with yogic practices; it mentions the eight 'angas' (parts) and distinguishes the four kinds of yoga; 'Mantra Yoga', 'Laya Yoga', 'Hatha Yoga', and 'Raja Yoga'. For the first time, an upnishad gives numerous and precise details concerning the extra- ordinary powers gained by practice and
meditation. The four chief Dhayana asanas namely: Siddhasanas, Padmasanas, Simhasanas, and Bhadrasanas are only mentioned. A description of 'pranayama' follows together with a definition of the 'mantra' as a unit of measurement for the phases of respiration i.e. inhalation, exhalation and holdings.

The definition of Pratyahara' is somewhat different from that given in the 'Yogasutras': Completely withdrawing the sense organs from (sensory) objects during suspension of respiration'. 'Samadhi' is described in this Upanishad as realizing the paradoxical situation in which the 'Jivatma' individual soul and the 'Paramatma' universal spirit, are placed for the moment when all the distinction between them has ceased. Towards the end, the 'Yogatattva Upanishad' also gives a list of 'asanas' and 'mudras', some of which are also mentioned in the 'Hathayoga Pradipika'. Among them is the singular meditative position that consists balancing on the crown of the head, feet up, which has therapeutic effects wrinkles and gray hairs disappear three months after this exercise. Other 'mudras' result in the acquisition of well known siddis; the power of flying through the air, knowledge of the future, even immortality through the Viajroli mudra etc.
Singh summarized that 'Nadabindu Upanishad' presents a mythical personification of the mystical syllable 'OM'. Next come a series of twelve 'dharanas' with details as to what becomes of 'Yogis' who die at one or another degree of meditation. The 'turiya' state is described with technique. The yogi must exert himself to obtain sounds as suitable as possible, for this is the only way in which he can progress in his meditation. Finally, the yogi will experience union with the 'Para Brahma', i.e. soundless consciousness.

'Dhyanabindu' begins with an iconographic description of the syllable 'OM' which is to be 'contemplated' as identical with 'Brahma'. 'Pranayama' is identified with the three chief gods of the Vedic pantheon: "Brahma is said to be inhalation, 'Vishnu suspension (of breath)', 'Rudra' exhalation", However, the Yogi is advised to obtain 'Pranayama' through concentration on the syllable 'OM'. The text mentions four 'asanas', seven 'Chakras' (Psycho-pranic centers), and gives two names of nadis- 'Ida' and 'Pingla'. It also mentions the awakening of 'Paramesvari', that is of kundalini.
**iii-c) Contemporary Yoga Systems and Institutes in Modern India**

In modern era, the journey of yoga is enriched through the wisdom and thoughts of various Hindu, Jain, Buddhist and Sufi philosophical thinkers and religious missionaries, sages and saints like Swami Vivekananda, Sri Aurobindo, Sw. Sivananda, Sw.Satyananda, Sw. Niranjanananada Saraswati, Sw. Rama, Sw. Kaivalyananda etc. Several scientific studies have been carried out on yoga in association with the scientific methodology and medical sciences. Even after continuously changing scenario, the basic spiritual principles of yoga are still relevant, acceptable, applied in nature and scope for current problems and upliftment of society in all respects.

**Devi Bhavanani (2008)**\(^\text{22}\) states in her lecture on *Some Issues to be Considered---* stated that in India, at present time, eight major schools or traditions of Yoga are well established over scores of years. Life Positive, the well known, New Age Life Style magazine printed from New Delhi did a profile on Yoga in its March, 2003 edition. It listed the following eight Yoga

institutes in India, as "most important." The editor wrote: "While every city and town in India has yoga centres by now, there are a few institutions which have been around for decades and have become world famous for their contribution to the promotion and teaching of Yoga, and to research and training. The Yoga Schools profile included;

- International Centre for Yoga Education and Research (ICYER).
- Pondicherry - Guru Swami Gitananda.
- Ramamani iyengar Memorial Yoga Institute, Pune - Guru B.K.S. iyengar.
- Sivananda Yoga Vedanta Centres Guru Swami Vishnu-devananda.
- Kaivalyadhama, Lonavla - Guru Swami Kuvalayananda.
- Ashtanga Yoga Research Institute, Mysore-Guru K. Pattabhi Jois.
- Krishnamacharya Yoga Mandiram, Chennai-Guru TKV Desikachar.
- The Yoga Institute, Mumbai - Guru Shri Yogendra.
- Bihar School of Yoga, Munger - Guru Swami Satyananda Saraswati.
Above mentioned schools and their Gurus who established them are well known internationally and have been pioneers in bringing Yoga to the 20th and 21st centuries. But one must here note a vital point that none of these Gurus were "accredited" by any Government agency. None of the Gurus have any "academic qualification in Yoga," Yet, their teachings have stood the test of time. How will such institutions be evaluated and accredited?

Now there are about seventy institutions in India are engaged in popularising yoga by teaching, and practical training Gharote, (1981). There are much more institutions outside India. About forty institutions are engaged in the therapy work. While some institutions are engaged in the therapy work, some institutions are engaged in different aspects of Yoga. There are about 80 Ashramas which are engaged in conducting various religious and cultural activities related to yoga. The above estimates are older one and in modern time numbers has increased in multiples. Every institution, which is working for yoga has significant role to play. Some of these institutions

---

emphasize on the formation of attitudes: a way of living; some specialized in meditational practices while some specialize in teaching psycho-physical practices. Thus, these institutes may be looked as special institutes, which may deal any of practices of yogic activities.

Such types of yogic institutions are now also known as Yoga and Naturopathy centers, Yoga Resorts, Yogic Health Centers, Yogic Hospitals and spas with yogic facilities. As indicated above, many institutions exist working in this field although number of them lack in the systematic approach. Training aspect of yoga is not the only aspect in which any yogic institution can specialize as it is seen from the various areas of specialization in yoga. Apart from training, some institutions are specialized in the research or treatment as mentioned earlier. But Yogic institutions specialized in research are very less. This aspect of specialization can be under-rated. Research in any field is complementary to the advancement of the knowledge of that field. Therefore, investigation in yoga should be accepted. Significant and special yogic institutes working in this area should get enhancing attention. So, the number of specialized yogic institutions should increase.
So, it can be said that the training aspect and the research aspect are not entirely different for specialization. Actually both complement each other. In good views these two aspects of specialization should go hand in hand. But in fact training aspect form a basis for research and research in turn, helps to improve the training.

The research treatment aspects and training programme in the single yoga institute is very rare. One of good institutes is kaivalyadhama, lonawala in Maharashtra near Pune. There system of yoga is more based on Hatha Yoga. This institute was established by Sw. Kaivalyananda. The other highly reputed institute is Bihar Yoga Bharti i.e. first university of Yoga, formally known as Bihar School of Yoga established in Munger (Bihar) by Sw. Satyananda in 1963, with the mandate of Sw. Sivananda ‘to spread yoga door to door and sore to sore.’ Their system is more based on Raja Yoga and Tantra. This institute focus on yogic spiritual living and self experiencing. This institute has branches all over India and in almost countries. Beside these, Himalyan institute of yogic sciences in Dehradun has done good work in the field of Yoga Psychology researches and Vivekananda Yoga Kendra in Banglore is well known for
modernizing whole research work in both yoga physiological and yoga psychological. Dev Sanskriti University though provides education in almost all streams but known for Yogaic sciences prominently. Kriya Yoga Institute in Ranchi and Ayanger Yoga Institute in Pune etc. are famous and worthy institutions to impart yoga education and propagating the same throughout world. These institutes should be encouraged and their activities should be sponsored by the government and the public both. Such type of institutions should be increased in all the countries under government’s regularization.

Nobody denies the need of promoting the healthy activities of yoga. No body would disagree about promotion of special institutes devoted to the various fields of specialization. In the course of promotion of Yoga there is definite need for special yogic institutes suited to the purpose. Keeping in mind such type of existing institutions should be recognized and these should be supported by the government and should be encouraged occasionally and they should also be supported adequately considering their merits and output of work. According to the needs new institutions of the special type should also be set up.
III. Different Aspects of Yoga

The concept of yoga includes various aspects like health, spiritual, sports etc. to list and discuss all of them is out of preview of present research work but researcher want to provide brief account of following important aspects.

(a) Remedial Aspects

Yoga really is known in masses for its remedial aspects and problem solving nature for the individual. According to Kuvalayananda and Vinekar (1968), Yoga lays great stress on three aspects. These three integral steps are:

(i) Cultivation of correct psychological attitudes.
(ii) Reconditioning of the neuro-muscular and neuro-glandular systems, in fact the whole body to enable it 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 when ever it is necessary.

---

24 Kuvalayananda and Vinekar, S. L (1968), Yogic Therapy, Lonawala: Kaivalyadham.
Relaxation is achieved through these Yogic activities (Asana) and their regular practice can bring down high blood pressure to near normal levels as S. Dutta Ray quoted from Datey and Bhagat (1975). Further Ray (2003) summarizes the Processes involved in Yogasanas as under:

(i) Yogasanas are primarily aimed at improving muscle tone (Suppleness) and plasticity of muscles and joints. These are achieved by four processes:

a) Relieving those muscles that are continually under strain of gravity.

b) Activating those small groups of muscles that were once important at some stage of our biological evolution from animals but disuse led to their decay when we assumed erect postures.

c) Activating the stretch-reflexes at the lower level of the spinal cord. Thus, the neural impulses that are needed to traverse the long sensory pathways upto the Ascending

---

Reticular Formation and further through Thalamus to the Cortex are spared the loss of energy. This automatically helps in maintaining the alpha wave activity of the EEG by not disturbing the thalmocortical pathways. This ensures a resting, meditative activity at the level of the cerebral cortex.

d) The static comfortable postures, accompanied by a meditative state. Dampens, the inflow of sensory impulses to the brain. This in turn, causes less stimulation to the ‘Emotional brain’ and therefore less disturbances to disturb the equilibrium state of mind.

Various aspect of yoga like meditative, preventive, relaxative, curative and therapeutic etc. are following:

(i) **Meditative Aspect:** Meditative aspects is being covered by the meditative asanas, Dharna Dhyan and Samadhi.

(ii) **Relaxative Aspects:** Similarly relaxative aspect can also be covered through the practice of relaxative activities like, meditative asanas, relaxative asanas and yog nidra etc.
(iii) **Preventive Aspect**: Practice of yoga may prevent from lot of physical and psychological problems, this make a person more adjustable to self and society both.

(iv) **Curative Aspect**: Yoga may rectify the disorder in health whether it is physical or mental.

(v) **Promotive Aspect**: Even a healthy person may be benefited through yoga because yogic concept health advocate ‘Holistic Health’ which include spiritual upliftment.

*b) Educational Aspect of Yoga*

Who does not want to be happy? Happiness differs from individual to individual. But the way we search happiness is the wrong rout of materialism accumulation while happiness is the result of inner perception of self. Materialism is the mean to achieve happiness rather then goal itself. Modern civilization has provided many amenities in life yet peace of mind is lacking. Man exposed to the stresses and strains of life almost every minute which he is not able to cope with. He needs some way through which he can lessen the burden of stresses. This can happen only when he is able to adapt himself to the situation.
Usually, reactions to the stress are far out of proportion to the demands made by the circumstances and they lead to the onset of diseases.

The immediate need for modern man is to develop psycho-physiological resistance to enable him to meet successfully with the circumstances and not to have the reaction on the part of the body and mind out of the proportion. To the problem of modern man, yoga has an answer for one who sincerely wants to seek it. We emphasize the word sincerely, because no attempt could be pursued without sincerity.

Yoga considers man as a whole and provide solution in holistic terms. The wholeness of man consists of some of important aspects like physical, mental, emotional and spiritual. Yoga education is a graded way to tackle these aspects with adequate emphasis on some, but they all are homogeneously linked together and when one aspect is tackled other aspects too are indirectly and conveniently touched. Thus, Yoga believes in education and physical education of the whole man and his personality which has several facets.
Effectively, yoga education has the means for all the individuals considering their differences in abilities and capacities. Thus, yoga education can cater to the physical, emotional or spiritual needs according to the limitations and interest of the persons. Ruskin said, “Education does not mean teaching people to know what they do not know, it means teaching them to behave as they do not behave”. The emphasis here is on teaching behaviour referring perhaps to moral education or social education. Here we see that there is emphasis on teaching others how to act. But as J. Krishnamurthy points out, “Education means to bring about change in the mind, not in others but in the self”. We want to change everybody except ourselves.

As Sri Aurobindo (2001) while stating golden rules of educating and teaching clarified, “He (teacher) does not call forth the knowledge that is within ; he only shows him (student) where it lies and how it can be habituated to rise to the surface.” Exactly this is the position of yoga education. Yoga education starts from self. Its emphasis is on practice rather than precept

---

only. **Sri Aurobindo (2001)**\(^{27}\) provides more support for self
(soul) centered education, “….the realization that each human
being is a self-developing soul and that the business of both
parents and teacher is to enable and to help the child to educate
himself....”

All the problems of human life may be tackled with
because yoga education is holistic in nature and has an
approach to the body; it has an approach to the mind, and it has
also an approach to the spirit. These three approaches are not
isolated from each other. Yoga education has integrated
approach of psychosomatic and psycho-spiritual development.

**Singh (1994)**\(^{28}\) observes that Maharishi Patanjali, the
author of Astang Yoga has given eight steps of yoga education.
They are --Yam, Niyam, Asana, Pranayam, Pratyahara, Dharana,
Dhyana and Samadhi. The first four steps are called Bahiranga
Yoga and last four steps are called Antaranga Yoga. The first
four steps are considered preparatory steps for Antaranga Yoga.

\(^{27}\) Sri Aurobindo (2001), Psychic Education, New Delhi: Sri
Auribindo Education society, p.175.

\(^{28}\) Singh, Rakam (1994), Effect of Selected Yoga Asanas on Motor
Department of Physical Education, Kurukshetra
University.p.53-57
Rules of all disciplines come in the Yam, Niyam. The man who follows the yam and niyam, will be a good disciplined person. Yam are divided in some more steps -- Ahinsa, Satya, Asteya, Brahmcharya as Niyam is also divided in four steps like Shauch, Santosh, Tapas, Swadhyay Ishwarprananidhana. Yam and Niyam are meant for cultivation of correct psychological attitudes. Mishra (1991)\textsuperscript{29} while presenting his paper, he to describes the eight steps of Asthang Yoga as given below:

1. **Yama (Self restrains to bring hormoney with the society):** In this method one has to learn self-control by way of Ahinsa. Satya, Asteya, Brahmacharya and Aparigraha.

   (i) **Ahinsa:** we should not cause injury to any living being through words or deeds. We should love all creation.

   (ii) **Satya:** We should practise it externally, as internally.

   (iii) **Asteya:** We should not steal anything or have greed of others wealth or possession.

\textsuperscript{29} Mishra, A. N (1991), Yoga, Health and Relaxation, Paper Presented at UGC National Seminar at Kurukshetra University from Feb. 4-6.
(iv) **Brahmacharya**: We should not have a lustful look upon any girl or woman.

(v) **Aparigraha**: Stealing is bad but we should not accept gift also.

2. **Niyama (Self restrains to bring hormoney with the self)**

: This process also has again five steps given below for individual harmony.

(i) **Sauch**: It implies cleaning of body and mind i.e. to protect from pollutants whether physical or psychological etc.

(ii) **Santosha**: Keeping faith in God, one should be contented with whatever one has.

(iii) **Tapa**: This is a bit hard and requires much restraint. One must be able to bear pleasure and pain, heat and cold, hunger and thirst with equanimity.

(iv) **Swadhyaya**: Spending time on reading scriptures, and in discourse with sages and great people.
(v) **Ishwar Pranidhan**: In this process one surrenders completely to God. It implies that whatever has happened and whatever is will be yours. I am not doer.

3. **Asanas**: These are of two types. One type of asanas are for the physical health and the other type is for the mental health or meditation. Regular practice of Asanas purifies the veins and nerves and helps in the promotion of the general health of the body. Asanas which are performed for the sake of meditation (e.g., Padmasan, Sidhasana, and Swastikasana), give us strength to get rid of all kinds of worries, sorrows and greed, etc.

4. **Pranayama**: Pranayama is controlling the normal breathing cycle. It helps one to get rid of worldly desires and sensual drives and thereby it leads to knowledge. It influences the entire nervous system developing latent powers of the man.

5. **Pratyahara**: When the sense organs get detached with the external objects and project inward, the process is called 'Pratyahara'. The practice of Pratyahara brings the senses
under control and it gives inner strength to the body to enter Samadhi. Before this stage, it is inevitable to practise Yama, Niyama, Asanas and Pranayama. Patanjsali is of the opinion that it is through Pratyahara that the external senses come in close and direct contact with mind and intellect.

6. **Dharana**: Fixing one's mind on an external object is called Dharana. But it is much difficult to practise it. One has to regulate first food, thoughts, words and deeds. And then a thorough and sincere practice of Yamas, Niyamas, Asanas and Pranayama is essential to practise Dharana. People say that it is easy to walk on a sharp edge of a sword but difficult to practise Dharana.

7. **Dhayana**: In this process of Dhayana one meditates with perfect attention on an object of concentration. One forgets one's entity and just merges himself with that object only. In this stage doer of concentration and object of concentration become integrated one.

8. **Samadhi**: In the process of Dhayana when mind becomes one with the object of concentration the stage of Samadhi
is reached automatically. In other words, the climax of Dhayana can be said to be the attainment of Samadhi. After having attained this stage, one is able to understand the reality of everything in the universe. This is super-conscious state or may be described as merger of individual consciousness with supreme reality. This stage also termed as union (yog) of jivatman with parmatman.

After reaching the final stage, one is free from the bondage of birth and death. After having made progress on the path to achieve all the stages, one is said to possess wonderful powers. He can perform miracles, not to speak of possessing only good health and mental peace. Yoga is worth only if practiced.

**c) Importance of Yoga in Sports**

According to **Singh (1994)**

According to **Singh (1994)** yoga is widely recognized not only important for sports but also, in modern time, promoted as sports. Different governments have placed the yogic activities under sports departments of states. Even various universities also started yoga training under sports departments due to it's

---

close proximity with sports on physical level. But the main contribution of yoga to sports may be considered from the following points of view.

**(i) Yoga as Preventive of the Sports Injuries:** Every sport activity involves vigorous movements. All vigorous activities shorten muscles and make them more susceptible to pulls and strains. It is necessary to remember that the more a person involves himself in intensive and vigorous exercises, the more he needs to stretch.

Herbert **A. de Vries (1961)** has shown the utility of stretching procedures in the prevention of athletic injuries. When athletes exercise vigorously their muscles are injured slightly. With healing, the affected muscles become shorter and tighter. Such a muscle is more susceptible to injury. Those who do not stretch, lack flexibility, and are more frequently injured. In sports like running, the muscles most commonly injured by pulls and strains are the Hamstring and the Calf muscles. Athletes competing in running sports should regularly practise stretching.

---

By the trainers, it is accepted that warming up are necessary not only to avoid injuries but also to improve the performance in sports. Various warming up procedures are available and depending upon a specific sport, selected warming up procedures is followed. Callisthenic exercises have been very popular up to recent times. But now-a-days stretching is considered more important than calisthenics. Some avoid calisthenics and start with stretching programme and the results are reported to be excellent. The key to a good warming up is to increase the pace of the workout so gradually that the muscles can adjust to the increased pace and remain free from injury. The steady stretching in asanas prepares such a background.

(ii) **Yoga for the Cure of Sports Injuries:**

Yogic stretching exercises like asana prevent sports injuries in the form of muscle spasms, etc. Herbert A. de Vies has reported the utility of stretching procedures of Hathayoga in relieving certain conditions of muscles due to injuries in sports.

(iii) **Yoga for the Promotion of Sports:**

Yogic exercises application has a considerable scope in the promotion of sports. Promotion of sports depends on: (a)
basic motor fitness factors, (b) psychological factors and (c) specific sports skills.

(iv) **Maintenance of Physical Fitness During off-Season:**

In sports and Physical Education, for any good performance fitness is must. Different sports require different types of fitness emphasizing on a particular fitness factor. However, general level of physical fitness is necessary for every sportsman. The law of use and disuse suggests that if you want to be fit, you must exercise. The routine of exercise differs from individual to individual according to purpose and capacity. Sportsmen also select different routine of exercise during the season of participation. But basic levels of physical fitness must be maintained even during off-season. This can be attained excellently by indulging in Yogic routine. Yogic exercises deal with the vital organs of the body on which health depends. The precursor of physical fitness lies in the efficient working of the vital organs of the body and Yoga aims at it.
Sport may be defined as a restricted sense traditionalized set of rules to be exemplified by men who try to be excellent in and through their bodies”. In a wider sense, we must think of life time sports which may be defined as "Physical activities in which persons participate throughout most of their life-span". This life-time-sports-oriented approach is greatly needed in the field of physical education today because the traditional programme of team sports has failed to prepare students who could participate in physical activities during the adult periods. Many people feel that physical activity is only for the star athletes who possess high neuro-muscular skill. On the contrary, life-time sports concept suggests that exercise is for everyone including those persons who have various handicaps. From this point of view Yoga could be aptly called life-time sports Yoga. Therefore, Yoga not only contributes to other sports but it also helps in sport by itself and is excellent in nature.

**d) Aspect of Yogasanas, Pranayama and Shatkarmas.**

To examine concept of asanas, pranayama and shatkarmas researcher has presented it from different angles. Maharishi Patanjali’s ‘Yoga Sutra’, Sawami Swatmaram’s ‘Hatha Yoga Pardipika’ and Rishi Gherend ‘Gherend simhita’.
**Meaning of Yogasan:**

Yogasan is made up of two words yoga + Asan. The word Asan has its origin from the Sanskrit word ‘Aas’ which means ‘sit’ or ‘posture of sitting’. But, we cannot say every sitting posture is an asan according to yoga. There are some specific position of the body in which if one sit and perform yoga gets specific benefits early.

**Cultural & Corrective Asanas:**

The significance of these asanas is such that the body remain free from diseases, remains stable and prepare body to be in specific posture for a longer period of time. These asanas present the exercisal aspects of the asanas.

**Relaxative Asanas:**

The asanas which are related to relaxation of the body are called relaxative asanas. It is suggestive that we should perform a relaxtive asana between two asanas.

**Meditative Asanas:**

The purpose of these asanas is to prepare body for futher yogic activities such as pranayama, pratyahar, dharna,
Meditation and Smadhi. Through which he can attain the supreme positions of the yoga.

**Pranayama**

Pranayama is made up of two words pran+Ayama which means the celestial power which runs our life. We can call it ‘Breathe’ in ordinary words. Whereas ‘Ayama’ means to control the pran. So the word pranayama means the process through which we control breathing.

**Process of Pranayama:**

We have to go through three different steps to perform pranayama respectively

**Purak:**

To inhale the air according to the complete capacity is called purak.

**Kumbhaka:**

After inhaling the air according to complete capacity and hold the same is called Kumbhaka.
**Rechek:**

To exhale the air gradually is called rechek.

**Shatkarmas:**

It is cleaning process of internal body. By cleaning process we means that part of the process by which we purify or clean the internal organs of the body. So that their should not be any sort of disease in the body. And the different organs of the body work actively and smoothly and properly. Some cleaning processes are such which strengthen the muscles.


So it is clear that Asanas comes at no. 3, and Pranayama comes at no.4 . He also advise to practice all limbs together. Patanjali describe Asana as “Sthirasukhamasanam” i.e. Steady and comfortable should be the posture. (P.Y.S. 46/2)\(^{32}\)

“Prayatnas aithilyanantasamapttibhyam” i.e. By loosening of effort and by meditation on serpent ananta, asana is masterd.

\(^{32}\) Ibid., chapter 2, verse 46, p. 208.
"Tato dandvanabhigahatah" i.e. thereafter, the pairs of opposites cease to have any impact. (P.Y.S. 48/2)

All these three verses explain that Asana is not a physical posture merely but process of meditation is implicit in that. Steadiness, comfort, effortlessness and freedom from pain and pleasure are required for successful yoga asanas. According to Maharishi Patanjali a slackening of efforts 'is an essential condition of asana'. In fact Asana without such efforts would not be Yogic in any sense.

More popularly asanas are considered as part of Hatha Yoga, the Hatha-yoga texts includes Gherend simhita describes thirty-two asanas and Hatha-Yoga-Pradeepika describe fifteen asana only while in Shiva Smhita it is mentioned that as many as jivas as many asanas exist. Most of texts regard 84 yogasanas. In Hatha-Yoga-Pradipika ther are four chapters as Asanas, Shatkarmas and Pranayama, Mudra and Bhand and Smadhi. So in this text Asanas occupie first place. Swami Muktibodhinanda (1993) observed that Sw. Swatmarama

---

33 Ibid., chapter 2, verse 47, p. 209.
34 Ibid., chapter 2, verse 48, p. 210
35 Muktibodhinanda, Swami (1993), Hatha Yoga Pradapika, Munger: Bihar School of Yoga, chapter 1, verse 17, p. 63.
described purpose of asanas steadiness and firmness of body and mind. He also declare that person will be diseaseless and lightness (flexibility) of limbs will be experienced.

Mahrishi Patanjali has defined Pranayam in his ‘Yogsutra’. According to him Breaks in the process of breathing is called Pranayam. He has explained three types of Pranayam: Outer, International and Control. According to Swami Swatma Ram to control the ‘Pran’ or breathe is called Pranayam. It has three Parts: Purak, Kumbhaka and Rechaka. The performer is advised to perform the Pranayam by following this process. There are eight types of Pranayam mentioned in the “Hathyog Pardeepika.”

Rishi Gherend in the fifth chapter of his “Gherend Samhita” discusses the eight types of Pranayam. He used word ‘Kumbhaka’ instead of Pranayama. After consulting the scriptures related to yoga we come to the conclusion that mostly all the saints consider “the control of breathing as Pranayam.”

Swami Swatma Ram in his ‘Hathyog Pardeepika preferred shatkarmas (the cleaning process). He has explained that a person who has fat and has problem of cough should practice
shakarmas. He has mentioned six-types of processes: Dhoti, Vasti, Neti, Tratak, Neoli and Kapalbhatti. Rishi Gherend has also explained six types of Shatkarmas in his “Gherend Samhita” which are Dhoti, Vasti, Neti, Tratak, Neoli and Kapalbhatti has divided them into further 21 subtypes.

The researcher, keeping in view the above mentioned things, has selected specific twenty asanas, two pranayam and two shatkarmas for his training programme.

**(B) ** **ISOMETRIC EXERCISES**

i) **Meaning and Concept**

Iso (same) metric (distance) training refers to method of training in which there is no change in the jointangle. Without movement, great musculotendinous tension can still occur, thus creating a training effect on the body. Although Isometric means same distance training, movement will occur in the form of shortening of the muscle fibers due to the contractile properties of the muscle. Properly performed isometric training is not just holding a position while looking at the clock for a set period of time, In fact, a focused maximal activation of a muscle or group of muscles is required to perform an isometric exercise properly.
In his book ‘Supertraining’ (2004), Siff states \(^{36}\), “Isometric contraction requires a muscle to increase its tension from rest to a maximal or sub maximal value over a certain time, to sustain this tension for another period and to decrease this tension to rest or a lower value”. It is this increase in tension and maximal activation of muscle fibers, which gives isometric training a place in any performance, based athletic training system.

Isometric exercise is a strange concept that may go well, against everything you’ve been lead to believe about exercise, weight loss and muscle building. Normally when you think of going to the gym or doing a workout you imagine something fairly active with lots of lifting, sweating and running. Well isometric exercise is actually the complete opposite of and involves working out without moving.

While that might sound far fetched, you probably have the wrong idea you see although you’re not technically moving, you are still in fact contracting your muscles over long periods and putting in hundred percent of your efforts. Isometric exercise is the opposite of plyometric exercise which involves sudden

explosive movements and includes such exercises as box jumps and clapping press ups. While plyometric exercises then work those fast twitch muscle fibers used for fast movements such as sprinting while isometric exercises work the slow twitch muscle fibers that are key for endurance, as well as the smaller supporting muscles around those major muscle groups and are used for balance. While isometric movements don’t train the muscle through the full range of movement, they do train them to their fullest at the most difficult point making them great for balance as well as strength gains (though potentially resulting in a slightly ‘shorter’ looking muscle if used alone unless you train isometrically at a range of joint positions), for this reason many advocate their use including Bruce Lee himself. The normal movements you are more used to using in the gym are called dynamic exercises and fall between isometric and plyometric exercise. To get the full range of benefits from your workout you should really be using all three together.

Isometric exercise, on the other hand, refers to something more precise- holding still, often under conditions of substantial or maximum resistance. Holding any weight and keeping it still, neither allowing it to fall nor raising it, is an isometric exercise
for the same muscles. And isometric exercise is also exemplified by any and every Hatha Yoga posture which you are holding steadily with muscular effort.

ii) FORMS OF ISOMETRIC TRAINING:

Shea (2006) describe the types of isometrics we utilize are Iso holds, Iso Presses, Iso Contrasts, Oscillatory Isos, and Impact Absorption Isos. Below is a brief overview of each.

ISO HOLD:

An isometric hold is a static exercise in which the athlete is required to hold a particular position with or without resistance for a required period of time. The athlete is trying to disallow any movement, while trying to recruit the correct muscle fibers to perform this movement. This type of isometric is used to educate the body to properly recruit and stabilize the kinetic chain.

ISO PRESS:

An isometric press is a static exercise in which the athlete pushes or pulls against an immovable object for a required time.

The athlete is trying to generate as much force as possible, trying to actually move the immovable object. This method of isometric teaches the CNS to recruit more muscle fibers to perform a movement, so when the similar movement is performed dynamically, these “extra” muscle fibers will be activated readily.

**ISO CONTRAST:**

By putting the muscles in the least mechanically advantageous position (stretched position) and requiring those muscles to fire maximally from this position, an athlete is asking his CNS to work overtime. As the CNS allows the recruitment of more muscle fibers to perform this movement, the force being generated is increased. Once the athlete stops the isometric exercise they will then perform a power movement for low repetitions with minimal rest. The theory behind the contrast is based on the fact that the athlete will readily activate more muscle fibers to perform the ballistic movement, when preceded by an isometric exercise.

**OSCILLATORY ISOMETRICS:**

Immediately following an isometric exercise (release all tension), the athlete will perform a single or series of powerful
micro-contractions in the same mechanical position as the isometric contraction was performed. Basically all tension will be released from the isometric exercise and the dynamic form of the exercise will be performed with minimal range of motion occurring.

**IMPACT ABSORPTION ISOMETRICS:**

A Form of isometric in which athletes absorbs a force or impact and immediately performs an isometric contraction for a required time. Upon properly absorbing the impact, the athlete will minimize any change in the joint angle and hold this position.

Isometric Training can be of great value to any athlete or trainer looking to increase performance. If the athlete lacks in muscle activation, iso holds can be of great benefit. If the athlete cannot get past a sticking point, iso presses should do the trick. If an athlete is looking to advance his power, iso/ballistic contrasts or Oscillatory isos may help. When done correctly, athletes will find isometrics to be challenging and effective.
(C) **MOTOR FITNESS**

The term fitness i.e. physical fitness and motor fitness are often used interchangeably. More clearly it includes proper anatomical functioning with the physiological organs optimum efficiency and psychological wellness of the person. Though, these have slightly different meanings and connotations. So, following classification of fitness is to clarify:

- General Fitness
- Physical Fitness
- Psychological Fitness
- Motor fitness etc.

**Fitness** has a broader meaning, which includes not only physical fitness but anatomical, psychological and physical fitness. Thus fitness is not a matter of mere muscles. Neither, it is a matter of physical capacity alone. It includes the realms of mental, moral, social and emotional fitness as well. Fitness is an individual’s matter. It implies the ability of each person to live most effectively with his/her potentialities. Ability to function is a readiness or preparedness for performance with regard to big muscular activity without undue fatigue. It is also limited phase
of physical fitness and does not include many of the factors. In its meaning it is highly related to total fitness in the same manner. Physical performance factors which are basis to all movement may be pointed out consist of agility, speed, power, strength, endurance, balance, flexibility and the like. These factors can also be revealed through the racial motor activities which include jumping, climbing, throwing and hanging. These are also known as universal skills because they seem to be common to all performance of all people regardless of geography or nationality. They form the framework of man's physical behavior and fitness whether it is physical or motor. The term fitness implies both physical and motor.

Motor fitness refers to innate capacity to learn motor skills. Motor ability has been defined as the present acquired and innate ability to perform motor skills of a general fundamental nature. More insight was produced by Coulter (2004) as defining the related terms; Motor has to do with output from the motor neurons (located within the central nervous system) to skeletal muscles, smooth muscle, cardiac

---

muscle, and glands throughout the body; contrast with sensory. Motor neuron one of three classes of neurons (the others are interneuron and sensory neurons); innervates skeletal muscle fibers; counterpart to sensory neurons. Motor unit means motor neuron (including its dendrites and axon) plus all of the muscle fibers that it supplies.

According to American Association for Health, Physical Education and Recreation (1965) motor fitness is that state which characterizes the degree to which a person is able to function efficiently. Keeping in view of all the components of motor fitness, it is also related to some personal factors of human being such as maturity, size, physique etc. These factors help the movement of human body and became a motor fitness. It is also called motor behavior a term sometime referred to general sports or athletic ability. Motor ability and motor fitness of an individual has been defined as the present acquired and innate motor ability for the performance of a skill of general or specific nature, exclusively highly specialized sports or physical activities.

_____________________

Scott (1959) conceptualizes the term motor ability as used to mean achievement in basic motor skills or it may be interpreted as a more general term combining the concept of motor ability and achievement.

**Components of Motor Fitness**

These factors are associated with muscular movement each in its own way affects the quality of both general and specific skills. The following factors forms basis of a movement and popularly known as factors of motor fitness:

**Strength:**

The basic of any movement is muscular activity and most of the factors of motor performance are dependent to some extent on strength. In varying amounts strength is pre-requisite to any kinds of fundamental skills such as running, jumping, throwing, climbing, hanging etc, and other which use these kind of activities. Strength is defined as capacity of the individual to exert muscular force. The strength in a muscle is in proportion to its effective cross-section of muscular fiber at micro level.

---

simple words, it can be said that maximum muscular contraction applied by will of the individual at any particular time is called 'strength'.

II. **Speed:**

Muscular action has a temporal quality or capacity of an individual to perform successive movements of the same pattern at a fast rate or even one single movement while speed would appear to be an innate quality. It can be improved by practice of the coordinated movement and by learning proper techniques.

Speed is related to strength and an increase in strength may be accompanied by increase in speed. The rapidity of any movement may be affected by body weight, density, muscle viscosity, body structure and nutritional feature such as length of the body part or range of flexibility in the joint. It can also be said that covering of maximum distance in minimum period is called speed.

III. **Endurance:**

It may be defined as a physiological capacity to maintain movement effort over a prolonged period of time. These are of two
types. One is concerned with the factor of strength and other with the circulatory and respiratory system. The first one has to do with the ability of the muscles or muscle groups, to continue or to function under a heavy workload without undue fatigue over a period of time is called muscular endurance. It is apparent that the stronger individual can continue successive movement under work stress for a longer duration or the more repetitions than a weaker person. In the other type of endurance is associated with the circulatory-respiratory system, As far as the questions of physiological fitness is involved; it is related to stress on heart which effect the circulation and respiratory systems. The person exercising tends to get out of breath and if he is to continue exercise over a period of time, there has to be an adjustment in the circulatory respiratory systems to meet the stress conditions. In both the cases training can make for greater efficiency.

IV. Flexibility:

Flexibility is concerned with the range of movement in a joint. It limits the degree to which the body or some parts of the body can bend, twist, or move by means of flexion or extension of the muscles. The degree of flexibility and extensibility depends
upon not only of the muscles, but also on the nature of the ligaments, which surround the joints. It is a specific quality rather than a general one since there is variation in degree of flexibility from one joint to another.

V. Agility:

Agility is the ability to move the body or parts of the body in space in order to change directions quickly and accurately. In this factor the big muscles of the body are involved and they must be coordinated rapidly and precisely. Hence both innate capacities i.e. the training and experience are important.

VI. Balance:

It is the ability to sustain the body posture in a static position for an effective response or to control it adequately in a specific position while it is in motor or following motion. The first part refers to static balance and the latter to dynamic. Balance is the basis to most movements and is found in a number of elements. Static balance is observed chiefly in sitting or standing position of yogaasana like a hand stand posture say Bakasana, Murasana, Shirhasana or a balance stunt on a balancing beam. Dynamic balance is revealed when the body is moved from one
position to another and stability must not only be achieved during the movement but also aftermath of the movement.

VII. Power:

Power is the capacity of the performer to apply maximum muscular contraction at the fastest rate. It is a product of the principle of force, times and velocity. In this case force is the strength of the muscle and velocity is speed with which the strength is used in movement. Thus, power as an explosive action where maximum muscular force is released at maximum speed. It is one of the most basic components of movement and is characteristic of the superior athlete. It has limitations similar to those of speed.

All these factors are related to motor performance, combination of which is known as motor fitness in this study. It represents a limited phase of physical fitness and in many instances may become motor ability of a man. Motor fitness like motor ability is gauged by performance and this performance is made up of many elements, many of which are the same as for motor ability. However, the nature of motor fitness is also based on performance without undue stress and fatigue.
Physical fitness is the basic requirement for good performance in sports and physical activity and proper emphasis must be given to it. For sports those are physically demanding in competition, coaches recommend training programmes that include a greater stress on the body to develop the general state of fitness desirable for the sport, which would not be achieved in its practice alone. Players, who cover short distance in play, run longer distances in training to develop their aerobic capacities. The different types of training methods along with the group of exercises help in increasing the functional capacity of an individual to perform a task without much fatigue accumulating energy to meet heavier demands.

**Statement of the Problem**

The problem of the present research is concerned with the boy students studying in a college. Regarding their over all performance in sports and academic depends on sound fitness and good health. Hence researcher felt highly motivated to select the present problem for research. Further the problem may precisely be stated as given below:
“EFFECTS OF SPECIFIC YOGIC AND ISOMETRIC TRAINING ON MOTOR FITNESS VARIABLES”

The main purpose of this study is to find out the effect of specific yogic and isometric training on the motor fitness of students but researcher is further interested in differentiating between efficacy of yogic and efficacy of isometric training on motor fitness of students in the sample selected for conducting present research work.

Objectives of The Study:

The objectives of the present study are formulated as under:

(i) To find out the effects of specific yogic training on motor fitness variables of U G courses boy students of physical education.

(ii) To find out the effects of specific isometric training on motor fitness variables of U G courses boy students of physical education.

(iii) To find out whether specific yogic or isometric training are more beneficial for motor fitness variables of U G courses boy students of physical education.
HYPOTHESES OF THE STUDY:

1. There will be a significant difference of specific yogic training on fitness variables of UG courses boy students of Physical Education.

2. There will be a significant difference of isometric training on motor fitness of UG courses boy students of Physical Education.

3. There will be no significant difference between specific yogic training and isometric training on motor fitness variables of UG courses boy students of Physical Education.

4. There will be no significant difference in control group.

LIMITATIONS OF THE STUDY

Though the researcher was very alert and careful all the time, then too, there were few factors which were beyond the control. They can be considered, the limitations of the present study. Following factors are as under:

1. All subjects were from one college i.e. B.A.R Janta College, Kaul (Kaithal) only, for the sample of present study.

2. The dietary habits, life style of the subjects might influence
results of the study, considered as the limitation of the study.

3. Mental and emotional state of the subjects may influence results of the study and considered as the limitations of the study.

4. It was not possible on the part of the researcher to control the socio-economic condition of the students.

5. Heights and weights of the group did not match in real terms. It was generally observed that in the college in a particular class or in a particular age group, students were generally of the average similar height and weight.

6. No consideration was given to caste, creed and religion.

7. Intelligence quotient factor was also not considered.

8. Students of the control group was not instructed any exercises but were free so it is out of knowledge of researcher if any of them by chance was doing exercises.

9. The training was, off and on due to holidays or individual absence of the students. However researcher told students to practise regularly even on holiday in the same manner as daily in college.

10. The little warm up was necessary before classes of exercise.
DELIMITATIONS OF THE STUDY

The study was delimited to 120 boy students studying in B.A.R Janta College, Kaul (Kaithal) studying in U G courses in physical education.

1. All selected were residents of college hostels and local near by villages, so that they may be regular for the training programmes.

2. Three homogeneous groups were formed according to the age by matching the groups. All selected were in between 17 to 21 years for all the groups i.e. control and experimental groups.

3. Only following yogic activities were given for exercises:


Pranayama: i Bhramri, ii Ujjayi.

Shatkarmas: i Kapalbhati, ii Neoli.
4. The isometric exercises work out was also one of the delimitation of the study. These were:


4. The experimental period was of three months, for training simultaneously for two experimental groups.

SIGNIFICANCE OF THE STUDY:

1. The study may provide enough supportive evidences to reclaim yogic and ancient Gurukul culture in modern system of physical education or education.

2. The findings of this study would help the physical educationists to know the effects of yoga training on boys’ motor fitness.

3. It will also help in evaluation of the effect of isometric exercises for the development of motor fitness among the college going boys.
4. It will also help the concept of yoga and physical activities among the society especially in boys. It will help to serve as a method of living physically fit and to live active life style and healthy life.

5. This may also provide data for further researches in the field of exercises or therapy also.

6. An experimental study will be conducted to see the effects of yogic activities on self-discipline, brotherhood, hostility and national integration,

7. Specific effect of just one or two yogic activities will also be studied in relation to any particular problem or parameter.

8. Similar study will be conducted taking sample from sex different as of only Girls or taking mixed sample from any co-educational institution.

9. A comparative study between these yogic activities and some other physical exercises, like, gymnastic exercises will be taken to examine their respective efficacy.
DEFINITION OF TERMS USED

Various key terms were used but to avoid unnecessary repetition only references are provided here because all these terms are defined and explained in this present chapter. Please see these terms as under:

Yoga p. 4-7; Asana p. 40,47; Pranayama p.40,48; Shatkarma p.49-50; Isometric Exercise p. 52-53; Motor Fitness p. 58-59; Strength, p.61; Speed, p.62; Agility, p.64; Endurance, p. 62-63; Flexibility, p. 63 Balance, p. 64; Power, p. 65.

RATIONALE OF THE STUDY

Ancient Indian civilization was based upon Gurukul culture. Over all development like physical, psychological and spiritual was delivered along with the sense of high ethics in religious conductive environment. While thinking of fitness we must not limit only up to physical level. Psychological factors and level of consciousness have great bearing upon level of motor fitness.

Muscles do not act in isolation but do according to messages received from the nerves system. Messages or neural impulses come through neural pathways. So it is clear that a neuromuscular coordination is must. This mean efficient
communication between brain and muscles (limbs and organs) is prior requirement. Proper functioning of glands also much depends upon our mental state and emotional state. This in turn depends on our mastery over art of relaxation. As Singer has pointed out above that motor performance and fitness may depend on the following factors: (i) physical characteristics, (ii) motor abilities, (iii) sense of security, (iv) perceptual abilities, (v) cognition and emotional effects.

Yoga training is highly regarded to achieve all factors mentioned above from very ancient time but in lack of empirical evidences nothing can be claimed in this modern time of science and statistics. So the search of a holistic system and to compare that with another contemporary system of exercises to verify the claim of superiority among these systems, provide rationale basis to investigator for conducting present research work.