Science of Exercise: Ancient Indian Origin

Samiran Mondal

Abstract

**Background**: Many western literature on ancient exercise science were available. Unfortunately, ancient Indian contribution in this area was ignored.

**Aim**: The aim of this approach was to search ancient Indian literature on science of exercise.

**Method**: The researcher reviewed thoroughly complete Caraka Samhita (nearly ten thousand prose and verse) and the outcome was first time reported in this paper.

**Result**: More than one hundred and twenty slokes (aphorism) on exercise (vyayama) were discovered from Caraka Samhita. Oldest definition of exercise was found from Caraka Samhita, which was percolated from the world’s oldest record of medicine practice. Caraka Samhita has been divided into eight section and it was observed that in each section vyayama (exercise) was specially referred whenever needed. The good effect, bad effect, contraindication and feature of correct exercise were mentioned in Caraka Samhita. The season and time of vyayama has also been mentioned. Caraka Samhita, also the world’s oldest living evidence of exercise therapy literature prescribed twenty types of kaphaja (phlegm) diseases and many other diseases (obesity and diabetes etc.) can be cured or minimize the consequences through vyayama. According to Caraka Samhita, human is the combination of the body, mind and soul. This Samhita clearly suggested vyayama (exercise) for the body and yoga for mind and soul.

**Conclusion**: From the ancient time India was familiar with the science of exercise and its beneficial effect. It was forgotten due to local ignorance and western influence. The contribution of Caraka Samhita and other ancient Indian literature on the science of exercise should be incorporated in all the appropriate places as early as possible.

Introduction

The history of exercise physiology begins with contribution from ancient Greece and Rome. However, this approach has omitted the information from the ancient civilizations of India which flourished before and during the emergence of Mycenaen cultures. Ganorkar and Mandal reported briefly about medicine and physical exercise in ancient India. Dhammissara described the use of exercise prescribed in Ayurveda. It might be Prof. Tipton who first time recognized Susruta (Susruta Samhita), one of the ancient Indian medical practitioner and his contribution to the history of exercise physiology. Another classical text of Indian medicinal system, Caraka Samhita and its contribution to the science of exercise has not yet been recognized by the scientific community. The aim of this historical perspective is to acquaint the exercise science community with India’s and specially Caraka Samhita’s contributions in this field.

Ancient India and Literature

Historian and archeologist believe that Indian civilization existed earlier than 3300 BC. Excavation results indicated Hindu living in these time were focused on matters of personal hygiene, public health and sanitation. The excavations also included statues with positions that suggested the inhabitants were familiar with the practice of yoga.

In the Indian history the era of Vedas or Vedic period is very important, a range of dates is listed with 3000 BC to 1000 BC being frequently recorded. Rig-Veda the oldest literature in the world has been written in this time. Other three Vedas are Sam, Yajur and Atharva. Of the sacred texts of India, the Atharva Veda contains the most detailed information dealing with medicine, health and disease. Although all authorities agree it appeared after the Rigveda, uncertainty reigns as to the data of origination with 1000 BC being selected by the majority of authors. During the late Vedic period (1500-1000 BC) a number of Upaveda (supplement to the Vedas) like Dhanurveda, Ayurveda etc. were developed.

‘Ayus’ means ‘long and healthy life’ and ‘Veda’ means ‘science / knowledge’. Ayurveda (science of long and healthy life) is also called as Indian Medicinal System. According to Carana Vyuba, this is an upaveda of Rigveda. Most authentic available Ayurvedic literature are Caraka Samhita; Susruta Samhita and Astanga Hridayam. This great trio are recognized as Brahrtrayi. Both Caraka and Susruta, however, considered as an upaveda of the Atharva Veda. Of these three Caraka is considered to be the most authoritative.

Development of Ayurveda and Caraka Samhita

Brahma is considered to be the original propounder of Ayurveda. The order of transmission of the knowledge of Ayurveda is Brahma → Daksa Prajapati → Asvins → Indra → Bharadvaja → Atreya → Hunarvasu → Agnisvasta. Along with Aghnivasa, Bhala, Jatukarma, Parasara, Harita and Ksrapanii also studied Ayurveda from Atreya. In ancient India there is certainly in the existence of their sacred texts and of the samhitas associated with Atreya, the world’s oldest record of medical practice.

The term Atreya means the son or the disciple on the descendent of Atri. The reference available in the Caraka Samhita, it is clearly indicated that Atreya was the son of the sage Atri.
sage Atri is quoted often in the Rigveda and Atharvaveda as the seer of Vedic hymns. Thus the Agnivesa Samhita was perhaps written under the guidance of the sage Atreya, some time around 1000 BC. This is further substantiated by the composition which resembles that of Satapatha-Brahamana written almost at the same time. Atreya was also known as Punarvasu Atreya and Krsna Atreya. There were also many other Atreyas who were authors and teachers of medicine. One Atreya was associated with the University of Taxila and Jivaka, the physician of Lord Buddha, was his student. Another person by name Bhiksu Atreya was also a teacher of medicine.15

Agnivesa, on the advice of Atreya, his perceptor, compiled Ayurveda which was subsequently redacted by Caraka and Drdhabala. The original text of Agnivesa Samhita was composed perhaps 1000 years before Christ. It was redacted by Caraka during seventh century before Christ. In fourth century AD Drdhabala supplemented some slokes from other texts.15

Neither the text nor any external evidence provides any precise data about the time of Caraka. Absence of any Buddhist influence, maintenance of Brahminic style and the nature of the exposition are indicative of the pre-Buddhist origin of his work. It is likely that Caraka the redactor of the work, flourished in the 8th century BC. His place of residence is not known. As the very name Caraka indicates, he travelled from place to place preaching the science of medicine.15 Another contemporary Indian Medicinal Practitioner was Susruta, a historical figure during 600BC.10,12 His contribution towards exercise physiology elaborately and scholarly discussed.22

So from Atreya to Agnivesa and then Agnivesa to Caraka the knowledge of Ayurveda spreaded for the mankind. As Atreya Samhita was the oldest record of medical practice in the world,5,21 so, the definition exercise and application of exercise for positive health and therapy found in the Caraka Samhita was the oldest in the world. In Caraka Samhita one may find slokes (aphorism) on ‘Vyayama’ resemble with the term exercise. The present researcher reviewed15-20 thoroughly complete Caraka Samhita (nearly ten thousand prose and verse). This sacred text has been devided into eight section: Sutra Sthana; Nidana Sthana; Vimana Sthana; Sarira Sthana; Indriya Sthana, Cikitsa Sthana; Kalpa Sthana, Siddhi Sthana. It was observed that in each section vyayama (exercise) was specially referred whenever needed. From Caraka Samhita more than one hundred and twenty slokes (aphorism) on exercise (vyayama) were discovered and the outcome was first time reported in this paper.

**Caraka Samhita and its Commentary About Health and Exercise**

Ayurvedic books registered their views and interest about exercise (vyayama) for mankind. Vyayama (physical exercise) is derived from Vy (specific) + aa (particular) + Yam (control) + gham (by which it is done). So, Vyayama (exercise) means by which specific and particular control has been done in the body. Caraka Samhita described detail about exercise in the first section (Sutra Sthana) and in the chapter on ‘Non suppression of natural urges’. Exercise was defined as “Such a physical action which is desirable and is capable of bringing about bodily stability and strength is known as physical exercise. This has to be practiced in moderation.” (15, P. 151). This definition is very much modern and it might be the world’s first definition of exercise which was percolated from the world’s oldest record of medicine practice (Atreya Samhita). Caraka Samhita gave the idea of the maintenance of positive health where it include proper diet, sleep, rest, active habit, regular exercise etc (15, P. 587). It described body, mind and soul, these three are like a tripod; the human is sustained by their combination, they constitute the substratum for everything (15, P. 33). This Samhita clearly suggested vyayama (exercise) for the body and yoga for mind and soul (16, P. 345).

In Caraka Samhita, the features of correct exercise is stated as “Perspiration, enhanced respiration, lightness of the body, inhibition of the heart and such other organs of the body are indicative of the exercise being performed correctly.” It mentioned the good effect of exercise, “Physical exercise brings about lightness, ability to work, stability, resistance to discomfort and alleviation of impurities (dosas). It stimulates the power of digestion”. In the next slokes, Caraka Samhita indicated bad effect of excessive exercise, “Physical exercise in excess causes exertion, exhaustion, consumption, thirst, bleeding from different parts of the body, dyspnoea, cough, fever and vomiting.” It was aware about the contra-indication of exercise, “Exercise is contra-indicated for persons who are emaciated due to excessive sexual activity, weight lifting and by travelling on foot and for those who are in grip of anger, grief, fear, exhaustion, and for the children, for the old person and for persons having vatika constitution and profession of speaking too much. One should not do exercise while he is hungry and thirsty also (15, P. 152-153).

In India, one year has been divided into six seasons. The northward movement of sun and its act of dehydration brings about three seasons, beginning from late winter to summer: Sisira (late winter), Vasanta, (spring), Grisma (summer). The southward movement of sun and it acts of hydration give rise to the other three seasons beginning with rain to early winter: Varsa (rainy), Sarat (autumn), Hemata (early winter). It was suggested that in summer physical exercise is to be given up; in rainy season one should abstain from excessive exercise; in autumn swimming is beneficial because in this time water is spotlessly clear; at the advent of spring one should habitually resort to exercise (15, P. 138-140).

Caraka Samhita described importance of good built, “Persons having proportionate musculature and compactness of the body no doubt possess very strong sensory and motor organs and as such they are not overcome by the onslaught of diseases. They can stand hunger, thirst, the heat of the sun, cold and physical exercises. They can digest and assimilate properly” (15, P. 377-378). In another sloke it pointed out, “If strong individuals suffer from diseases of moderate nature, such diseases can be cured by physical exercise and exposure to sun and wind. It goes without saying that diseases of mild nature of these individuals can also be cured by the same devices” (15, P. 390).

**Caraka Samhita and its Commentary About Disease and Exercise**

Caraka Samhita reported that the cause of the diseases relating to both (mind and body) are three fold – wrong utilization, non utilization (hypokinetic) and excessive utilization (hyperkinetic) of time, mental faculties and objects of sense organs’ (15, P. 39). Caraka Samhita, also the world’s oldest living evidence of exercise therapy literature prescribed vyayama (exercise) for twenty types of kapha (phlegm) diseases and many other diseases to cure or minimize the consequences. They used exercise therapy for the following twenty varieties of diseases due to the variation of kapha (phlegm) : Trpti (anorexia nervosa); Tandra (drowsiness); Nidradhikya (excessive sleep);
Staininity (timidity); Gurugratata (heaviness of the body); Alasya (laziness); Mukhamadhurya (sweet taste in mouth); Mukhasarva (salivation); slesmodigirana (mucus expectation); Maladhiyka (excessive excretion of excreta); balasaṅga (loss of strength); Apakti (indigestion); Hṛdayapalepa (phlegm adhered in vicinity of heart); Kanthopalepa (phlegm adhered to throat); Dhāmaniprātikāya (hardening of vessels); Galāganda (goiter); Atīthānuyā (obesity); Sitajñātī (suppression of digestive power); Udāra (Urticaria); Svetavahāsata (pallor); Svetamātrānetra Varācstva (whiteness of urine, eye and faces) (15, P. 370-371).

Caraka Samhita mentioned two very common lifestyle diseases: diabetes mellitus and obesity. They observed that, “those who take in excess, heavy food, those who sleep too much and have sedentary habits; those who give up physical and mental exercises – may suffer from diabetes mellitus” (15, P. 327).

“Excessive corpulence (obesity) is caused by over intake, intake of heavy, sweet, cooling and unctuous food, want of physical exercise, day sleep, uninterrupted cheerfulness, lack of mental exercise” (15, P. 375). “For reducing over corpulence the following are the prescription: diets and drinks which can reduce fat; should indulge more and more in vigil, regular physical and mental exercise” (15, P. 379-380).

They cautioned that excessive exercise may create heart problem, external and internal abscesses, whereas lack of exercise may develop swelling, insomnia, etc. Exercise therapy may be useful for the disease of vomiting reflex, obstinate, urinary disorders, problem of bone marrow and semen. They also suggested along with exercise therapy, reducing (fasting) and nourishing (dieting) therapy, oleation, fomentation and massage therapy are important to cure the diseases.15

Here, in this paper mainly Caraka Samhita’s volume-11 was reported. Other five volumes16-20 also have many aphorism on exercise (vyāyama) and will be reported elsewhere.

Conclusion

History of exercise science have ignored ancient Indian literature and its contribution towards health and diseases. Ancient Ayurvedic literature, Caraka Samhita, a traditional text of the world’s oldest record of medical practice was thoroughly searched. Nearly ten thousand prose and verse reviewed from Caraka Samhita (Vol-1 to 6). More than one hundred and twenty aphorism (slokas) on exercise (vyāyama) were discovered and might be first time reported in the scientific world. Definition of exercise; good and bad effect; indication and contraindication; time and season of exercise were reported. Caraka Samhita, also the world oldest living evidence of exercise therapy literature prescribed exercises to cure and minimize consequences for different types of diseases, and life style diseases (diabetes, obesity etc.). According to Caraka Samhita, human is the combination of the body, mind and soul. It clearly suggested vyāyama (exercise) for the body and yoga for the mind and soul. So, the Yogavāyāma is for the sustained development of total human. Finally, from the ancient time India was very much familiar with the benefits of exercise, however it was ignored. In the Origin of Science of Exercise, ancient Indian and specially Caraka Samhita’s contribution should be incorporated in all the appropriate places.

References