CHAPTER I

INTRODUCTION

Early man was a hunter-gatherer. He led a nomadic life and was always exposed to the vagaries of nature. In the very process of making a living or surviving he had to function as an integrated whole pitting his mental and physical skills against the harsh environment. Slowly, he changed his style of living and started leading a more settled life. This happened about 6000 to 7000 years ago. Since then he has become increasingly dependent on his mental faculties. His physical endowments are slowly starting to gather dust. The more physically difficult tasks are being simplified by his mental prowess. This process of transition has had its advantages as well as disadvantages. The highly developed mental apparatus has started dwelling due to reduced physical exercise. This is a great advantage to disadvantage has already been mentioned briefly. Along with the process of social development some of the methods of entertainment man has developed are dancing, games and sports.

Presently, the study of these disciplines is covered in Physical Education. The very first act of a healthy human being on arriving in this world is to cry vigorously. This cry sets into motion the very process of life. It is the evidence of the inbuilt
mechanism of exercising the body. Later in life the infant finds time to play with an individual or even alone. Gradually this impulse is suppressed by the pressure of living/survival. It is the job of Physical Education discipline to systematically replace the impulse in its proper place. Physical Education has individual as well as social goals. A healthy individual builds a healthy society and vice-versa.

This is quite akin to Surplus Energy Theory. The interactive play develops qualities as cooperation, sportsmanship, healthy competition, leadership, etc.

It is a point to ponder whether the present style of competitive sports and games has promoted a really becoming an unhealthy trend going against the very objectives of Physical Education. Sportsmanship to indulge in drug abuse and other malpractice in the name of competition with the sole aim of winning the top berth is a glaring evidence of the dark phase in the history of Physical Education.

Basket Ball is a cheap sport with less financial investment and land area required. From this consideration it is being enthusiastically promoted in India. However, it is an a en sport and does not reflect the values, attitudes and personality of the Indian society.
Robert E. Gensemer in his book Physical Education: Perspectives: Inquiry: Application, states that, "Research is often regarded as a force for change and it clearly has had that affect in Physical Education. The scientific movement has accrued a flood of technological information that points to new directions and illuminates established values the major effect has been to infuse the field with a spirit of enquiry. "Thinking" is not limited to the subject realm, for research has provided the objective tools for discovery."

Traditional beliefs had long persisted; they became established, were repeated, and claimed a long line of believers. But now a massive switch of attitude, the profession has taken on a penchant for inquiring into every facet of human function. As a result, some older beliefs have been put aside, while others have taken on expanded dimensions and raw considerations have surfaced."


Further, he has mentioned ten misconceptions into which the results of research studies have given new insights.

People concluded that skill was a general trait that some people were "motor morons" predetermined for a life of incurable in coordination. On investigation (McCoy, 1940; Brace, 1946; Henry 1958; Gilbert 1988) it was found that movement skills are many dimensional, and that ability is not predetermined at birth, but can be markedly improved by proper training and instruction.

Gillbert (1988) has discovered that sports as such does not build character. The effects of sports can be negated by too great an emphasis on winning, punishment for losing, and for role modeling from cheating, substance abuse and violence.

---


Research shows (Coakley 1986) that winning teams have more of a "business-like" demeanor than one of close friendship. It's even possible that a certain degree of incompatibility may lead to increased effectiveness in performance.

Although research on this is scarce, some indication is there on the contrary the outcomes could be generation of unsportsman like conduct and antisocial aggressiveness, particularly in those sports that encourage violence (Stallman 1977; Eitzen and Wage 1986).

Research has demonstrated that sports participation has the same effect on the vitality of women as man (Anderson et al. 1981) and that any difference in physiological functions...

---


between men and women are now related to cultural and social restrictions than to limits in capacity (Willmore 1979). Furthermore a trend has emerged where by participation in sports is beginning to be seen as a positive trait by both male and females in their attitudes toward the opposite sex. (Vickers, Lashak and Taerum: 1980).

But a related myth that has tended to persists is that at a high level of competition, women display less confidence in their abilities than men and also show more common signs of "fear of success" which means that they are unable to handle the pressure of succeeding. Such beliefs are now being contradicted by findings that show no differences in confidence level between the sexes, regardless of intensity of competition (Lirgg and Feltz 1989).

---


At one time the widespread misconception that high protein diets were an absolute necessity for athletes prevailed. This led to large amounts of red meat and milk, along with special protein supplements. Although some questions still remain on this issue, a well-balanced diet may provide satisfactory nutrients for athletic performance (Hamilton, Whitney and Saizer; 1988).

A relationship does exist between exercise and mental health, however it may be, defined. But there is an implicit assumption that exercise produces qualities of a sound mind.

May be it does. Yet, we do not know whether the relation is biochemical, neurological, social or whatever (Sonsttoem and Morgan, 1989). How one affects the other has not been determined. Although, the apparent relationship between mind and body remains unquestioned (Gauvin, 1989).

---


Common recommendations are for persons engaging in work out to stretch their muscles before and after the work out to reduce the potential for muscle pulls, cramps or other injuries. Intuition alone seems to support this logic. Surprisingly, however little evidence supports the belief that stretching either before, during or after a workout reduces the workout injury (Corellius, Hageman and Jackson 1988)\(^6\).

Further more stretching does not appear to alleviate muscle soreness that often occurs after exercise (Burcke et all)\(^7\).

Osteoarthritis is the most common joint disease in United States. Almost everyone has some pathologic signs once by the age 40, and the disease can be identified in the knees of 35% of the population by age 30. Its cause is unknown. But it has been thought to come as a result of excessive impact loading. Activity in the weight bearing joints such as from a long time practice of regular jogging. So that the original thought was that the joggers were "spoiling their knees to save their heart". But new evidence


shows no reason to believe that jogging causes Osteoarthritis (Pascale and Grana 1989). In fact, running may actually show the functional aspects of skeletal aging that are associated with disease (Eichner, 1989). One of the most fundamental beliefs is that performance of intense exercise is limited by the inability of the heart and lungs to supply O₂ for the energy demands of the active muscles. As a result, almost all expositions of the physiological adaptations to exercise cite increased Oxygen diffusion into blood stream and better delivery to the muscles as the major factor that allow for training affects to take place. But, recent evidence now accumulating shows that prolonged muscular contraction may be limited by other factors that have not characteristically been considered, particularly the way certain nutrients and chemical (especially calcium) are utilized during contraction and structural

---


limitations of contractile elements in the muscle themselves (Noakes 1988)²⁰. I have mentioned the above points to highlight the role of research in Physical Education. Not all the conclusions drawn may be correct but what is more important is to change stand on the table and see from a different angle.

Sport at whatever level and no matter how organised, occur in a social context, with social parameters and processes at work in every event. It is a reflection of the society in which it exists and is capable of influencing societal values. Because sport is a prominent highly influence warrants study just as any other social factor does. The objective is to describe the position that sport holds in a society to determine if any malpractice exists and to examine the socializing effects that sport has on its participants²¹.

The above intense quotation from Gensemer's book should be reflected upon in content of Basketball in India.


The game of Basketball was invented in 1891 by Dr. James Naismith. The need for an indoor game arose for giving recreation to the army personnel. It was also thought that regular playing would keep them physically fit. Basketball is a physically taxing game; it requires lots of energy. It demands explosive strength.

Numerous factors must be studied to understand a game in context of a society. Of this my study is limited to physiological factors that are greatly influenced by psychological, sociological, Physical and Diet and Nutritional factors.

According to the statistics, 75% of Indian women suffer from undernutrition. This being the transitional phase of the girls toward maturation and with the stresses of the family or society the game of Basketball is further a sever stress on the girls. The significance of the study is multiplied by this observation.

Setting aside my doubts, the present study is undertaken with a purpose to understand the physiological characteristics of the Junior Women Basketball players which directly have an influence on the playing ability.

Statement of the Problem

The purpose of the present study was to assess the Selected Physiological Characteristics of Junior Women Basketball Players.
Delimitations

The study was delimited to junior women basketball players of top four winning teams at the Junior National Championship held at Satara, Maharashtra May 1994.

The study was restricted to seven physiological characteristics.

The study was also delimited to the use of the average of three judges' ratings of playing ability as the criterion.

Limitations

The subjects selected were junior women basketball players thus their physiological development will be highly dependent upon the training schedule and diet.

The non availability of sophisticated instruments was considered as a limitation of the study.

Although all attempts were made to obtain an unbiased estimate of playing ability by averaging three judges' ratings errors due to lack of objectivity that might have occurred are recognised as a possible limitation to the findings of this study.

Hypothesis

On the basis of the available literature research findings it was hypothesized that there will be no significant relationship between physiological characteristics and the playing ability scores of the junior women basketball players.
**Definition and Explanation of Terms**

**Adenosine diphosphate**

One of the chemicals that serves as the immediate source of chemical energy for most of the energy-consuming reactions of the body, especially for muscle contraction. ATP is split into adenosine diphosphate and phosphate to produce energy.

**Anaerobic Power**

The maximal rate at which energy can be produced or work can be performed without a significant contribution of aerobic energy production.

**Cardio-Respiratory Endurance**

It is characterized by moderate contractions of large muscle groups for relatively long periods of time, during which maximal adjustments of the circulatory-respiratory system to the activity are necessary, as in distance running and swimming.

**Significance of the Study**

The study may help to know the physiological characteristics of the women basketball players.
It may also help us to get an idea of the present performance of the players.

The study may be helpful to compare with the other players, of the same level.

May help to develop simple statistics in selecting the players.

Add to the knowledge of exercise physiology.

Body composition was estimated by skinfolds and bioelectrical impedance was by the Heath-Carter method. Translated versions of Profile of Mood States and State-Trait Anxiety were used.

The Kuwaiti Team exhibited moderately high aerobic (51.0 ml/kg min⁻¹) and anaerobic (119 ± 10 kg.m/sec²) power, both values being significantly higher than college norms. Relative