

“A CRITICAL STUDY OF THE HEALTH & PHYSICAL EDUCATION CURRICULUM AT SENIOR SECONDARY STAGE IN SCHOOLS OF DELHI”

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ABSTRACT

Schools have long been viewed as important settings for promoting the health and social development of children. In many countries, the first schools were often established by churches, charities and other Non Government Organisations (NGOs), to socialize and take care of the children whose parents had moved into cities during industrialization. Later, health education was introduced in schools, driven primarily by the medical fraternity with exhortations about the dangers of various diseases. The school was, and still is, seen by many as a site for health messages, materials, and prevention programs. Consequently, we have seen a wide variety of issue-specific and narrowly framed approaches to school health promotion come, stay or go across the educational landscape. Active schools (designed to increase physical activity), drug-free schools (designed to prevent drug use in, near, and beyond school), and safe schools (designed to prevent intentional and unintentional physical and psychological harm) are just three examples of approaches developed in response to specific societal health issues. Present study is a content analysis of the health and physical education textbooks of senior secondary class's i. e class XI and XII in schools of Delhi. Unit wise analysis of both the textbooks has been done. The main findings of the analysis are that the topic deal in the textbook are related to health and hygiene well but there is a need to discuss programmes and schemes associated with the topics such as yoga etc. One of the most important issues HIV/AIDS and Drug abuse have not been discussed in appropriate details in the books. Methodology of the study is Content Analysis.

KEYWORDS: Health and Physical Education- Physical Education Refers to the Instruction of Physical Activities and Games. Specifically, it is used to denote the Courses in School in Which Students Receive Instruction and Practice in Physical Exercise in Order to Promote Good Health. Curriculum - The Term Curriculum Refers to the Lessons and Academic Content Taught in a School or in a Specific Course or Program.

INTRODUCTION

Schools have long been viewed as important settings for promoting the health and social development of children. In many countries, the first schools were often established by churches, charities and other Non Government Organisations (NGOs), to socialize and take care of the children whose parents had moved into cities during industrialization. Later, health education was introduced in schools, driven primarily by the medical fraternity with exhortations about the dangers of various diseases. The school was, and still is, seen by many as a site for health messages, materials, and prevention programs. Consequently, we have seen a wide variety of issue-specific and narrowly framed approaches to school health promotion come, stay or go across the educational landscape. Active schools (designed to increase physical activity), drug-free schools (designed to prevent drug use in, near, and beyond school), and safe schools (designed to prevent intentional and unintentional physical and psychological harm) are just three examples of approaches developed in response to

specific societal health issues. Interestingly, these health driven models developed separately from models derived from the human services sector such as community schools (which utilize the school building, during and after school hours, and community agencies collectively to benefit principally students, but also the broader community) or full-service schools (which provide a wide range of medical, dental, psychological, social, and other services within or very near the school). The education sector also developed their own holistic models, including effective schools 107 (with: a safe and orderly environment; climate of high expectations for success; effective instructional leadership; clear and focused mission, opportunity to learn and student time on task; frequent monitoring of student progress; and home school relations) and learning communities which encourage teachers and local community groups collectively to design and adapt their teaching methods and goals to address the unique needs of students and stakeholders in their own communities).

Interestingly, the health driven models developed separately from models derived in the education sector such as community schools and full service schools. These were terms applied to a whole of school approach in addressing educational actions to build stronger links with the community, extend the services (e.g. psychological and health) available to students and staff, create supportive social and physical environments and extend the curriculum beyond the classroom. It is not surprising that those working within schools feel pressured by the expectations placed on them by of these congruent but sometimes competing frameworks, particularly where they see similarities or differences in the different models.

Another approach, which combined teaching and learning with the delivery of preventive health services and measures to maintain a healthy physical and social environment in the school, emerged in Europe and North America in the 1980s and 1990s (Allen worth & Kolbe, 1987; Young & Williams, 1989). This multifaceted approach gained impetus from the emerging, concepts and principles about health promotion that were reflected in the Ottawa Charter (WHO, 1984; WHO, 1986).

Historically health education in schools tended to be based on a topic approach within the classroom, which meant working separately on issues such as smoking, alcohol use, physical activity, healthy eating, sexuality and relationships, safety, mental health, etcetera. This is still reflected today in some of the initiatives in schools on, for example, obesity or substance use. This can be problematic or ineffective as such approaches are sometimes based on assumptions relating to human behaviour, which are difficult to justify and not supported by evidence. First of all it is known that all the 'topics' interact and are not separate at the behavioural level. For example, teenage sexual activity can be linked to alcohol/ drug use. Second, there is a risk that health will be seen solely at the level of the individual and his or her relationship to the topic being explored, when in fact the social environment is very often vital in determining behaviour. Third, there is a tendency within the topic approach to assume that human behaviour is completely based on knowledge and reasoning, and treats the important dimension of the emotions as a separate topic, when in fact mental and emotional aspects are integral to all the health issues.

This is not to say that a topic approach has no place in school health education or in the promotion of health in schools. It is an argument for making sure that if a topic is being explored, that possible connections are made to other topics in the classroom and in the wider life of the school. This can enable students to consider the issue in the reality of the social and environmental contexts of their lives. There are uniting themes that can cut across topics at a theoretical and pedagogical level. The life skills and competencies, which we wish young people to develop in the context of health promoting schools, can be important and common to all health topics. For example, the skill of being assertive or having

the ability to critically reflect on their role as individuals in a complex society with conflicting values about health.

SUBJECT AREA

The curriculum and syllabus for this subject has to adopt a ‘need based’ approach to a child’s development. This is the framework that will guide the inclusion of physical, psycho-social and mental aspects that need to be Health Promotion in Schools through Educational Activities 9 addressed at different levels of schooling. A basic understanding of the concerns need to be delineated but this subject has an applied dimension that needs strengthening through experiential learning, acquiring skills to recognise and cope with demands, expectations and responsibilities of daily living, the collective responsibilities for health and community living also need to be emphasised. National

Curriculum Framework 2005 emphasises that:

- Recognizing this subject as a core subject, Health and Physical Education must continue to be a compulsory subject from the primary to the secondary stages and as an optional subject at higher secondary stage. However, it needs to be given equal status with other subjects, a status that is not being given at present.
- The ‘need based approach’ could guide the dimensions of physical, psycho-social and mental aspects that need to be included at different levels of schooling. A basic understanding of the concerns is necessary, but the more important dimension is that of experience and development of health, skills and physical well being through practical engagements with play, exercises, sports, and practices of personal and community hygiene.
- It should be possible to organize the utilization of the school space at the block level at least, for a special sports programme both before school hours and after school hours to enable children with special talent for sports to go there for special training, and during vacation time. It should also be possible to develop these sports facilities so that many more children can avail of these for leisure time sports activities and engage in team games such as basketball, throw ball, volleyball, and local forms of sports.
- It should be given equal status with other subjects and the essential physical space and equipment need to be available in every school. Doctors and medical personnel should visit schools regularly.
- School health programme must be an integral part of Health and Physical Education.
- Growing realization of adolescents’ health needs in an age appropriate context and specific intervention in adolescents’ reproductive and sexual health concerns. Provide children opportunities to construct knowledge and acquire Life Skills under Health and Physical Education, the following broad themes are identified:
- We and our environment • Human body; physical fitness and health
- Food and nutrition
- Social health and relationships with others
- Safety and security
- Consumer health; vocational and leadership One of the primary way of transaction in schools is through curriculum and the curricular activities. Here an attempt is being done to analyse the Health and Physical Education textbook of classes XI and XII with respect to health and hygiene perspective.

Content Analysis of class XI and class XII Health and Physical Education Textbook

Class XI Textbook

The textbook for Health & Physical Education for class XI is written by Dr. V.K Sharma Prof. Dept of Physical Education DAV College, Kaithal and is being published by New Saraswati House pvt. Ltd.

The Textbook contains total no. Of 11 unit which are as follows

Unit wise Content analysis of the textbook is being done here.

Unit I Changing Trends & Career in Physical Education

In this unit author has defined the meaning of physical education and Aim & objectives of teaching this subject as a part of curriculum. A brief history regarding the development of physical education post independence in India is discussed. Concepts like Integrated Physical Education and Adapted Physical Education are explained. Unit also covers the topic of special Olympic Bharat and tells the readers about the various career prospects in physical education.

Educational Implications

Aims and Objectives of physical education clearly explain the need for introducing Health & Physical Education as subject in the curriculum.

The brief history about the development of physical Education as a subject post independence encourages the learners to read and develop intent in the subject.

The topics like Integrated Physical Education and Adapted Physical Education increases the awareness level in the learners. Integrated Physical Education is a comprehensive concept. It's not only limited to physical activities, games and sports but has become a complete discipline. Now it has various sub disciplines such as sports sociology, sports biomechanics, sports medicine, sports pedagogy, exercise physiology, sports psychology, sports philosophy and sports management etc. Integrated physical Education provides opportunities for students to see new relationships to transfer what they have learnt from one setting to the next and to reinforce learning in various ways.

Adapted Physical Education is the modified Physical Education programme for children with various types of disabilities. Some of the special physical education for disabled children are corrective physical education, Remedial physical education, Physical therapy, corrective therapy, develop mental, physical education & Individual physical education.

Adapted physical education is a sub discipline of physical education. It is an individualised programme developed for students who require a specially designed programme of physical education.

Unit 2 Physical Fitness Wellness and Lifestyle

Unit 2 comprises of the topics like learning and importance of physical fitness, wellness and lifestyle components of physical fitness, components of wellness. Health Threats and their prevention through lifestyle change and components of positive lifestyle.

Educational Implications

Physical fitness is the ability to function effectively and efficiently to enjoy leisure, to be healthy, to resist disease and to cope with emergency situation. Physical fitness varies according to the nature of work, size and shape of the body, age and sex.

The quality or state of being called healthy is called wellness.

Lifestyle is a way a person leads his/her life. It includes the pattern of social relation consumption, entertainment and dress. Lifestyle is experienced in activities, attitudes, interviews, opinions and values.

Various components of Physical fitness are

- Strength which includes Dynamic:- maximum, exploring and strength endurance; static strength
- Speed and
- Endurance
- Flexibility
- Coordinative abilities

Various Components of wellness are physical, social, emotional, spiritual, Nutritional, financial Intellectual and Environment wellness.

Through Regular physical Exercise, healthy eating habits, maintaining a healthy weight, limit TV watching, quit smoking, sufficient sleep, and limiting the amount of alcohol we can prevent Health threats and create a positive lifestyle.

Every teacher and students should have knowledge about these parameters of physical fitness and wellness and should work upon these.

Unit 3 Olympic Movements

This unit deals in detail about Olympic the history, rules for competition, opening ceremony of Games, Awards, Modern Olympics, Olympic Motto, Olympic Flag, Olympic Flame, Olympic Awards, Olympic Oath, Opening and closing ceremony of Olympic games.

Olympic symbol Ideas, objective of Olympics. Development of values through Olympic, International Olympic committee and its function. Indian association of Olympic, Dronacharya Award, Arjuna Award, Rajiv Gandhi Khel Ratna Award. Organisational set-up of CBSE sports and Chahcha Nehru sports award. Paralympic movement, Educational Implications.

Indian Olympic Association

IOA was established in 1927. Sir Dorabji Tata & Dr Noehren became the founder President and Secretary General. In the Olympic games of 1928 which were held in Amsterdam, the Indian Hockey team was sent to Olympics first time and it secured Gold Medal. The objectives of Indian Olympic Association are the development and promotion of the Olympic movement and Promotion and encouragement of the physical, moral and cultural education of the young people of the nation.

There are various awards in India in the field of sports like the Dronacharya Award which is given to those coaches who impart coaching temporarily or permanently to the team or players. On the basis of certain criteria

Arjuna Award is the supreme honour which is awarded to sportsperson by the Government of India. This award is given to such person who achieves extraordinary position during the year & who has been giving extraordinary performance during the last three years.

Rajiv Gandhi Khel Ratna Award is presented for the spectacular and most outstanding performance in the field of sports to the sports person in a year. Apart from the national Awards CBSE Sports and Chacha Nehru sports award are given at Central, Zonal and school level.

Paralympic movement – the Paralympic Games are the world’s largest sporting event for the people with physical, visual and intellectual disabilities.

This unit is more concerned about sports and its history in India the Health components covered are less. But Every Indian should have this knowledge about sports.

Unit 4 YOGA

This Unit comprises of the topics like meaning and importance of Yoga. Yoga as Indian heritage, elements of Yoga, Asanas, Pranayam, Meditation and Yogic Kriyas. Prevention and Management of common lifestyle Diseases: Obesity, Asthma, Diabetes, Hypertension, and Back pain.

Educational Implications

Every Child in School should be give this knowledge about sports, all these topics should be discussed both theoretically and practically in schools.

Yoga is derived from the Sanskrit word “Yuj” in verb form which means to unite or to join. It is concerned with the union of the individual soul with the Absolute soul.

Yoga is very important for Physical purity, curing and preventing Diseases, Reducing Mental stress and tension, for beautification of body. It provides relaxation, spiritual development, increases flexibility and reduces obesity .Yoga Improves health and enhances moral and ethical Values.

The basic elements of Yoga Are 1. Yama, 2. Niyama, 3.Asana, 4.Prayanama, 5.Prathana, 6. Dharma, 7. Dhyana, 8. Samadhi.

In Asanas body is kept in various positions in such a way that the activities of organs and glands of body become more efficient and finally improves the health of mind and body.

Pranayam means the control or regulation of prana. Meditation or Dhyana – according to Patanjali “The Concentration of Chitta on an impure without any divergence is called dhyana.

There are various Physiological benefits of Asanas and Pranayamas:

- Bones become Strong
- Muscles become strong

- Circulation of Blood becomes normal
- Respiratory organs become efficient
- Digestive System becomes efficient
- Nervous System is calmed and strengthened
- Glandular Activity is stimulated and regulated properly

- Immune system is strengthened

Physiological Benefits of Pranayama:

- Improves the blood supply
- Improves elimination of waste products
- Lungs become Strong
- Purifies Blood
- Reduces Stress and Tension
- Strengthen Diaphragm and mucus
- Improves Immunity

Students should be taught about all these benefits along with the practical application i.e. during Yoga Sessions in the school.

This unit also discusses major diseases their causes and prevention methods. In today's lifestyle every second person is suffering from one or the other diseases so the students should be aware about the causes of these diseases and methods of prevention.

Obesity- Method to know Obesity is BMI – Body Mass index.

Body Mass Index = $\text{Weight in Kg} / (\text{Height in m})^2$

By Comparing your BMI with the WHO criteria you can come to know about your category.

There are of types of preventive measures of Obesity:

Exercise Related

- Regular Physical Exercise
- Play
- Weight Training Exercise
- Resistance Exercise
- Yogic Exercise
- Diet Related

- Avoid Fat
- Avoid Junk Food
- Avoid Overeating
- Avoid rich carbohydrates
- Take low Calorie food
- Avoid alcohol, Smoking and drugs

Asthma – Asthma is a disease of lungs in which the airways become blocked or narrowed causing breathing difficulty .Asthma can be prevented and managed by avoiding triggers and allergens, and taking medications as prescribed . One should know what to do in emergency situations.

Diabetes: Diabetes is a disease that causes sugar to build up in our blood instead o being used by the cells in our bodies. Type II Diabetes can be prevented by laying stress on the following points:

- Regular Exercise
- Maintain a healthy Weight
- Avoid Rich Carbohydrate food
- Reduce the intake of saturated Fat

Lifestyle Changes can be helpful in the management of diabetes:

- Eat balanced Diet
- Regular Exercise
- Maintain healthy weight
- Manage Stress
- Take proper sleep and medicines regularly

Back Pain- originates usually from the bones, joints, muscles and nerves .Back Pain can be prevented by doing regular exercise, maintaining appropriate body weight. We should try to be in proper sitting and standing posture to prevent Back Pain. One should avoid lifting heavy weight, refrain from strenuous activities, and move and lift the objects properly.

Back Pain can be managed using Heat Therapy, cold compression Therapy, Massage, Medication, Physical Exercise and Surgery in some rare cases

Unit 5 DOPING

This unit comprises of concept and clarification of doping. Prohibited substances, Side effects of Prohibited substances, Ergogenic Aids and doping in sports and procedures for controlling Doping

Educational Implications

Doping is the use of performance enhancing substances or methods by athletes to gain an advantage over their competitors. In fact, It is very clear that doping is not only using a prohibited substance or method to enhance the sports performance but to break any one or more anti doping rules is also included under doping.

Doping is classified as:

- Performance Enhancing Substances
- Physical Methods

Stimulants, Anabolic Steroids, Peptide Hormones, Beta 2- agonists narcotics etc are some of the chemical substances to enhance performance. Apart from these there are physical methods of doping as well such as Blood Doping i.e. to increase one's red blood cells count and Gene doping i.e. the manipulation of cells or genes to enhance Body's sports performance.

Students should be taught about all these substances and methods which are illegal prohibited and banned for use in sports. The harmful effects of all these substances on the health of the individual should also be discussed in details in the class.

Ergogenic Aids are substances, foods or training methods that enhance energy production, use r recovery and provide athletes with a competitive edge. These include certain performance enhancing drugs, physiological aids, mechanical aids, nutrition aids, pharmacological aids and psychological aids. Safe Ergogenic aids are Proper Nutrition, Carbohydrate loading and stress management. Harmful Ergogenic aids are blood doping and human growth hormone.

UNIT 6 Physical Activity Environments

This unit deals with the topics like physical activity and its types. Concept and need of sports environment, Essential Elements of positive sports environment, Principles of physical activity environment, Components of health related fitness, behaviour change technique for physical activity and exercise guidelines at different stages of growth.

Educational Implications

Physical Activity can be defined as any movement of the body that requires energy expenditure. There are various types of physical activities:

- Lifestyle physical Activities
- Vigorous Physical Activities
- Muscle Strengthening Physical activities
- Flexibility Enhancing Physical Activities.

Sports Environment is the condition and circumstances in which sportspersons perform or indulge in sports activities. There are two types of sports environment physical and social.

Proper Sports Environment is needed for sports and sportspersons for raising the standard of sports, for proper growth and development, for avoiding physical health risks, for avoiding sports injuries, for avoiding mental health risks

and for enhancing mass participation.

Essential elements of positive sports Environment are – sports stadium, Playground, sports equipments, attitude, and behaviour of officials, attitude and behaviour of parents and player's .Drug, tobacco and alcohol free environment.

Health Related fitness students as well teachers should be given sessions regarding health related fitness in schools.

- Cardiovascular Endurance is the physical ability of an individual to maintain aerobic exercise for prolonged periods of time.
- Muscular Strength - It is the amount of force the muscle or a group of muscles can exert against resistance for short duration such as in anaerobic activities.
- Muscular Endurance- It is the ability of a muscle or a group of muscle to perform repeated muscular contraction against resistance for an extended or longer duration of time.
- Flexibility- range of movements of joints
- Body composition – it is the percentage of lean body mass i.e. bones, tendons, muscles, water lingments and organs etc in composition to body fat.

Unit 7 Test and Measurement in Sports

This unit deals with the meaning of test and measurement and importance of test and measurement in sports. BMI and waist Hip ratio < Body types and various types of measurements.

Educational Implications

Test is a specific tool, procedure or technique used to elicit a response from the sportsperson in order to gain information to be used as a basis for appraisal of the quantity or quality of elements such as fitness, skill , knowledge and values.

Measurement refers to the process of administrating a test to obtain quantitative data.

Test and measurement are important aspects of all the programmes of physical education and sports. Test and measurement are important for getting knowledge about the progress for effective planning, for knowing abilities and capacities, for discovering the needs of participants, for giving motivation, for classifying the sportspersons, for knowing achievements in future and for research and experimentation.

Body Mass Index is also known as Quelet Index and it is defined as the individual body weight divided by the square of his height.

Waist hip ratio is defined as the measurement of waist circumference divided by hip circumference.

Along with this information students are explained the textbook about different classification of individual according to body types by different experts.

Every individual should know how to calculate his/ her BMI and Waist hip ratio and then work out physically in order to remain healthy. Anthropometric measurement of height, weight, arm and leg length, waist circumference and skin

fold etc are very significant indicators of health.

Unit 8 Fundamentals of Anatomy and Physiology

In this unit basic human anatomy and physiology has been discussed. Skeleton system of human beings and its functions are discussed. Different types of muscles and their function in human body are described.. Structure and function of respiratory system, mechanism of respiration are explained in this unit. Circulatory system is also given in detail in this unit.

Educational Implications

Anatomy is the study of the shape and structure of the body of organisms. Human physiology is the study of all the systems of human body and their mutual relationships.

Anatomy and physiology are important in physical and health education as:

- Anatomy provides the knowledge of structure of various organs.
- Physiology provides the knowledge about the function of various organs.
- Helpful in the prevention of sports injury.
- Helpful in the process of rehabilitation.
- Helpful in selection of sports.
- Helpful in preparation of training programmes.
- Helpful in providing knowledge about the chemical changes occur during exercise.
- Helpful to know the anatomical and physiological differences among males and females.
- Helpful in providing first aid to sports person
- Helpful in physical fitness development
- Helpful in sports management.
- Helpful in providing knowledge of environmental effects on health of sports person and individuals in general.

Study of human body its systems and their functions in details help the sports person and laymen to understand the importance of environment and exercise on health. If a person has indebt knowledge about the functioning of body then he/she can take better care of it in terms of doing exercise, taking rest, posture, first aid in case of any emergency.

One important concept discussed here is oxygen Debt which means when the demand for oxygen in the body is greater than the supply it is called oxygen debt. This happens when we do vigorous exercise or activity, we feel a discomfort. We feel some problem in inhalation. But if we continue the discomfort slowly disappears. This phenomenon of recovery at early stage is known as Second Wind.

Unit 9 Biomechanics and Sports

This unit deals with the relationship of Biomechanics with physical education and sports. Newton’s laws and their application. Equilibrium, dynamic, static and centre for gravity and their applications are discussed in this chapter..

Different types of forces and their application are explained in the unit.

Educational Implications

Biomechanics is the sub discipline of physical education. Biomechanics applies the laws of mechanics and physics to study the bodily movements and the causes of movements both internally and externally.

Biomechanics helps in improving technique. Helps in improving Equipments. It enhances performance by utilizing mechanical principles to improve an individual's techniques, the equipment he uses, and to modify the specific training method. It helps in understanding human body, preventing injuries, improving physical training and helps in the teaching learning process.

Equilibrium – when all the forces acting on the body are counter balanced by equal and opposite forces, so that the sum of all the forces equals zero it is called the state of equilibrium.

The body's ability to maintain stability or balance is governed by various principles of centre of gravity and base of support. This knowledge of centripetal and centrifugal forces helps the sports person, cyclist and drivers in maintaining balance of their body.

Unit 10 Psychology and Sports

This unit deals with the importance of psychology in physical education. Difference between growth and development. Adolescence and problems associated with this period, laws of learning and their role in health and physical sciences.

Sports physiology deals with the study of impact of exercises on human body, fitness, sports, training, fatigue, and energy levels for performance. Sports psychology is the scientific study of persons and their behaviours in sports context and the practical application of that knowledge.

Educational Implications

Sports psychology is very important in _

- Enhancement of physiological capacities
- Psychological readiness to learn the motor skills.
- Understanding human behavior
- Controlling emotions
- Preparing sports persons psychologically for competitions
- Solving Emotional problems.

So, this knowledge is important for Physical development of not only the sports person but of a child in general also.

For the proper Growth and Development of the child. The teachers as well as parents must have sound knowledge about the concepts of growth and development.

Growth is a quantitative measure whereas development is qualitative. Growth is used in physical terms it is related to an individual's size, height, weight. Whereas development is related to all types of changes in behaviour thinking, structure, mind, etc. Physical Growth of a person stops after a certain age but the process of development continues throughout the life.

Adolescence is another topic discussed here. It is a period of fast growth and development. It is the age of 12-18 years. During this period physical, physiological, mental, social, and emotional changes take place. Because of these changes children of this age face various problems. With the knowledge of psychology parents and teachers can play a very vital role in dealing with the problem of adolescence through education for motor development, psychology, sex education, vocational guidance, social guidance and providing suitable environment.

Learning is a change in behaviour through training or experience. According to psychology there are various laws of learning.

- Law of Readiness- A teacher or instructor must have a complete knowledge of student's physical and mental readiness for physical exercises and sports. Some students may be physically ready but not mentally whereas some are mentally prepared but not physically. Students must be motivated before imparting training.
- Law of Effect- If the effort in doing any work is enjoyable and pleasant the individual tries to learn that activity quickly. This law is directly related to success and failure. Hence in beginning the activities which bring unpleasant and dissatisfying results should be taught with love and care.
- Law of exercise- According to this law when a modifiable connection is made frequently between a situation and a response the strength of that connection is increased but when modifiable connection is not made between a situation the strength of connection is decreased. This law is applicable in the field of sports and games. Students need practice and exercise to learn any physical activity. Regular practice is very important.

So, knowledge and application of these laws are very important in physical training, Yoga sessions and developing other health habits through various programmes.

Unit11 Training in Sports

This unit deals with the topic of sports training, its principles, concept of warming up and limbering down. Load adaptation and recovery skill, Technique and style overload.

Educational Implications

Sports Training is a specialised process of all round physical conditioning aimed at the preparation of sports person for performance in games and sports. The process of sports training does not depend only on successful training practice but also depends on the findings of sports medicine, sports biomechanics, exercise, physiology, and sports psychology etc. The knowledge from these Disciplines applied in practice.

Warming up – Warming up is usually performed to do an activity in most refined and efficient way. It is a short term activity and is done prior to any competition or training. It helps the sports person to prepare physically, mentally and physiologically. There are two types of warming up passive and active.

Limbering Down –Cooling down or limbering down is also known as warming down. To bring the body in

normal state after any competition or training is called cooling down. Limbering down is important as:

- Body temperature becomes normal
- It helps in proper removal of waste products.
- Decreases tension
- Reduces the chances of dizziness or fainting.
- Recovery becomes fast.
- Muscles do not remain stiff.
- Heart rate returns to initial stage.

For any health regime an individual should know these basic techniques of warming up and cooling down .There are various general methods of warming up such as jogging, simple exercise, stretching, massage, warm water, sunbathe or steam bath .Problems related to sports, health training etc such as of overload, adaptation can be overcome by planning, nutrition, psychological strategies, social interaction, Medical aids and physical therapy.

Class XII book

Unit 1 Planning in Sports

In this unit meaning and objectives of planning in sports, various committees, and their role are discussed. Tournament knocks out; league, or round robin, types of tournaments and procedure to draw fixtures are explained.

Planning is the process of thinking about and organising the activities required to achieve a desired goal. Objectives of planning are:

- To reduce unnecessary pressure of immediacy.
- To keep good control over all the activities.
- To facilitate proper coordination.
- To reduce the chances of mistakes.
- To increase Efficiency.
- To increase creativity.
- To Enhance sports Performance.

Tournament is that series of sports in which a team finally win and rest of the team lose the match. Tournaments are very important in the field of sports:-

- For the development of Sports skills
- Helpful in selection of players
- Development of National and International Integration
- Development of social Qualities as a source of recreation

There are four types of tournaments

- Knockouts
- League
- Combination
- Challenge

Educational Implications

Intramural are those activities which are performed within the walls of the campus or institution these activities are organized only for the students of a school or an institution. Intramurals are significant for students:

- For physical, mental, emotional and social development
- These programs also lay stress on moral and ethical values of students
- Intramurals are necessary for development of health of children.
- They refresh the children and provide recreation

So teachers and school should organize such activities frequently for the development of students.

Extra-Mural Activities are the activities which are performed outside the walls of a school or an institution. Extramural competitions are also called Inter-school competitions. These are important as they provide opportunities to school to show their capabilities, to enhance the standard of their performance, provide appropriate knowledge of sports techniques, for making and implementing the programs of physical education more effective.

Specific Sports/Health Programs

- Sports Day

In this various sports activities in which physical and recreational activities are included are conducted. Such events help in improving the health of students and in developing social and leadership qualities.

- Health Run

Health run are organized by Health Departments, Sports Departments or Social Organizations. The purpose is to raise the standard of health in the country. Health run is a great physical activity that offers a significant Health benefit.

- Run for Fun

It is also organized with an objective to spread the message among the masses to remain health and fit. It is organized to motivate people to exercise regularly and stay healthy. Run for specific case like spreading awareness about AIDS, Leukaemia etc are organized, Run for Unity is organized to show unity and peace among the people of different religion. Such programs are organized for the promotion and maintenance of health among people.

UNIT 2 Adventure Sports and Leadership Training

In this unit meaning and objectives of Adventure sports, types of activities, material required and safety measures are discussed. Identification and use of Natural Resources, Conservation of surroundings and Environment are explained.

Educational Implications

Adventure Sports are usually outdoor sports which involve intense and sometimes Life threatening actions, which create an adventurous atmosphere. Basically the individuals compete against Nature in these sports.

Types of activities which come under Adventure sports are Campaigning, Rock Climbing, Trekking, River-rafting and Mountaineering.

Different types of materials are required in different sports and various safety measures in each sport are described in this chapter, which needs to be taken care while performing these types of sports.

Natural resources are materials and components which are found within our environment, these are of two types,

Renewable and Non-Renewable

Renewable resources are those natural resources which are filled again naturally such as Sunlight, air and wind. These natural resources are persistently available and their quantity is not usually affected by human consumption.

Non Renewable resources are those natural resources which are either formed very slowly or are not formed naturally in the environment, for example Minerals and Fossil fuels.

The main problem today is the fast depletion of natural resources such as forest, natural gas, wildlife, oil, petrol etc. Major reasons for this depletion are the improper and excessive use and fast rate of growth of population. A well planned systematic and prudent use of natural resources can be the most significant way or means to protect their extinct species.

- Water: We should use water judiciously and avoid any kind of wastage.
- Natural Gas: For heating water solar water heater, Hydro power can be used and in this way use of natural gas can be minimized.
- Fossil Fuels: These are limited in amount, so these should be used properly. So instead of petrol and diesel, solar energy, gas water energy can be used in vehicles as fuel.
- Forest: Deforestation should be reduced, trees should be laid down on plantation and restrictions should be on deforestation.

Conservation of Surrounding or Environment

Conservation of surroundings or environment implies the sustainable use as well as the management of natural resources such as wildlife, water, air, and energy and earth deposit.

Conservation of natural resources should be done at individual level. Plantation should be encouraged. Rainwater harvesting should be done, stop wastage of water, use drip irrigation method. The solar equipments such as solar water heater, solar cooler and solar lights. Try to use other sources of energy. Enhance sustainable agriculture, judicious use of resources should be practised.

The solution for conservation of surroundings or environment actually comes up with a mixture of several approaches such as law, economics, technology, education, social justice, personal change and awareness about conservation among people.

Unit 3 Sports and Nutrition

This unit deals with the concept of Balanced diet and Nutrition meaning of Balanced diet and nutrition, Nutritive and Non-nutritive components of diet, eating disorder, effects of diet on performance, healthy weight, dieting, sports Nutrition.

“A diet which consists of all the essential food constituents viz protein, carbohydrate, fats, vitamins, minerals and water in correct proportion is called balanced diet.”

‘Nutrition’ is defined as the science of food & relationship to health Nutrition is the science of foods which deals with dynamic process in which the food consumed is digested, nutrients are absorbed, distributed to the tissues for utilization & water are disposed off the body.

Macro-nutrients are taken in large amount. They supply energy and are needed for growth maintenance to perform activity. They include carbohydrates, protein, fats and water.

Educational Implications

Minerals and Vitamins are included in micro-nutrients. Micro Nutrients are required in very small amounts. For healthy individual appropriate amount of nutrition is required.

Proper amount of macro as well as micro nutrients are essential in our diet. Diet of growing children is different from adults. Proper diet is an important component of health

Minerals and Vitamins are included in micro nutrients. Micro Nutrients are required in very small amounts.

Nutrition components of diet are those components which contribute or provide energy or calories. Like protein, carbohydrates, fats, vitamins, minerals.

Non Nutritive components of diet are those components which do not contribute or provide energy or calories. Roughage or fibre, water, colours, flavours etc. Some of the non nutritive components of diet.

Eating Disorders

When an individual starts eating in exclusive amount or starts eating in very small amount, it is called an eating disorder. Eating disorders affect an individual’s mental physical health.

Anorexia Neewosa

It is a type of eating disorder that affects women and men of all ages. The individuals who have Anorexia Neewosa desire to lose weight because they have intense fear of gaining weight. It usually begins in the teenage & is more common in females than males.

There are two types – Restricting type and Purging type.

Bulimia Neewosa are called bulimia is an eating disorder in which a person eats excessive amount of food & then vomits it in order not to gain weight. It is a disorder in which an individual binges on food or has regular episodes of overeating and feels a loss of control. After that the individual uses various means or methods such as vomiting or using laxation to prevent weight gain.

There are two types of Bulimia

- Purging – Self induced vomiting
- Non purging Bulimia – other methods are used to prevent weight gain.

There are genetic causes, psychological factors, performance pressure in sports and social factors responsible for causing Bulimia.

Bulimia can be prevented by assisting children & teenagers to have a healthy view of self. To have a healthy approach to food & exercise.

Treatment of Bulimia

- Psychological treatment
- Medication – fluoxetine is the only antidepressant to treat Bulimia.
- Education for Nutrition & Healthy Weight
- Caution about exercise.

Meaning of Healthy weight

A healthy weight is that weight at which an individual leads a healthy life without any risk of diseases.

There are two popular methods to find out or calculate the healthy weight, i.e. Height and weight chart and Body mass index chart (BMI).

$$\text{BMI} = \text{Weight (Kg)} / \text{Height}^2 (\text{m}^2)$$

WHO Criteria	BMI
Underweight	<18.5
Normalized weight	18.5-24.9
Overweight	25-29.9
Obesity Class I	30-34.9
Obesity Class II	35-39.9
Obesity Class III	>40

Proper methods to control healthy body weight are –

- Set appropriate goal
- Lay stress on health not on weight
- Cut your calories
- Lead an active Lifestyle
- B_out support

- Yogic Exercise
- Avoid fats, junk food and fast food
- Avoid Overeating
- Avoid rich Carbohydrate food
- Don't skip meals
- Avoid Alcohol, smoking and drugs
- Balance intake and expenditure of calories
- Regular exercise & physical activity

Pitfalls of Dieting

Major pitfalls of dieting are:

- Extreme reduction of calories
- Restriction on some nutrients
- Skipping meals
- Intake of calories through drinking - beverages, coffee, juices, sodas etc contribute to weight gain.

Underestimating the calories

Intake of labeled food – sugar free, fat free

Not performing exercise

Food Intolerance

Food intolerance is more common than food allergy. Food intolerance means the individual elements of certain foods that cannot be properly processed and absorbed by our digestive system.

Food Myths

- Potatoes make you fat
- Fat free products will help you lose weight
- Eggs increase cholesterol level
- Drinking while eating makes you fat.
- Don't take milk immediately after eating fish.
- Starve yourself if you want to lose weight
- Exercise makes you eat more.

Unit 4 Postures

In this unit postures and its types, advantages of correct posture and disadvantages of wrong posture on physical health of a person are explained.

Educational Implications

Correct Posture means the balancing of body in accurate and proper manner while sitting, standing, reading or writing during any other action of body.

Advantages of correct posture

- Good Physical appearance
- Grace and efficiency of movements
- Physical fitness
- Correct posture assists in reducing back pain, headache and spinal related problems
- Prevents Disorders and diseases
- Lesser Fatigue
- Improve Speech
- Improve Concentration power

Causes of Bad Posture

- Improper diet
- Diseases – Rickets, Polio, Infantile Paralysis
- By birth
- Due to accidents
- Fatigue
- Fashion
- Delicacy and Imitation
- Lack of Rest and Sleep
- Lack of proper exercise
- Lack of awareness
- Unsuitable furniture
- Improper way of carrying weight

- Obesity
- Habits

Common Postural Deformities are:

- Spinal Curvature
- Flat foot
- Knock Knees
- Bow legs
- Round shoulders

Spinal Curvature is a deformity related to spine. It is caused by carrying excessive weight beyond capacity. These are of three types:

Kyphosis – increase or exaggeration of a backward or posterior curve

Lordosis – Inward curvature of spine increased forward curve

Scoliosis – Postural adaptation of the spine in lateral direction is called scoliosis

Through various exercises and yoga asanas, this problem can be cured.

Unit 5 Children and Sports

Motor development in sports, factors affecting motor development.

Physical & Physiological benefits of exercise for children. Advantages and disadvantages of weight training and food supplement for children.

Motor development refers to the development of a child's bone, muscles and ability to move around and manipulate his/her environment. Motor development can be divided into two types i.e. gross motor development and fine motor development.

There are various factors which are liable to affect motor development of children.

These are:

- Biological factors
- Environmental factors
- Nutrition
- Physical Activities
- Opportunities
- Sensory Impairments
- Postural deformities

- Obesity

Physical and Physiological Benefits of Exercise for Children are:-

- Exercise controls weight
- Exercise strengthens bones
- Exercise strengthens lungs
- Promotes changes in the brain structure
- Exercise strengthens the heart
- Exercise reduces blood sugar level
- Exercise builds strong Healthy muscles
- Exercise boosts energy level
- Exercise helps in motor development
- Exercise helps in digestive process.
- Exercise improves Neuromuscular coordination
- Exercise helps in staying Healthy

Weight Training

Weight training is defined as those exercises that are designed to strengthen specific muscles by causing them to overcome a fixed resistance, usually in the form of bar_bells, or dumb bells.

Educational implications

Advantages of Weight training

- Helps in getting in good shape
- Helps in enhancing Athletic performance
- Provides fitness
- Develop strength
- Increases bone density
- Reduces stress and tension

Disadvantages

- Risk of injuries
- Non Flexibility

Food Supplement

Food supplement means a nutrient that is added to your diet to nourish your body that you are not getting in your regular diet.

Food supplement generally include vitamins, minerals, fibre, fatty acids or amino-acids. This supplement may be in form of a tablet or powder which can be added to water or milk for consumption.

Before taking supplements, certain precautions need to be taken care of:-

- First of all ensure that there is lack of essential nutrients in a child. So consult doctor before taking food supplement.
- Before purchasing, an individual should ensure that is free from preservatives, contain no fillers and does not contain added sugar.
- Food supplements may create harm if they are taken in excessive dosage, specially the minerals and fat soluble vitamin, which can be accumulated in body.

Unit 6 Women & Sports

This unit deals with topic like participation of women in India. Reason for less participation of women in sports. Special consideration for female sports person. Female athlete triad.

Psychological and Sociological aspects of sports participation Ideology of women's participation.

Initially women did not participate in sports, they were not even allowed to watch sports, but slowly in 20th century women participation started increasing and in year 2000 Sydney Olympics record number of women participants were there.

In 2012 Indian participants in London Olympics, Sania Nehwal and M.C mary Kom put feather in the cap of India by winning Bronze medals. There is a long list of female sportspersons who won various positions in the World cups, Commonwealth games, Asian games and SAF games etc.

Gender inequality is evident in sports. It is usually observed that women are not provided equal opportunities in comparison to their male counterparts.

There are various reasons for low participation of women in sports in India:

- Lack of legislation
- Lack of time
- Lack of self confidence
- Male dominated culture of sports
- Lack of intent of spectators and no coverage of women's sports
- Lack of Role models
- Lack of fitness and wellness movement
- Lack of education

- Lack of female coaches
- Attitude of society
- Lack of personal safety
- Lack of access to proper facilities

Educational implications

Health problems and their relationship with sports participation:

- Menarche
- Menstrual Dysfunction

Recent studies conducted in this field show that there has been no fact or evidence of dysmenorrhoea of any consequences as the result of intensive sports participation.

Generally it is not recommended to take part in intensive sports activities during pregnancy, however there are exceptions. Although light exercises for general health and fitness are recommended during pregnancy.

Women who take part in physical exercises reduce their risk of breast cancer. Since exercise or sports activity burns calories and help in weight loss, so it is preferred in menopause.

Female Athlete Triad

It is a syndrome in which anaemia, osteoporosis and amenorrhoea are present. Triad is a serious disorder. The symptom of triad disorder may include fatigue, frequent injuries, loss of endurance and power, irritability, increased healing time for injuries, enhanced chances of fracture, cessation of Menstruation cycle.

Psychological Aspects of Women Athlete

- Gender Role orientation
- Competitiveness
- Confidence
- Self Esteem
- Self image or body image
- Depression
- Aggression

Sociological factors of Sports participation

- Family
- School
- Culture

- Attitude and Prejudices

Unit 7 Test and Measurement in Sports

This unit deals with various test and measurement techniques, used in sports. Measurement of muscular strength. Kraus Weber test is explained in detail. Motor fitness test AAPHER. Measurement of Cardiovascular fitness. Haward Step test/Rockport test. Measurement of flexibility: Sit and Reach Test, Rikli and Jones: Senior citizen fitness test

Educational implication

Tests and Measurements in physical education are the instruments or devices for getting essential details regarding the needs, capacities, abilities and attitudes of students or sports persons.

Unit 8 Physiology and Sports

In this unit Gender differences in physical and physiological parameters. Physiological factors determining the components of Physical fitness are explained in details. Effects of exercises on Cardio Vascular system, Respiratory system and muscular system are discussed. Concept of ageing and physiological changes due to ageing and Role of physical activity in maintaining functional fitness in Aged population are elaborated.

Educational Implication

Males and females are noticed on the basis of Physical and Physiological parameters, there are various types of differences:

- Physical or Anatomical Differences
 - Differences in size
 - Differences in body shape
 - Vertebrae, legs and knees
 - Centre of Gravity
 - Bones of Shoulders
 - Pelvic region – broad and wide in females
 - Abdomen – larger in females
 - Adiposity
- Physiological Differences
 - Muscular Strength – Females have less strength than males
 - Blood Circulation – Less in females
 - Respiratory Organs – Lungs smaller in females
 - Menstrual Cycle

There are various Physiological factors which determine the components of physical fitness such as strength,

speed, endurance and flexibility.

- Physiological factors determining strength
 - Strength of Muscles
 - Body Weight
 - Muscle Composition
 - Intensity of Nerve Impulse
- Physiological factors determining speed
 - Mobility of the nervous system
 - Muscle Composition
 - Explain strength
 - Flexibility
 - ATP and CP Stores and metabolic power of muscles
- Physiological factors determining Endurance
 - Aerobic Capacity – The ability of the organism to maintain the adequate supply of O₂ to the working muscles for energy liberation is important for endurance performance. It depends on
 - Oxygen Intake
 - Oxygen transport
 - Oxygen uptake
 - Energy Reserves
 - Lactic Acid Tolerance
 - Movement Economy
 - Muscle Composition
- Physiological factors determining flexibility
 - Muscle Strength
 - Joint Structures
 - Age and gender
 - Stretch ability of Muscles
 - Internal Environment
 - Previous Injury

Effects of Exercises on cardio Vascular System

During exercise the Cardio Vascular system begins to meet the increased demands of the body in many ways. The Cardio Vascular system reached Oxygen to the working muscles, return the blood to the lungs to be re-oxygenated. Delivers fuel to the active tissues of the body. There are immediate and long term effects of exercise on the Cardio-Vascular system.

Immediate Effects of Exercise

- Increase in Heart Rate
- Increase in Stroke Volume
- Increase in cardiac Output
- Increase in blood flow.
- Increase in blood pressure

Long Term Effects of Exercise are:

- Increase in size of heart
- Decrease in Resting heart rate
- Stroke Volume increases at rest.
- Increase in Cardiac Output
- Increased blood flow
- Decrease in blood pressure
- Increase in blood volume
- Quick recovery rate
- Reduced risk of Heart diseases

Effects of Exercise on Respiratory System

- Strong Willpower
- Increase in Tidal Air capacity

Tidal air is the amount of air that flows in and out of the lungs in each quick respiratory movement.

- Decrease in rate of Respiration
- Strengthen Diaphragm and muscles
- Increase in Endurance
- Increase in Residual air volume

- Increase in size of lungs
- Prevention from diseases
- Increase in Vital air capacity

It is the amount of air which an individual can inhale and exhale with max.effect.

Effects of Exercise on Muscular System

- Change in size and shape of muscles
- Muscles remain toned
- Controls external fat
- Change in the connective tissue
- Efficiency movement
- Delay Fatigue
- Increase food storage
- Figure Maintained
- Body posture remain correct
- Improves reaction time

Ageing

Ageing in its broadest sense is the continuous and irreversible decline in efficiency of various physiological functions.

Physiological Changes Due to Ageing

- Change in muscle size and strength
- Changes in metabolism and body composition
- Change in bone density
- Changes in respiratory system
- Changes in Cardio Vascular system
- Changes in Nervous System
- Changes in Gastrointestinal system
- Changes in Urinary system
- Changes in flexibility
- Changes in senses

No one can stop the clock of ageing but everyone can slow its tick with the help of physical activity. Physical activities play a very significant role in maintaining functional fitness in aged population. With the help of Physical activity they can perform daily routine, work more efficiently.

It makes the person more energetic and removes signs of ageing. It keeps the human liver fitter and in better condition for a longer duration. It protects the individual against a number of chronic diseases. It helps aged people to live healthy and vigorous lives.

Unit 9 Sports Medicine

Concept and definition of sports Medicine.

Aim and Scope of Sports Medicine: Impact of surface and Environment on Athletes. Sports Injuries, causes of sports injuries, prevention of sports injuries. Management of sports Injuries are discussed.

Sports Medicine is related to such human problems which usually arise during training and competition in sports and games. The main objective of sports medicine is not only related to the world level performance but also to the adjustment of appropriate environment and the health of sportsperson.

Educational implication

Sports Medicine is a branch of medical science that deals with the treatment of injuries related to sports and games. It helps in preventing, diagnosing and treating the sports injuries.

Surfaces – There are different types of surfaces such as wooden, cemented, artificial turf, grainy, rubber, synthetic, sponge and cinder etc in different types of games and sports.

Educational Implication

Such type of surfaces provides safety and resilience as well as protective.

Environment

Educational implication

The environmental conditions have various impacts on sports events and athletes. The environment may be any outdoor or indoor condition that potentially impact on the performance of sportspersons/athletes.

- High temperature – It can cause various illness such as Heatstroke and heat cramps
- Extreme cold climate – It may cause hypothermia and other skin related problems
- High Altitude
- High Humidity – Adverse Effect
- Air Pollution
- Speedy Winds – may decrease performance in some sports whereas may enhance performance in some other sports.

Sports Injuries

Sport Injuries are those injuries which are common in field of games and sports. During training and competition, proper protective equipments must be used to avoid sports injuries.

Sports Injuries can be classified as:

- Soft tissue Injuries
- Bone Injuries
- Joint Injuries

Soft Tissue Injuries are -

- Contusion
- Strain
- Sprain
- Abrasion
- Bruises

Bone Injuries are:

- Simple fracture
- Compound fracture
- Complicated fracture
- Green Stick fracture
- Comminuted fracture
- Impacted fracture

Joint Injuries

- Dislocation of lower joint
- Shoulder joint
- Hip Joint
- Wrist

Educational implication

There are various causes of sports injuries:

- Improper Conditioning
- Improper warm-up

- Lack of fitness
- Unscientific way of training
- Nutritional Inadequacy
- Lack of Sports Facilities
- No use of Protective Equipments
- Practice during fatigue
- Pressure of Competition
- Carelessness
- Overuse of Muscles
- Recurrence of Injury
- Improper Sports Equipment

By avoiding all these causes and taking balanced diet, Sports person can avoid/prevent sport injuries.

UNIT 10 Biomechanics and Sports

This unit has various sub topics included in it such as Biomechanics, motion and its types, work-done, force, energy and power, Frictional force, Mechanism of walking and running.

Educational implications

In primary and high schools stress is laid down on learning the fundamental motor skills which provide a base for the learning of advanced sport skills. Teachers, coaches and physical training are concerned with helping individuals to learn how to move efficiently and effectively.

Biomechanics is a sub-discipline that applies the law of mechanics and physics to study the bodily movements and the causes of movements, both internally and externally.

Projectile Motion- An object thrown into the space either horizontally or at an acute angle under the action of gravity is called a projectile.

The movement of an object can be classified as linear, angular or mix.

Linear motion refers to any motion that moves along a straight line in one direction. The direction can either be horizontal, vertical or inclined.

Angular Motion is also referred a rotatory motion. It occurs when all points on a body or object move in circular or circular parts of circle about the same fixed central line or axis. Eg: a Child swing.

Work – It refers to an activity involving a force and the movement in the direction of Force. $W = F \times S$

Power is the rate of doing work or the rate of using energy.

$$P = W/T$$

Energy is the capacity to do work.

Mechanical Energy is the combination of kinetic and potential energy.

Force of Friction is the force that develops at the surfaces of contact of two bodies and opposes the relative motion. There are two causes of friction: the roughness or irregularities of surface, the strong atomic or molecular forces of attraction between the two surfaces at point of actual contact.

Knowledge of all these concepts of physics is very important for every individual to understand the basic science involved in day to day activities and physical movements of the body and their relation with health.

UNIT 11 Psychology and Sports

Topics covered in this unit are stress, anxiety and its management. Coping with stress – Strategies, Personality and its dimensions, types. Motivation and its types, Self Esteem and body image. Psychological benefits of Exercise.

Stress is a condition or circumstances (not always adverse) which can disturb the normal physical and mental health of a person.

Stress can cause headaches, asthma, diabetes, heart ailments and cancer etc.

In the situation of stress, the brain prepares the body to take defensive action by releasing stress hormones which are Cortisone and Adrenaline. These Hormones raise the blood pressure and the body prepares to react to the situation. This is called flight response. These hormones get club up in blood and finally effect.

When we fail to face a stressful situation, the hormones remain unused in blood for longer time. It results in stress related physical symptoms such as tense muscles, anxiety, dizziness and fast heartbeats.

The effects of stress are not always negative, but positive also. There are various instances of positive effects of stress. The unachievable tasks can be achieved with positive stress.

There are a number of stress management techniques such as change in Lifecycle, relaxation, meditation, yogic exercises, physical exercises, listening music, deep breathing, manages, physical activities, achieving physical fitness, building self confidence, developing habits in avoid the company of stresses person and don't think about stressful thoughts.

Anxiety – Anxiety is a personal feeling of apprehension accompanied by an increased level of physiological arousal.

Sweating hands, frequent urination, increased respiration rate, muscle tension, increased heart rate etc are some effects of anxiety. It may cause Hypertension, heart attack and asthma.

Anxiety is accompanied by physiological arousal. It is important for each sports person to find his/her optimum level of physiological arousal for a given activity.

For Management of Anxiety:

- Breathing techniques
- Meditation

- Establish Winning feeling
- Stop Negative thinking
- Autogenetic Technique can be used (Self regulation)

Coping Strategies

Coping refers to the thoughts and actions which we usually use to deal with a threatening situation.

Coping Strategies:

- Problem Focused
- Emotion Focused

Problem Focused

It deals with the root cause of stress and try to improve the stressful environment

Emotion Focused

It is used to tackle the feelings of distress rather than the actual problem.

Emotion focused strategies are usually less effective than using problem focused strategies. Emotion focused strategies are more useful when circumstances will not change. Problem focused strategies are effective for a longer period.

Personality is a dynamic and organized set of characteristics possessed by a person that influences his/her cognition, emotion, motivation and behaviour in different types of situation. Personality is made up of various dimensions

- Physical
 - Mental
 - Social
 - Emotional

Sports play an important role in the development of all the aspects of personality. Personality of an individual can be moulded and shaped well in games and sports.

MOTIVATION

Human behaviour is controlled, directed and modified through certain motives. Motivation is one of the main psychological factors which affect the performance. Motivation means to be inspired to do something. There are two types: Intrinsic and Extrinsic.

Various Techniques of Motivation are:

- Goal setting
- Elaborate arrangements for competition

- Presence of opposite sex
- Spectators
- Verbal comments
- Healthy sports environment
- Hypnotism
- Knowledge of results
- Praise or blame
- Cash prize, certificate and Trophies
- Music
- Positive attitude
- Positive self talk

Self Esteem – is how you value and respect yourself as a person.

Body Image –

Is how you and what you think and feel about your body.

Types: Positive BI and Negative BI

Various factors that influence your Self Esteem and Body Image are :

- Puberty and development
- Media Images
- Family and School
- Life Experience and Natural Ageing process

Psychological Benefits of Exercise

- Improves mood
- Reduces depression
- Lower Anxiety
- Improves mental alertness
- Enhances Self Esteem
- Improves self confidence
- Reduce stress
- Boost memory

- Feeling great

So, this unit is largely concerned about the mental health issues and the coping strategies. If every student knows these techniques then the problems of stress and anxiety among young people can be solved upto large extent.

Unit 12 Training in sports

Topics covered in this unit are Strength and its types, method of improving strength, Endurance definition and meaning, types and methods to develop endurance .Speed, flexibility and coordinative ability and methods to improve these parameters.

Strength is the ability of the muscles to overcome resistance. It is the amount of force a muscle or group of muscles can exert. Different types of sports require different types of strength: Dynamic and Static. There are three methods of improving strength isometric, Isotonic and Isokinetic.

Endurance is the ability to sustain an activity. Endurance as the ability to resist fatigue.

Types of Endurance:

- According to nature of activity
 - Basic
 - Specific
 - General
- According to duration of activity
 - Speed
 - Short Term
 - Middle Term
 - Long Term

There are three methods of developing endurance Continuous training, Interval training, Fartlek Training.

Speed is the ability to move from one place to another in shortest possible time. The main forms in which speed appears are:

- Reaction Ability
- Acceleration Ability
- Movement Speed
- Locomotors ability
- Speed endurance.

Flexibility can be defined as the ability to execute movements with greater amplitude or range. There are two types Passive i.e. the ability to do movements with greater distance with external help; and Active i.e. the ability to do

movements for longer distance without external help. Methods to improve flexibility are Ballistic, Static Stretching, Dynamic Stretching, Proprioceptive Neuro Muscular facilitation Technique, etc.

Coordinative abilities are those abilities of an individual which enables the individual to do various related activities properly as well as effectively and efficiently. There are of different Types Orientation, Coupling, reaction, balance, Rhythm, adaptation, and Differentiation abilities of body movement.

The Knowledge of all these parameters and how to improve them is not only important for sports person and athletes but also for a layman to understand the reason of difference in these parameters that exit between person to person. This knowledge is important for teachers as well as parents to improve these parameters through various methods described in the unit in children both at school and home.

SUMMARY/ CONCLUSIONS

As a part of school education, component of health has been integrated in different subject areas as well as Health and Physical Education has been recommended as a compulsory subject up to Secondary and optional at Higher Secondary stage. The need of the hour is to promote health – physical, mental, emotional, and social by putting them into experiential learning situations and providing real life experiences enhancing skills for psycho social competencies at different stages of child development and this can be possible if there is a adequate teacher preparedness which need to be addressed through the pre-service and in service training programmes at all levels. Much has been done at the policy and programme level, what is required is the strong implementation at all levels. The involvement of Non-governmental Organisations (NGOs) and Self-Help Groups (SHGs) along with government efforts in the implementation of the components like School Health and Hygiene Services, School Mid-Day Meals Programme, Yoga, Physical Activities and Sports and Games, and also Teacher Preparation may be considered for coverage.

REFERENCES

1. Gopalan, S. and M. Shiva, Ed. 2000. *National Profile on Women, Health and Development: Country Profile-India*, New Delhi, VHAI and WHO.
2. Government of India, Ministry of Health. 1946. *Report of Health Survey and Development Committee*, Vol. II, Delhi.
3. Government of India, Ministry of Health and Family Planning. 1961. *Report of School Health Committee, Part-I*, New Delhi.
4. IIPS and ORC Macro. 2000. *National Family Health Survey (NFHS-2)*, 1998-99: India, IIPS, and Mumbai.
5. NCERT. 1975. *The Curriculum for the Ten Year School: A Framework*, New Delhi, NCERT.
6. 1988. *National Curriculum for Primary and Secondary Education: A Framework (Revised Version)*, New Delhi, NCERT.
7. 2000. *National Curriculum Framework for School Education*, New Delhi, NCERT.
8. 2005. *National Curriculum Framework 2005*, New Delhi, NCERT.
9. 2008. Position Paper National Focus Group on *Health and Physical Education*, New Delhi. Health Promotion in

Schools through Educational Activities 19

10. 2011. *Population Education Elements in School Curriculum: A Report of Content Analysis of NCERT Textbooks* (mimeographed);, NCERT, New Delhi
11. 2011. *Source Material on Population Education: A Training Material* (mimeographed); NCERT, New Delhi.
12. 2011. *Training and Resource Material on Adolescence Education*, NCERT, New Delhi. Rana, K. and S. Das. 2004. “Primary Education in Jharkhand”, *Economic and Political Weekly*, Vol. XXXIX, pp. 1171-1178.
13. UN System in India. 2006. *Adolescents in India: A Profile*, New Delhi, UN System in India.
14. Websites & URL : www.education.nic.in and www.icrw.org
15. <http://www.ncert.nic.in/programmes/aep/pdfs/MODULE%201%20ADOLESCENCE%20EDUCATION%20IN%20INDIA.pdf>
16. 20EDUCATION%20IN%20INDIA.pdf

