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An active lifestyle during childhood directly benefits the health in both adulthood and old age. Owing to the modern way of living and technological developments (e.g. cars, elevators, computers, television etc) both children and adults have become less physically active. In certain cultures, inactivity and the resultant obesity and diseases have reached 'crisis proportions'. Physical fitness is one of the critical factors for leading a healthy life. General physical fitness is the capacity of the body to perform work to resist disease and infections and to resist physical stresses imposed by such thing as heat, cold, atmospheric pressure changes at high attitude or under water and the force of jolts and vibrations.

The health related fitness of elementary school children has generated considerable attention and interest among public health professionals, researchers and parents. This is based on the belief that developing and maintaining desirable levels of health related fitness has a prominent impact on general well being. Several researchers have indicated that unfit and over
weight children, exhibit early signs of coronary artery diseases including high blood pressure and adverse blood lipid profiles. As fitness levels improve high density lipoprotein cholesterol (HDL-C) and the ratio of HDL-C to total cholesterol (T.C) increase and triglyceride (T.G) levels blood pressure and skin fold thickness decreases (Kuntzman & Reiff 1992). Further more, the management of risk factors for coronary heart disease during childhood may prove useful in decreasing the risk of coronary heart disease in later years (Vaccaro & Mahon 1989).

Understanding the benefits of participating in exercise or fitness programmes for children have several important implications. Increasing the functional ability of children may increase their willingness to become more physically active, participation in supervised physical fitness programmes may assist children in self-regulating their physical activity levels. The development of positive attitude of physical activity and fitness during childhood may have a positive impact on the level of physical activity during adult life.

Children have become less physically active in recent decades, as they are expending approximately 600 Kcal/days less than their counterparts 50 years ago. An adequate
childhood, physical activities have direct impact on childhood health status. Evidence is accumulating to the fact that children that are more active generally display healthier cardio-vascular profiles. They are leaner and develop higher peak bone masses than their less active counter parts. There is biological carryover effect into the adulthood, whereby improved adult health status results from childhood physical activity. Childhood obesity may be a precursor for a range of adheres health bone masses in young people reduces the risk of osteoporosis in old age. There may be a behavioural carryover into adulthood, whereby active children are more likely to become more active adults. Recent health guidelines suggest that children should accumulate 60 minutes of moderate intensity physical activity every day supplemented by regular activities that promote, strength flexibility and bone strength appear to be justified.

Recent research revealed that Indian's are genetically more likely to get heart attacks than any other ethnic group in the world. One out of four Indian-Americans had high levels of LP (a) as compared to the Japanese, Chinese, Caucasians and Hispanics. (Enas EA. 98). However, genes alone do not explain the sudden spurt in heart disease among the young. The answer, in a word, is life style. “Genetics load the gun, lifestyle pulls the
trigger" is how Enas describes (Dr. Enas. K. Enas Director CADI). W.H.O. predicts that India will have 100 million, or 60 percent of the world's heart patients by 2010 (India today, June 11, 2001). It shows that declining level of exercise has potential to increase the burden of chronic diseases in our people, directly as an independent risk factor and indirectly through increased obesity.

One of the most important goals of physical education programme in schools is to develop physical fitness and to promote lifelong physical activity behaviours. For this, the children must be introduced to the principles of regular physical exercise and recreational activities at an early age. Schools at all levels must develop and encourage positive attitudes towards physical exercise, providing ample opportunities to learn physical skills and perform physical activities, especially those that can be enjoyed for life time. The curriculum should not over emphasise sports and other activities that selectively eliminate children who are less skilled. Besides, the benefits of exercise, the development and maintenance of a healthy lifestyle and a positive attitude towards exercise conditioning through out life style should be promoted in schools.
One of the major benefits of physical activity is that it helps people to improve the physical fitness. Fitness is a state of well being that allows people to perform daily activities with vigour, thereby reducing their risks for health problems. According to Allen (1999) the health benefits of physical activity are substantial; they include reducing the risk of dying prematurely from heart disease and of developing diabetics, high blood pressure and colon cancer. Physical activity has also been found to reduce blood pressure in people who have high blood pressure alleviate feelings of anxiety and depression. It also helps build and maintain healthy bones, muscles and joints, and helps develop strength and agility, not to mention helping to control weight and create a state of psychological well being.

Health can be defined in many ways as it can be related to physical, mental, emotional, social and spiritual aspects of life. Many people think of good health as the absence of sickness or disease. However, it does not tell the whole story. Good health according to Nieman (1998) might be better defined as the presence of sufficient energy and viability to accomplish daily task and active recreational pursuits without undue fatigue. While other factors are involved, people who are more physically active tend to be healthier than those who are not very active.
The greatest gains in health occur when a person goes from an inactive life style to being moderately active. One need not train round the clock to experience the health benefits of physical activity, but need maintain moderate activity.

Fitness is another hard term to define. It is similar to the description of health. “If you are fit you have the stamina to perform your daily activities with energy and vigour, and you are less likely to develop chronic disease”. Fitness can be further understood as having two aspects: Health related fitness and skill related fitness. Health related fitness is focused on areas that affect the overall health and energy and the ability to perform daily tasks. Its components include cardio respiratory fitness body composition and musculoskeletal fitness, flexibility, strength and muscular endurance. Skill related fitness refers to the ability to perform specific skills required to take part in various sports activities. Its components include agility, balance co-ordination, speed, power and quickness. Skill related fitness has little to do with overall health.

Cardio respiratory fitness refers to ones circulatory and respiratory systems, which affect ones ability to pursue strenuous task or moderate to vigorous activities for extended
periods. Cardio respiratory fitness also affects how quickly one recover from such activities or tasks. Body composition refers to ones relative amounts of body fat and lean body tissue or fat free mass. The body composition is expressed in terms of percent body fat. Musculoskeletal fitness includes flexibility, strength and muscular endurance. Flexibility refers to the ability of ones joints to move through full range of motion; strength entails how much force one can exert against resistance and muscular endurance speaks of the ability of muscles to maintain force during an activity or through a series of repetitions or for a longer period of time.

Cardio respiratory endurance is a key component of health related fitness. Cardio-respiratory refers to the heart and lungs. The heart and lungs provide oxygenated blood to the body. Aerobic activities improve and maintain cardio respiratory endurance such as jogging, walking, cycling, aerobic dancing and swimming and can be essential parts of physically active life style. Aerobic simply means “with oxygen”. Aerobic activities require additional oxygen to allow continued moving and functioning at the same rates and levels.
Regular physical activity is linked to enhanced health and to reduce risk for all cause mortality and the development of any chronic diseases in adults. Children and adolescents are more physically active than adults, but participation in physical activity declines in adolescence. Young people must be instructed and encouraged to be involved in lifetime fitness activities to reduce disease incidents and to improve the overall quality of life. The cornerstone for any meaningful change must involve programme that seek and search at home. Parents should be educated regarding the critical importance and the multitude of benefits to be derived from their involvement in fitness related activities with their children. A healthy balance must be established between sedentary activities and physical activities. Schools should establish fitness testing programmes for children and these should be based on health fitness parameters rather than on athletic performance variables.

According to World Health Organization (W.H.O.) inactivity or sedentary lifestyle is one of the ten leading global causes of death and disability and it is a fact that non-communicable diseases are now more common than communicable diseases all over the world. Rapid rise of non-communicable diseases such as diabetics, cardio vascular diseases, chronic respiratory
conditions and cancer is a major global health challenge. Regular participation in fitness (physical activity) programmes is an important part of effective weight maintenance programme as it improves general effectiveness than the medicines and therapies. There are also psychological benefits and most of the studies suggest a positive relationship between physical fitness and mental achievements. Exercise reduces stress, the level of anxiety, alleviates depression, enhances quality of sleep and improves a person’s quality of life.

According to Riddoch and Borehan (1995) the fitness and physical activity levels of children and youth are commonly questioned, but the evidence cited is both equivocal and methodologically diverse. The amount and type of physical activity undertaken during childhood that is appropriate for optimal health is unknown, although it has been suggested that in the absence of such criteria activity levels known confer health benefits in adults is also appropriate for children. Studies using self-report method indicate relatively high levels of activity with 60-70 percent taking sufficient ‘appropriate’ physical activity. However, a variety of activity thresholds have been seen. The use of less stringent health related thresholds results in a higher level of ‘appropriate’ activity. Nearly all studies of
teenagers report a decline in activity with age during this period. Data from the large population studies indicate that activity levels peak in children at around 13-14 years of age, and then markedly decline. Boys are normally reported to be more active than girls, but this difference is greatly reduced when moderate activity alone is compared, indicating the boys participate in more vigorous exercise than girls.

Nation was surprised and embarrassed when the findings of the 1995 National Children and Youth Fitness Study (NCYFS) showed that a full third of youth were not physically active enough for aerobic benefit. Americans are accustomed to seeing themselves a country of Olympic champions, Super Bowl heroes, and rodeo stars. How could this happen? Since physical activity patterns and attitudes are often influenced in important ways by factors presented before age 10, various educators, policy makers, and youth advocates called for a study of younger children to try to get answers.

Nearly all children attend schools; therefore, the schools play a pivotal role in influencing their physical fitness and exercise habits. Keeping the above factors in mind the research scholar felt a need to undertake a research project to
substantiate the effects of quality physical fitness programme on health related physical fitness of low-fit children.

**STATEMENT OF THE PROBLEM**

The purpose of the study was to find out the effect of participation in a 12 week quality physical fitness programme on health related physical fitness of low-fit high school children.

**HYPOTHESIS**

Based on the available literature and investigators insight, the following hypothesis was formulated.

It was hypothesised that quality physical fitness programme would produce significant positive difference on health related physical fitness components of low-fit children.

**DELIMITATIONS**

The following delimitations were applied to this study:

1. The Study was delimited to male students of Kendriya Vidhyalaya, Navel Base No: II and Kendriya Vidhyalaya Navel Base No: I.

2. The Study was delimited to male students between 12-14 years.
3. The Study was further delimited to the low fit students, who scored below the 25th percentile score in any of the AAHPHERD Health Related Physical Fitness Test items.

4. The study also delimited to AAHPHERD Health Related Physical Fitness Components i.e. (a) Cardio respiratory function, (b) body composition, and (c) abdominal and low back-hamstring musculoskeletal function.

**LIMITATIONS**

The following limitations were considered while interpreting the results of the study.

1. As the subjects selected for the study are day-scholars and they belonged to different socio-economic background, factors like the health-risk behaviours, dietary habits, heredity and intelligence quotient (IQ) might have an effect on the results of the study were also considered as limitation.

2. Non-availability of sophisticated instruments to measure the selected variables was also considered as one of the limitations of the study.
3. The factors beyond the control of the investigator such as climatic conditions etcetera strictly considered as limitations of this study.

**DEFINITION AND EXPLANATION OF THE TERMS**

**Health related physical fitness**

Health can be defined in many ways as it can be related to physical, mental, emotional, social and spiritual aspects of life. Many people think of good health as the absence of sickness or disease. Good health according to Niemen (1998) might be better defined as the presence of "sufficient energy and vitality to accomplish daily tasks and active recreational pursuits without undue fatigue".

Heath Related Physical Fitness is defined by three general components: (1) Cardiorespiratory function (2) Body Composition (leanness/fatness) and (3) Abdominal and low back hamstring musculoskeletal function. The essential characteristics of health related fitness is that exercise has positive influence on three components and that an adequate level of development in necessary for health.
The development of health related physical fitness tests represent a major innovation in fitness testing. These tests were developed in response to both the growing dissatisfaction with the traditional motor fitness batteries and the glowing body of evidence supporting the value of regular, vigorous exercise for health promotion.

Health related fitness is focused on areas that affect our overall health and energy and our ability to perform daily tasks and activation. Its components include cardio respiratory fitness, body composition, and musculoskeletal fitness, the later including flexibility, strength and muscular endurance. (Allen. W. Jackson, 1999).

**Cardio Respiratory Endurance**

Cardiorespiratory Endurance is certainly a key component of health related fitness. Cardio respiratory refers to the cardiac (heart) and respiratory (lung) systems. The heart and lungs provide oxygenated blood to our body. Aerobic activation that improve and maintain cardio respiratory endurance such as jogging and swimming can be essential parts of physically active lifestyle.
Endurance

Harre (1986) defines endurance as the ability to resist fatigue. According to Hardayal “Endurance is the ability to do sports movements, with the desired quality and speed, under the conditions of fatigue” (Hardayal, 1991).

Strength

Strength is the ability to overcome resistance or to act against resistance. Strength should not be considered a product of only muscular contractions. It is, in fact, a product of voluntary muscle contractions caused by the neuro-muscular system (Hardayal, 1991).

Flexibility

Flexibility refers to the range of motion that one can achieve at any joint through any particular movement. It is a functional capacity of a joint to move through normal range of motion. It is specific to a given joint and is actually more depended upon the musculature surrounding of a joint than on actual body structure of joint itself. (Hardayal 1991).
Low-fit Children

The students who scores below the 25th percentile for their sex and age on any of the fitness items considered as low-fit. These children need a remedial individualized fitness programme and should receive special attention and are strongly encouraged to improve the related components (HRPF Test Manual, 1980).

SIGNIFICANCE OF THE STUDY

The study have great implication to develop a protocol of mass testing the entire school population and establish a practical working methodology to identify strength and weakness within population. The study also provides a procedure to determine the areas and components to be stressed to improve the level of physical fitness among school children. The technology and procedure used for the development of physical fitness programme will work as a significant aid in the prescription of exercise for the development of physical fitness. This study also demonstrates the achievements of those children who actively participated in the programme and successfully scored well in post test.
Every Physical Education / Physical Fitness programme should have an established set of reasonable fitness objective for the students. The results will help to determine the degree to which these objectives are being met. The identification and introduction of physical fitness programme for low-fit students will help the Physical Education teacher to create a public relation and positive image in the general public that the school and physical education teachers sincerely putting efforts to solve students fitness problems.

The very process of administering the physical fitness programme to students communicates the nature of important components of health and fitness. The components measured are emphasized as being worthy of special consideration in person's life style. Further, the test results and fitness programmes can be used to stimulate student interest in health related topics. The testing process and fitness programmes should be an integrated part of the student's educational experience in health and fitness.

In addition student's talk to their parents, relatives and friends though it became an indirect educational function in
making them aware of the importance of fitness, tests and criteria of health related fitness.

Children and youth are inherently curious about their physical abilities and development and the way in which their results compare to those of others. By becoming aware of how they compare with criterion standards and with other student’s, students may become motivated towards improvement or maintenance of a desired level already achieved.

The exposure to health related physical fitness test items are practical enough that they can provide a self testing vehicle for the students and other members of his/her family/ both at the current point of time and in the future.