Chapter II

REVIEW OF RELATED LITERATURE
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The present chapter covers the available literature pertaining to the studies made on various aspects of assessment physical education and sports on the achievements of school students in the Union Territory of Pondicherry. The review of literature has been collected from a number of pertinent studies undertaken by the physical educationists, sports scientists and sports administrators. Considering the purpose of the present study, the reviews have been mainly classified into the following aspects:

1. Studies on Pragmatic Approaches

2. Studies on Achievement of Institutions

3. Studies on physical education and sports programmes

4. Studies on achievements of school students in terms of their sports participations.

1. STUDIES ON PRAGMATIC APPROACHES

Rees et al. (2008) examined the importance of sensation seeking and pragmatism in the steroids and sports supplements behavior and attitudes of high school and junior high school students on Long Island, New York. Steroid use is much less acceptable than sports supplement use, although the reasons for use are similar. Respondents use supplements more than steroids, have a greater variety of attitudes towards their use, and have a high acceptance of their "energy" potential. There is a significant effect of current sports supplements use on future steroid use. Independent of measurement format (fixed choice questions and hypothetical situations); the steroids-sports supplement connection seems to exist within a pragmatic approach to cosmetic fitness, where the goal is improving physical ability and appearance.
Cohen et al. (2000) documented that behavior is influenced by individual-level attributes as well as by the conditions under which people live. Altering policies, practices, and the conditions of life can directly and indirectly influence individual behavior. This paper builds on existing ecological theories of health behavior by specifying structural mechanisms by which population-level factors effect change in individual health behaviors. This paper moves ecological theory from model building to a pragmatic characterization of structural interventions. We examined social and environmental factors beyond individual control and mechanisms as to how they influence behavior. Four categories of structural factors are identified: (1) availability of protective or harmful consumer products, (2) physical structures (or physical characteristics of products), (3) social structures and policies, and (4) media and cultural messages. The first three can directly influence individuals through facilitating or constraining behavior. The fourth, media, operates by changing individual-level attitudes, beliefs, and cognitions, as well as group norms. Interventions that target the four identified structural factors are a means to provide conditions that not only reduce high-risk behavior but also prevent the adoption of high-risk behaviors. Structural interventions are important and underutilized approaches for improving our nation's health.

Sharpe et al. (1997) reported that Chronic fatigue and chronic fatigue syndrome (CFS) have become increasingly recognized as a common clinical problem, yet one that physicians often find difficult to manage. In this review we suggest a practical, pragmatic, evidence-based approach to the assessment and initial management of the patient whose presentation suggests this diagnosis. The basic principles are simple and for each aspect of management we point out both potential pitfalls and strategies to overcome them. The first and most important task is to develop mutual trust and collaboration. The second is to complete an adequate assessment, the aim of which is either to make a diagnosis of CFS or to identify an alternative cause for the patient's symptoms. The history is most important and should include a detailed account of the symptoms, the associated disability, the choice of coping strategies, and importantly, the patient's own
understanding of his/her illness. The assessment of possible co morbid psychiatric disorders such as depression or anxiety is mandatory. When the physician is satisfied that no alternative physical or psychiatric disorder can be found to explain symptoms, we suggest that a firm and positive diagnosis of CFS be made. The treatment of CFS requires that the patient is given a positive explanation of the cause of his symptoms, emphasizing the distinction among factors that may have predisposed them to develop the illness (lifestyle, work stress, personality), triggered the illness (viral infection, life events) and perpetuated the illness (cerebral dysfunction, sleep disorder, depression, inconsistent activity, and misunderstanding of the illness and fear of making it worse). Interventions are then aimed to overcome these illness-perpetuating factors. The role of antidepressants remains uncertain but may be tried on a pragmatic basis. Other medications should be avoided. The only treatment strategies of proven efficacy are cognitive behavioral ones. The most important starting point is to promote a consistent pattern of activity, rest, and sleep, followed by a gradual return to normal activity; ongoing review of any 'catastrophic' misinterpretation of symptoms and the problem solving of current life difficulties. We regard chronic fatigue syndrome as important not only because it represents potentially treatable disability and suffering but also because it provides an example for the positive management of medically unexplained illness in general.

Gilson (1980) made an attempt to outline the basic periodontal approach to patients who require removable partial dentures. The education, examination, motivation, and treatment of periodontal disease prior to undertaking restorative procedures have been presented from a pragmatic approach. The underlying rationale is based on patient awareness without which the total dental health program is in jeopardy.

Glogowska (2011) documented that after the decades of the so-called 'paradigm wars' in social science research methodology and the controversy about the relative place and value of quantitative and qualitative research
methodologies, 'paradigm peace' appears to have now been declared. This has come about as many researchers have begun to take a 'pragmatic' approach in the selection of research methodology, choosing the methodology best suited to answering the research question rather than conforming to a methodological orthodoxy. With the differences in the philosophical underpinnings of the two traditions set to one side, an increasing awareness, and valuing, of the 'mixed-methods' approach to research is now present in the fields of social, educational and health research. Aims: To explore what is meant by mixed-methods research and the ways in which quantitative and qualitative methodologies and methods can be combined and integrated, particularly in the broad field of health services research and the speech and language therapy. Main contribution: The paper discusses the ways in which methodological approaches have already been combined and integrated in health services research and speech and language therapy, highlighting the suitability of mixed-methods research for answering the typically multifaceted questions arising from the provision of complex interventions. The challenges of combining and integrating quantitative and qualitative methods and the barriers to the adoption of mixed-methods approaches are also considered. Conclusions & Implications: The question about healthcare, as it is being provided in the 21st century, calls for a range of methodological approaches. This is particularly the case for human communication and its disorders, where mixed-methods research offers a wealth of possibilities. In turn, speech and language therapy research should be able to contribute substantively to the future development of mixed-methods research.

Taylor et al. (2011) reported that the process of risk assessment which should inform and help identify clinical needs is often seen as a tick box and task-focused approach. While on the surface, this provides a sense of security that forms have been completed, we often fail to communicate in a meaningful manner about the clinical needs identified, which would assist in supporting the care planning delivery processes. A clinical Practice Improvement (CPI) project implemented a care zoning framework as an evidenced-based process that provides pragmatic support to nurses who are required to continually assess,
implement and evaluate plans to address clinical need across three acute mental health inpatient settings. Risk descriptors informed by the New South Wales (NSW) Mental Health Assessment & Outcome Tools (MHAOT) criteria were developed and described in behavioural contexts in order to improve the project's reliability and translation. A pragmatic traffic light tool was used to share clinical information across three agreed care zones, red (high clinical need), amber (medium clinical need) and green (low clinical need). Additionally nurses were asked to utilise a shift review form in the context of supporting the recording of care zoning and promoting action-orientated note writing. The introduction of care zoning has enthuse the nursing teams and the mental health service to adopt care zoning as a supervisory framework that increases their capacity to communicate clinical needs, share information, and gain invaluable support from one another in addressing clinical needs. This includes increased opportunities for staff to feel supported in asking for assistance in understanding and addressing complex clinical presentations.

Mearns (2011) sought to highlight the need for employment relations academics and researchers to expand their use of research methodologies in order to enable them the advancement of theoretical debate within their discipline. It focuses on the contribution that pragmatically critical realism has made to the field of perception and argues that it would add value to the subject of employment relations. Methods: It is a theoretically centered review of pragmatically critical realism and the possible contribution this methodology would make to the field of employment relations. Conclusions: The paper concludes that the employment relationship does not take place in a vacuum rather it is focused on the interaction between imperfect individuals. Therefore, their interactions are molded by emotions which cannot be explored thoroughly or even acknowledged through a positivists' rigorous but limited acknowledgment of what constitutes 'knowledge' and development of theory. While not rejecting the contribution that quantitative data or positivism have made to the field, the study concludes that pragmatic critical realism has a lot to offer the development of the area and its theoretical foundations.
Koppenaal et al. (2011) documented that the Pragmatic-Explanatory Continuum Indicator Summary (PRECIS) tool was designed to classify randomized clinical trials (RCT) as being more pragmatic or explanatory. We modified the PRECIS tool (called PRECIS-Review tool [PR-tool]) to grade individual trials and systematic reviews of trials. This should help policy makers, clinicians, researchers, and guideline developers to judge the applicability of individual trials and systematic reviews. To illustrate the usefulness and applicability of the PR-tool, we applied it to two systematic reviews. Each included RCT was scored on the 10 PRECIS domains on a scale of 1-5. After this scoring, a 10-domain average for each individual trial and for the systematic reviews a single domain average and an overall average was calculated. One review was more pragmatic with an average score of 3.7 (range, 2.9-4.6) on our PR-tool, whereas the other review was more explanatory with an average score of 1.9 (range, 1.1-3.3). The results also suggested that the included studies within each systematic review were rather uniform in their approach, although some domains seemed more prone to heterogeneity. The PR-tool provides a useful estimate that gives insight by estimating quantitatively how pragmatic each RCT in the review is, in which methodological domains are pragmatic or explanatory, and how pragmatic the review is.

Oliver et al. (2011) estimated associations between trajectories of conduct problems and social-cognitive competences through childhood into early adolescence. A prospective population-based cohort, the Avon Longitudinal Study of Parents and Children (ALSPAC) recruited in the prenatal period (13,988 children alive at 12 months) formed the basis for the current study. Socio-emotional and pragmatic language competences were examined in relation to conduct problem development in a group of 6,047 children with unknown autistic-spectrum disorders. Specifically, conduct problem trajectories (low, childhood-limited, adolescent-onset, and early-onset persistent) identified using maternal prospective reports (Strengths and Difficulties Questionnaire; ages 4 through 13 years) were contrasted. Demographic confounders, child verbal IQ and other psychopathologies were controlled. In contrast to individuals with low
conduct problem levels, all conduct problem groups presented with difficulties in both social-cognitive domains. Deficits among those with early-onset persistent conduct problems were particularly apparent: 40.6% of boys and 24.3% of girls with persistent conduct problems met impairment criteria for one or other social-cognitive domain. Associations remained robust after controlling for demographic confounders (maternal age at birth, low SES, maternal education), child verbal IQ, and internalizing and inattention symptoms. For boys, results indicated that overlaps with overactivity symptoms may contribute problems with pragmatic language; this was not the case for girls or for socio-emotional difficulties. Findings have far-reaching implications for children with conduct problems, particularly those with early onset and persistent difficulties. Traditional parent training interventions are likely to be bolstered by strategies that help to develop the social competences of these children.

Thompson et al. (2010) documented that Health care in post-war situations, where the system's human and fixed capitals are depleted, is challenging. The addition of a frozen conflict situation, where international recognition of boundaries and authorities are lacking, introduces further complexities. Nagorno Karabagh (NK) is an ethnically Armenian territory locked within post-Soviet Azerbaijan and one such frozen conflict situation. This article highlights the use of evidence-based practice and community engagement to determine priority areas for health care training in NK. Drawing on the precepts of APEXPH (Assessment Protocol for Excellence in Public Health) and MAPP (Mobilizing for Action through Planning and Partnerships), this first-of-its-kind assessment in NK relied on in-depth interviews and focus group discussions supplemented with expert assessments and field observations. Training options were evaluated against a series of ethical and pragmatic principles. A unique factor among the ethical and pragmatic considerations when prioritizing among alternatives was NK's ambiguous political status and consequent sponsor constraints. Training priorities differed across the region and by type of provider, but consensus prioritization emerged for first aid, clinical Integrated Management of Childhood Illnesses, and Adult Disease Management.
These priorities were then incorporated into the training programs funded by the sponsor. Programming responsive to both the evidence-base and stakeholder priorities is always desirable and provides a foundation for long-term planning and response. In frozen conflict, low resource settings, such an approach is critical to balancing the community's immediate humanitarian needs with sponsor concerns and constraints.

Huang et al. (2011) investigated the effectiveness of traditional Chinese acupuncture (TCA), using an individually targeted treatment protocol delivered by a traditionally trained Chinese acupuncturist. The trial examined the treatment of chronic stress as perceived and reported by the participants, with all its diversity of presenting symptoms, rather than using a cohort approach based on a single stress-related symptom. Participants (n=18) with high self-reported stress levels were randomised into 3 groups. Group 1 received weekly TCA for 5 weeks; group 2 received weekly attentions only (practitioner present and participant supine) for 5 weeks and group 3 acted as a waiting list control. The Perceived Stress Scale 14 (PSS-14) and the Measure Yourself Medical Outcome Profile (MYMOP) were completed before and after a 5-week intervention. After 5 weeks, group 1 reported significant changes in MYMOP profile score and both MYMOP reported symptoms (p<0.05); group 2 had significant changes in MYMOP profile score and 1 symptom (p<0.05); group 3 showed no changes. The PSS-14 scores decreased in all 3 groups, but the difference between pre- and post-study within and between the groups did not reach significance in this small study. In addition, there were self-reports of improvements for group 1 for other health problems encountered during treatment. The lack of clarity concerning the definition of stress makes it complex to investigate. This pilot study suggests that TCA may be successful in treating the symptoms of stress, through a combination of specific and non-specific effects; but may not relate directly to how a person perceives their stress.
2. STUDIES ON ACHIEVEMENT OF INSTITUTIONS

Singh (2011), made a panoramic view of physical education and sports programmes for the wholesome development of school children of Karnataka state. To achieve the purpose of the study, the investigator randomly selected ninety schools, from Karnataka state, administered by different managements. Data for this study were collected both of primary source and secondary source. In order to assess the wholesome development of the Karnataka state students, this study aims at assessing the (1) Karnataka state students’ achievement in sports (2) Karnataka state students’ physical fitness levels and (3) Karnataka state students’ personality development. Participation and achievement in sports was collected through a well defined questionnaire, physical fitness levels of the students were assessed through a battery of physical fitness tests and personality development of the students were assessed through Personality Development Index (PDI) development by Kaliappan (1993). To get the panoramic view of physical education and sports programmes in the state, primary source of data were collected through a well defined questionnaire seeking data relating to : (1) Staff appointed for Physical Education and Sports (2) Time Allotted for Physical Education and Sports (3) Play ground and sports facilities provided (4) Funds provided for the physical education and sports and (5) Provision of Minor Games / facilities etc. The investigator personally visited the schools to collect necessary primary data from the schools. The data on physical fitness variables and personality development of the subjects were collected with the assistance of the Physical Education teachers of the respective schools. Secondary data were collected from published reports of Statistics Department of Karnataka, on (i) actual number of students enrolled in schools in the state, region wise, sex wise, nativity wise as well as management wise, (ii) actual number of teaching and non teaching staff employed in the state (iii) actual number of physical education teachers and coaches appointed in the state (iv) grants released to the schools for the promotion of sports and games in the state and (v) Number of students participated at district level, state level and national level sports meets in different games and athletic events, which was used for analytical purposes. The results
proved that Karnataka Schools are providing adequate facilities for physical education and sports programme in the form of physical teachers appointed, provision of supporting staff, coaches for coaching, time allotment for physical education classes, play fields for major games and track and field, sports equipments for major games and track and field, minor games and indoor games, department facilities and provision of funds for maintenance of grounds and equipments. The inputs made were indexed in the form of Physical Education Programme Index (PEPI) for assessment of the level of inputs made by different schools in Karnataka state and it was found that there was no significant difference among schools administered by different types of managements. The results also showed that there was no significant differences between sports participation of these schools except at lower level (intramural) and highest level (national level) competitions. There was significant relationship with Physical Efficiency Programme Index and sports participations of the schools except at higher levels (state and national). The results further showed that there was no significant difference among the school students’ physical fitness levels and there was no significant relationship between Phycial Education Programme Index and physical fitness levels of the schools. There was no significant difference among school students’ personality levels and there was no significant relationship between Physical Education Programme Index and personality factors of the students.

Ebidoss (2009) selected research tool “The normative survey method”. A questionnaire was prepared and used to collect necessary data from different colleges in Villupuram District. It was concluded that the average sports participation of the students in sports and games was 15%. And the number of students involved in active participation is very low ranging from 3% to 37%. It was concluded that the differences between the engineering, arts and science and polytechnic colleges in percentage of participation in sports and games was subjected to statistical analysis using ANOVA and the results proved that the differences between the groups were not significant. More than 50% of the Villupuram colleges participated in District, University and State level sports
meets and won laurels for their institutions. Most of the colleges encourage the
sports persons of their institutions through awards. About 40% of the colleges
gave grace marks to compensate the academic classes the sports persons
foregone. Sports scholarships were being sanctioned by nine colleges and six
colleges encouraged the students in different other ways.

Singh (2009) described management of Sports Equipment and Supplies
by College Physical Education Departments. In doing so, the study was to
analyze the methods of sports equipment purchases, amounts involved in
purchasing the sports articles, maintenance of sports equipments and other
articles among college Physical Education departments. More specifically the
study identified the methods utilized by Physical Education departments in
determining needs, inventorying, purchasing, receiving, and marking, issuing and
maintaining Sports equipments. It was concluded that in regard with management
of Sports equipments and supplies by the colleges department of physical
education, it is clearly understood that all the colleges provide sufficient funds for
the purchase of sports equipments. Sound management principles for the
purchase of sports equipments are followed by all the colleges such as receiving
suggestion from Physical Director, purchasing equipments from standard
companies and standard equipments. Maintenance and supply of sports
equipments, the colleges do maintain stock registers, issue register, worn out
register, etc. which are much helpful for the control and management of sports
equipments. The Physical Director is entrusted with this job. The physical
education department of the Colleges is provided with separate rooms for their
staff, equipments, first aid facilities etc.

Narendrakumar (2009) evaluated and compared the facilities and event
management in selected health club and fitness centers in Kanpur, Lucknow and
Allahabad cities. To achieve the purpose of this study, the investigator visited
Kanpur, Lucknow and Allahabad cities. The facilities and event management of
these selected health and fitness centers were compared for the purpose of this
study. The research tools selected for the purpose of completing the project is “The
A questionnaire was prepared and issued to selected health and fitness centers. It was concluded that the event management and achievement of the health centers were more than 68%, however, the differences in percentages among different cities, namely, Kanpur, Lucknow and Allahabad were not significant.

Milne and Shaw (2008) reported that The Beijing Olympics will be the world's premier sporting event in 2008. Countries should begin planning for appropriate support for their Olympic athletes. Experienced medical staff should be appointed early and become familiar with the major medical or injury concerns of athletes and officials. Teams should assemble a comprehensive medical kit. Appropriate medical advice can ensure that athletes will arrive in Beijing in optimal condition. Medical issues particularly relevant to competitors at the Beijing Olympics include heat and humidity, waterborne diseases and air pollution. However, the air pollution probably represents less of a threat than the previous media reports would indicate. The Olympic village and venues can be thought of as small enclaves located within a rapidly developing country.

Verma (2009) made a survey on health related physical fitness components among high school students in Kanpur district in Uttar Pradesh. To achieve the purpose of the study High school students studying in Kanpur district were surveyed on their health related fitness variables for this study. The investigator randomly selected two high schools managed by the government, two high schools managed by local body authorities and two high schools managed by private bodies. The age groups of the subjects were 14 to 16 years. The students were studying in VIII standard to Xth standard. Hundred students consisting of fifty boys and fifty girls from government schools, hundred students consisting of fifty boys and fifty girls from local body schools and hundred students consisting of fifty boys and fifty girls were selected for the study. Health related fitness variables, body mass index, flexibility, muscular strength measured through pull ups, muscular endurance measured through sit ups and endurance measured through 600 M run were selected for the purpose of the
study. It was concluded that the survey proved that high school students of Kanpur District, both boys and girls possess above average scores in the selected health related physical fitness variables and there was no significant differences among the students of different management schools and the students were equal in flexibility and differed significantly in body mass index.

Senthilkumar (2009) evaluated and compared the facilities and event management in Sports Development Authority of Tamil Nadu in Namakkal District. The investigator reviewed a number of books relating to curriculum design in physical education, fitness centers, organization of physical activities and health clubs. Apart from the books, the investigator also pursued number of research articles both published and posted in internet and found that Questionnaire method was widely used for similar studies. It was concluded that the district provides three categories of coaching programme, one for the sportspersons voluntarily approaches the Centre for coaching, individually or through institutions or through sports associations. An average of 200 sports persons in a year is benefited. Coaching programmes caters to the need of coaching different sportsmen of different levels. The annual intake under these programmes stands to about 500. The effort of Namakkal District SDAT has brought a number of laurels to the District, State and National. An average of 358 people participate at district level sports meets and among them about 13.61% were able to won or placed. About 49 sports persons participate at State level sports meets from Namakkal District and 29 persons forming 60% of them were able to succeed by getting places or winning. Of the average participation of 31 sports persons participating in national level meets from Namakkal District 10 persons win or placed.

Enock and Jacobs (2008) undertook a review of the literature relating to public health planning and interventions at previous summer Olympic and Paralympic Games and other relevant major summer sporting events or mass gatherings, with a focus on official publications and peer-reviewed articles. A literature review was undertaken using all biomedical databases and a free text
search using Google to widen the search beyond peer-reviewed publications. Search terms used were: Olympics, Paralympics, mass gatherings, mass gathering medicine, sporting events, weather, planning, and organisation. Citations within articles were searched to identify additional references that would inform this review. This literature review concentrates on the public health aspects of population care at mass gatherings, particularly the Olympic and Paralympic Games which are set over several weeks, focusing on surveillance, prevention and health service quality. The literature identified 10 areas of public health planning: public health command centre and communication, surveillance, assessment and control, environmental health and safety, infectious disease outbreaks, implications of weather conditions, health promotion, travel information, economic assessments, public transport and reduction of asthma events, and preparing athletes for potential allergies. The following themes emerged as crucial factors for the success of any public health interventions at Olympic and Paralympic Games: detailed planning of deliverables; pre-identification of critical success factors, management of risk, detailed contingency planning, and full testing of all plans prior to the event. The 2012 Olympic Games will provide an exciting challenge for public health providers and systems. Preparation requires early detailed planning of policies, procedures and on-site health promotion events, in addition, helping to set up the surveillance and monitoring systems that will capture public health activity alongside medical activity. Learning from the literature review will support the identification of critical success factors and help to formulate recommendations that will allow optimal utilization of public health initiatives. All plans require full costing in advance which are supported by internal and external health-related agencies, voluntary organizations and sponsors. A risk assessment should be undertaken as part of the planning process leading to risk management plans for mitigating identified potential risks. All surveillance and monitoring systems, communication, policies and procedures will require full testing prior to commencement of the Games.
Vijayakumar (2009) made an analysis of event management in Special Olympics. To achieve the purpose of this study, the investigator reviewed a number of related literature, books, and journals and visited web sites of Special Olympic organizations in different countries. The investigator identified the following criterion measures for analysis of event management in Special Olympics. (1) Establishment of Special Olympics at International level and at India (2) Organisational set up of Special Olympics (3) Method of Registration of Athletes, Participants, Motivators for Special Olympics (4) Methods of selection and training of coaches and trainers for Special Olympics. (5) Methods of grouping of competitors for Special Olympics (6) Events / Competitions organized at International level (7) Events / Competitions organized at National Level (India) and (8) Future Plans of Bharat Special Olympics. It was concluded that there were about 1000 athletes participated in the first Special Olympics organized in 1968, which grew to 7500 in the year 2007 and the National Special Olympics vigorously initiates two programmes, namely, Athletes Leadership Programme and healthy athletes for the benefit of their wards. Bharat Special Olympics started around 17,000 athletes in the year 2000; it has enrolled more than 3 lakh athletes by 2006.

3. STUDIES ON PHYSICAL EDUCATION AND SPORTS PROGRAMMES

Hobin et al. (2010) found that Schools can be an efficient venue for promoting physical activity (PA) among adolescents. Physical education (PE) requires investigation, because it is a variable associated with adolescent PA levels and its existence in schools represents a significant opportunity for strategies to combat declining PA levels among this population. This article examines between-school variability in student rates of PE enrollment among a large sample of high schools in Ontario, Canada, and identifies the school- and student-level characteristics associated with PE enrollment.

This cross-sectional study utilized self-reported school- and student-level data from administrators and students at 73 high schools. Students' enrollment in PE, demographic, behavioral, and psychosocial variables was linked to school
environment data comprising of school demographics and administrator assessed quality of policies, facilities, and programs related to PA. Analysis involved multilevel modeling.

The mean rate of PE enrollment among the 73 high schools was 62.4%, with rates by school ranging from 28.9% to 81.1%. When student demographics, behavioral, and psychosocial factors were controlled for, there was still a school effect for student PE enrollment. The school effect was explained by the provision of daily PE and school median household income.

This is the first study to examine the extent to which PE enrollment varies between schools and to identify school factors associated with school variability in rates of PE enrollment. Although most variation in PE enrollment lies between students within schools, there is sufficient between-school variation to be of interest to practitioners and policy makers.

**Castelli et al. (2007)** documented that the relationship between physical fitness and academic achievement has received much attention owing to the increasing prevalence of children who are overweight and unfit, as well as the inescapable pressure on schools to produce students who meet academic standards. This study examined 259 public school students in the third and the fifth grades and found that field tests of physical fitness were positively related to academic achievement. Specifically, aerobic capacity was positively associated with achievement, whereas BMI was inversely related. Associations were demonstrated in total academic achievement, mathematics achievement and reading achievement. Thus they suggested that the aspects of physical fitness may be globally related to academic performance in preadolescents. The findings are discussed with regards to maximizing school performance and the implications for educational policies.

**Cleland et al. (2005)** stated that the relationship between parental physical activity and children's physical activity and cardio respiratory fitness has not been well studied in the Australian context. Given the increasing focus on
physical activity and childhood obesity, it is important to understand correlates of children's physical activity. This study aimed to investigate whether parental exercise was associated with children's extracurricular sports participation and cardio respiratory fitness. The data were drawn from a nationally representative sample (n = 8,484) of 7-15 year old Australian schoolchildren, surveyed as part of the Australian Schools Health and Fitness Survey in 1985. A subset of 5,929 children aged 9-15 years reported their participation in extracurricular sports and their parents' exercise. Cardio respiratory fitness was measured using the 1.6 km (1-mile) run/walk and in addition for children aged 9, 12 or 15 years, using a physical work capacity test (PWC170). While the magnitude of the differences were small, parental exercise was positively associated with children's extracurricular sports participation (p < 0.001), 1.6 km run/walk time (p < 0.001) and, in girls only, PWC170 (p = 0.013). In most instances, when only one parent was active, the sex of that parent was not an independent predictor of the child's extracurricular sports participation and cardio respiratory fitness. Parental exercise may influence their children's participation in extracurricular sports and their cardio respiratory fitness levels. Understanding the correlates of children's extracurricular sport participation is important for the targeting of health promotion and public health interventions, and may influence children's future health status.

Mamalakis et al. (2000) reported that the body mass index (BMI), waist-to-hip ratio (WHR) and sum of skinfolds in a cohort of Cretan children and identify the factors associated with these indices. The present study was a follow-up study. Children were measured prospectively at ages 6, 9 and 12. Pupils came from 40 schools randomly selected from the 541 primary schools in three different provinces of Crete. 1046 pupils were examined at age 6. At age 9, a representative sample from the original cohort (n=579) was randomly selected for re-evaluation. At the age of 12, a sample of 831 pupils was re-examined, following similar procedures. Both during baseline and each subsequent follow-up, data were obtained on pupils' anthropometry, serum lipids, dietary intake, physical fitness and physical activity as well as their dietary and their health.
knowledge. Data on parents' anthropometry, age, occupation, educational level, and issues relating to health habits, attitudes and knowledge were also collected. Half of the obese children at age 6 were also obese at age 12. Cretan children had higher mean BMI than similar American cohorts. Compared to their American counterparts, Cretans had higher proportions of overweight in both genders across all ages tested. The endurance run test (ERT), an index of physical fitness, was positively associated with obesity indices. Sum of skinfolds related positively to serum LDL-C. Children from urban areas had higher skinfold sum than children from rural areas. Parental health-related hedonism related positively to children's BMI. It appears that these findings offer some support to the reported increasing prevalence of obesity among the Greek children. Higher ERT, presumably reflecting higher physical activity, is associated with lower obesity. The relationship between degree of fatness and LDL-C appears to be evidenced at an early age in life. This relationship may relate to the reported VLDL and cholesterol ester transfer protein elevations in obesity. The parental attitude of health-related hedonism appears to be linked with children's adiposity.

Al-Nakeeb et al. (2007) documented that the decline in physical activity levels of young children seems to be combined with a high prevalence of obesity and overweight and a reduction in the participation in organized sport. With the ever-increasing interest in exploring the relationship between physical activity and obesity amongst children, it is important to provide a more precise estimate of both physical activity and body fatness. A significant proportion of previous research on this topic has relied on self-report methods to assess physical activity and body mass index as a proxy for actual body fatness. There is a need to investigate the relationships between physical activity and fatness in children using objective methods. AIM: This study was conducted in order to explore the relationship between physical activity patterns and percentage body fat amongst a group of primary school children. Subjects and methods: Forty-seven primary school children (boys, n = 23; girls, n = 24) participated in this study. They were randomly selected from children in years 5 and 6 (9-11 year olds) of four schools drawn from the same catchment area in the city of Birmingham, UK. The
frequency, intensity and duration of physical activity were determined using 
continuous heart rate monitoring from 8:30 am to 8:30pm over three separate 
days (two weekdays and one weekend day). Percentage body fat was assessed 
using air displacement plethysmography. Results indicated that 52% of children 
did not achieve a single 15-min bout of sustained moderate physical activity over 
the three days of monitoring. Independent t-tests revealed that girls were 
significantly fatter (t44 = -3.126, p=0.003) than boys. There was no significant 
difference (t45 = 0.225, p > 0.05) between boys and girls in accumulated time 
spent with heart rates above the moderate physical activity threshold. Pearson's 
product moment correlation coefficients revealed no significant (r= -0.017, p> 
0.05) relationship between per cent body fat and average daily time spent in 
moderate and vigorous activity. Despite the prediction to the contrary, there was 
no evidence of a significant relationship between percentage body fat of children 
and time spent in moderate and vigorous activity. Additionally, while there were 
no significant gender differences in physical activity patterns; children were more 
physically active during weekdays than weekends.

4. STUDIES ON ACHIEVEMENTS IN TERMS OF SPORTS PARTICIPATION

Köiter et al. (2009) investigated participation in sports activities and 
risk-taking behaviour in children with hemophilia and the relationship to personal 
and health related factors. Ninety-nine children (mean age 12.6 years) completed 
questionnaires regarding participation in sports and physical education, 
medication, health related quality of life, and perceived motor competence. 
Furthermore, weight, height, active range of motion, pain, and muscle strength 
were assessed. Based on a risk exposure factor (REF) we defined subgroups with 
low, medium and high risk when they are participating in sport. Most children 
participate in sport five times a week (mean 140 min per week), and little absence 
during school sports was reported. In general, prophylaxis was not tailored to 
sport activities. Boys with hemophilia preferred other sports than their Dutch 
contemporaries. The top-5 being soccer, swimming, tennis, gymnastics, and 
cardio-fitness for the former; soccer, gymnastics, tennis, hockey, and swimming
for the latter. Significant differences between the low risk group and both other groups were found for sport intensity, total energy expenditure (EE) and average risk factor (ARF); however the medium and high-risk groups did not differ in ARF. REF and sport participation increased associated with increasing interest in athletic and motor activities. No significant differences were found between REF groups regarding age, Z-BMI, Z-AROM, Z-Muscle force, and the presence of painful joints. As in normal peers motivation to participate in sport depends upon the enthusiasm and interest, in children with hemophilia choice of sports differs, probably related to sport advice.

**Salselas et al. (2007)** examined the relationship between participation motives and level of practice in young Portuguese swimmers and to investigate whether swimmers with a different expertise differ in their reasons for participation involvement. A total of 155 subjects (68 male and 87 female), aged 7 to 18 years, and responded to the Portuguese versions of the Participation Motivation Inventory. The subjects were divided into those participating in learn-to-swim programs (n=40), advanced programs (n=49) or competition (n=56). A significant multivariate effect was obtained for level of practice, with children involved in learn-to-swim programs rating fitness, competition, general affiliation, technical skills and fun significantly lower in importance than the other two groups. A 2 (subject gender) x3 (practice level) MANCOVA, with age at dropout, revealed that the effect of the covariate itself was not significant, but a main effect was found for gender, differing boys and girls only in the emotion factor. A significant interaction was also detected between gender and participation level, with a higher importance given to general affiliation by girls in comparison to boys in the advanced programs and competition categories. Our results in a sample of the Portuguese swimmers indicate the existence of multiple motives for participation and significant differences in motivational factors in relation to the practice level.

**Salguero et al. (2004)** examined the relationship between participation motives and perceived physical ability in young Spanish swimmers and to
investigate whether swimmers with high or low perceived physical competence differ in their intrinsic and/or extrinsic reasons for participation involvement. Four hundred and twenty-eight swimmers (204 boys and 224 girls), aged 8-22 years, responded to the Spanish versions of the Participation Motivation Inventory (PMI) and the Perceived Physical Ability Scale (PPA). Swimmers were divided into low (below the 33%), medium (between the 33-66%) and high (above the 66%) perceived ability groups. Multivariate analysis indicated the existence of differences in motives for participation between swimmers with different levels of perceived physical ability. Follow-up univariate analyses yielded significant (p<0.05) effects for 5 motivational factors: health/fitness, fun/friendship, competition/skills, affiliation and status. In all cases swimmers high in perceived physical ability rated significantly higher than those in the other categories. The PPA by gender, age or level of expertise interaction was not significant. Practitioners must consider the perceived ability of the competitors to better structure the social environment within which their swimmers operate.

Chen et al. (2003) assessed the validity of a self-reported questionnaire designed to measure children's physical activity. Subjects were 34 boys from 4th to 6th grade of a public elementary school. Contents of the self-reported physical activity questionnaire included participation in sports club, physical activity intensity, preference for physical activity, and frequency of physical activity. Subjects were equipped with a Lifecorder and an Actiwatch for 7 consecutive days to monitor physical activity. Physical activity index was calculated from the Lifecorder data of total energy expenditure per day (TEE) divided by basal metabolic rate. Unpaired t-test, analysis of variance, and multiple linear regression analysis were performed to clarify the relationship between the objective and the subjective data. The subjects who reported participation in a sports club had a higher physical activity index and energy expenditure originating from physical activity than those who did not. Those characterized by a "vigorous" physical activity intensity had a higher physical activity index (1.63 +/- 0.08), when compared with peers in "moderate" (1.59 +/- 0.06) or "light" categories (1.54 +/- 0.07) (p for linear trend p < 0.05). A high frequency of
physical activity was significantly associated with an increasing trend in energy expenditure originating from physical activity, steps, and activity counts. Preference for physical activity was significantly related to data from the Lifecorder and the Actiwatch. The school children's self-reported physical activity is in accordance with the objective data, and could be used as a valid measure to evaluate physical activity level in school settings.

Hines and Groves (1989) studied the competition and its influence upon the adolescent is the primary concern of many recreational agencies. In the past ten years, many youth agencies have de-emphasized competition in their programs because of its negative influence upon self-esteem. There is a need to examine the relationship between competition and self-esteem so that recreational programs can be better designed to utilize competition as a positive factor. A study was undertaken to examine self-esteem in relation to competition in a basketball program. It was found that the coach's assessments of ability and intention of participation are important factors in positive self-esteem development. The social aspects of peer interaction and parent influence also contribute to positive self-esteem. These are minor elements, however, in comparison to the impact of the coach. There needs to be intensive training for coaches on how to develop positive self-esteem and how to deal with the range of participation styles.
SUMMARY ON RELATED STUDIES

In this chapter the researches reviewed related studies, how different pragmatic approaches were made in health programmes. Reviews were also presented on analyzing achievements, physical education programmes and analyzing achievements in terms of sports participation by institutions.

The reviews proved that there was further scope for research to make a pragmatic approach of physical education and sports programme and the achievements of school students in Union Territory of Pondicherry. Based on the experience gained through related studies, the investigator formulated suitable methodology to be adapted in this research, which is presented in Chapter III.