

THE UNIVERSITY OF HULL

Psychosocial Perspectives of Sport and Exercise Participation during Adolescence

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by

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In Memoriam

This thesis is dedicated to my father, Myer Hirsh Bromnick (1918-1991). He loved sport, especially swimming, football and athletics. Throughout his life he sustained his interest as a keen participant, referee and coach. With patience and understanding he was able to instil the joy and value of sport into the lives of thousands of young people.

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Summary

Psychosocial perspectives of sport and exercise participation during adolescence.

Scientific evidence attests to the health-related benefits of habitual physical activity. Coexisting with this evidence are findings which show that most people do not exercise with sufficient frequency, intensity or duration to accrue the benefits associated with participation. The focus of concern in the current research was on an adolescent population.

In this cross-sectional study patterns of sport and exercise participation were related to self and social factors. The survey contained the Physical Self-Perception Profile-PSPP (Fox and Corbin, 1989) used to examine self-perceptions in the physical domain; the Perceived Importance Profile-PIP (Fox and Corbin, 1989) used to investigate the importance of feeling competent in each of the PSPP subdomains; scales especially designed for this research which measured socialisation influences on physical activity; and a scale to measure 'body-constancy', a factor thought to relate to the disruption/inconvenience associated with activity. Altogether, data were collected from 604 young people from ages 11 to 18 years (mean age 13.26, sd 1.48).

The results showed a significant downward trend in participation with age, with males more active than females at all ages. However mean levels of participation were above the recommended minimum, suggesting that only the minority were sedentary. Males scored significantly higher than their female counterparts on all self-perception

variables, as well as perceiving greater peer support for activity. There was an equal perceived influence from parents, although this declined with age. Further evidence for the validity of the PSPP was obtained from this sample. The results supported the notion that the process of down-rating competence acts to buffer self-esteem, but further work was advocated to validate the PIP with adolescents.

Regression analysis showed that physical self-perceptions, perceived importance, peer and parental influence, age and gender all contributed to the prediction of participation. Altogether, 26% (adjusted) of the variability in participation was predicted. The results were discussed in a developmental context, which considered the future for youth sport participation.

Chapter 1

Youth Sport Participation

1.1 Introduction

Traditionally, young people's involvement in sport has been considered to be an important part of development, leading to a range of beneficial outcomes such as sportsmanship and self-discipline (Wiggins, 1987). The academic interest in youth sport has crossed many disciplines, including psychology, sociology and education, as well as incorporating those more involved in youth work, leisure provision and policy.

Most recently, attention has been drawn more specifically to the health-related outcomes of regular physical activity. There is a burgeoning body of well documented, scientific evidence to show that regular exercise in adults leads to significant changes in biochemical and physiological function, each of which is linked either to a favourable effect on the progression of disease, to amelioration of the effects of disease or to a role in the prevention of disease (Paffenberger, Hyde and Wing, 1990). Less often cited, but of equal importance, is the evidence that physical activity can enhance psychological well-being and aspects of mental health (Stephens, 1988). Being physically fit can also serve to protect people from the deleterious effects of life stress (Brown, 1991).

Of prime concern is the adolescent population. The effects of physical activity have been less well researched than in adulthood, but the evidence that does exist suggests that active young people can significantly benefit from a lifestyle that includes regular exercise (Biddle, 1993). This may come about both in the short term, as high intensity aerobic exercise has positive effects on well-being (Norris, Carrol and Cochrane, 1992) and also in the long term, as regular exercise can help modify the risk of adult onset disease.

Bone architecture has been shown to change as a result of weight-bearing activities, with higher levels of physical activity leading to greater bone mass and bone mineral content (Bailey et al. 1986). Weight-bearing and muscle-loading exercise which takes place during adolescence, before growth ceases, can increase peak bone mineral density, and help prevent the debilitating disease osteoporosis (Law et al. 1991). In fact, in this review paper Law et al. (1991) posited that regular exercise during the growing years was the most effective and desirable intervention to prevent an individual reaching an osteoporotic threshold in later life, with the potential to half the risk of hip fracture, saving considerable individual and National Health Service cost.

Controversies exist over the exact nature of the relationship between level and type of physical activity and bone mass. Intensive training in some female athletes has been linked to an increased risk of amenorrhea (Harrison and Chow, 1990) and this can lead to a lowered bone mass and stress fractures. Hence, more research is needed to ascertain the optimal quantity of exercise for osteoporosis prevention, although an evaluation of the available evidence by Biddle and Mutrie (1991) suggested that for

only the minority, who train in the extreme, will activity be detrimental to developing healthy bones.

The reasons for ensuring sustained sport participation in adolescence are at least threefold. Firstly, for maintaining optimal health during adolescence, secondly for helping to modify the risk of disease that may occur later in life and thirdly for promoting and sustaining an attitude/orientation that ensures regular exercise becomes a lifelong, lifestyle habit. The health status of the nation's youth is a major predictor of future productivity and well-being. Simons-Morton et al. (1988) in America stated explicitly that the public health goals for Physical Education were to a) increase the proportion of youth who obtain daily physical activity and to b) increase the likelihood that children will become habitually physically active throughout their lives. These primary goals for young people's exercise motivation have been mirrored also in statements from British academics (see Fox, 1991a).

Adolescence is an important time for continued exercise involvement, but appears to coincide with a developmental transition, where it seems even previously active young people often lessen their sport and exercise participation. This pattern has consistently been shown to be particularly marked in young women (see, for example, Armstrong, Balding, Gentle and Kirby, 1990). The decline has been shown to continue beyond the end of compulsory schooling (at 16 years) for both boys and girls, with the largest drop occurring at the minimum school leaving age (Stephens, 1987, Hendry et al. 1993).

This study will provide an exploration of these patterns of sport and exercise participation in young people. The review of literature will include the debate over the nature and the direction of the concern about participation levels. A full examination of the gender issues in sport will be given, outlining different perspectives of the way male and female participation has been seen. The main thrust of the review will be in the factors that have been shown to account for individual differences in sport and exercise participation during adolescence. This will include theoretical advances in the understanding of sport-related behaviour and contemporary empirical work. This work will be placed in the context of normative developmental processes during adolescence. Arising from this, the need for the current research will be shown.

1.2 Definition of terms

Before the review of literature is undertaken in full, it is necessary to define the major terms that are operationalised in this study. Most of these terms reflect social or psychological constructs, which often have commonly held meanings, as well as different nomenclature used in academic research. Within each chapter the definitions of particular terms that are used will be fully explained. In this chapter attention will be drawn specifically to the definitions and terminology used to describe young people and physical activity.

1.21 Defining adolescence.

Coleman and Hendry (1990) outlined three broad theoretical approaches which describe the way in which young people have been viewed in academia. These were psychoanalytic theory, sociological theory and lifespan developmental psychology. Representations in turn define young people within each perspective and characterise the areas for research concern. These approaches are all very different but have arisen with the common aim to define a distinctive period in the lifespan that starts at the end of childhood and finishes when adulthood is reached. Adolescence usually encompasses the second decade of life. The end of adolescence has tended to be socio-legally defined such as the age of consent for sexual intercourse, alcohol and cigarette use.

G. Stanley Hall (1904) is thought of as having 'discovered' adolescence. His theoretical approach saw the transition as being an inevitable stage of 'storm and stress'. This approach became a strong influence to the psychoanalytic and sociological literature to come. The lifespan developmental psychology approach, which is taken here, has provided much evidence to mitigate against storm and stress theories (see Hill, 1993, for a review), such that the work of G. Stanley Hall is no longer even referenced in major British texts (e.g. Coleman and Hendry, 1990).

The traditional definitions given by psychologists have tended to be quite biologically orientated, characterising adolescence as starting with the onset of puberty and ending when sexual maturity is reached. The acknowledgement of the transacting and

interacting, *reciprocal* developmental processes that occur during the transition have resulted in the development of advanced biopsychosocial models. This approach has been largely led by Brooks-Gunn and associates. This research has become increasingly more complex. In a recent paper, eight models for studying the relationships between pubertal changes and adolescent affect and behaviour were discussed (Brooks-Gunn, Graber and Paikoff, 1994).

The early research that pathologised the transition led to a disavowing of the term 'adolescence' amongst some psychologists (e.g. Simmons and Wade, 1984).

Sociological theories of the transition have tended to be dominated by descriptions of stresses and tensions during this time, due to role changes and socialisation factors (Coleman and Hendry, 1990). Because of the biological connotations, the term 'adolescence' appears never to have been popular with sociologists, who have favoured the use of the term 'youth'. It is not the intention here to be further concerned with these arguments of representation and definition. Griffin (1993) has provided an excellent text on this subject, reviewing historical, political, social and psychological aspects of the transition from 1880 to 1980, and is strongly recommended.

For the purpose of this study the term 'young people' will be favoured but this will be used synonymously with 'adolescence', 'youth' and the less contestable term 'teenagers'. As all of the young people who participated in this study were in full-time education, the term 'pupils' will also be used to define them collectively. The terms

‘young women’ and ‘young men’ will be used when it is necessary to distinguish gender, as well as females/males and girls/boys.

1.22 Defining physical activity.

The variety of terms used in this field have not been easy to define. Writers have often tied themselves into tautological knots, such as Mercer (1989) who described ‘physical activity’ as ‘habitual physical activity’. The terms used in the current study will follow the review of Biddle and Mutrie (1991). They cited the definitions provided by Caspersen et al. (1985), who conceptualised physical activity as muscular-produced movements of the body, resulting in energy expenditure and correlating with physical fitness. Caspersen et al. (1985) distinguished physical activity from exercise, the latter being seen as a sub-category of physical activity, characterised by being planned, structured and involving repetitive body movements, with the objective to improve or maintain physical fitness.

The definitions provided by Rejeski and Brawley (1988) have been often cited and are accepted here. They defined ‘sport’ as a subset of exercise, which included activity which was governed by rules, competitive, structured and involved strategy and skill. In this study the word ‘games’ will also be used to describe physical activities that are unstructured and played more informally than sport. When an activity could be played as a sport or as a game, such as football, the appropriate term will be selected according to the context.

‘Sport and exercise’ will be used interchangeably with ‘physical activity’ to include; sporting activities e.g. rugby; stamina and fitness activities, e.g. jogging; strength and muscular activities; e.g. weight-training as well as other physical activities that attract participants such as ice-skating. These are not seen as inclusive sets. Activities can fall into different subsets according to the motivation of the participant. For example, swimming can be rule-bound and competitive, or used to build tone, stamina and strength.

In addition, ‘physical education’ will be used to refer to physical activities taught within the school curriculum. These currently include competitive games and sport; outdoor pursuits, aesthetic movement-based activities and conditioning activities (DES, 1991).

Further discussions of the problems of defining physical activities and measurement issues will be provided in chapter 2.

1.3 The concern over levels of physical activity participation.

It is beyond the scope of thesis to review all of the findings attesting to the health related outcomes of regular exercise, as these can be found in excellent, thorough reviews elsewhere (Bouchard et al. 1990, Biddle and Mutrie, 1991). However it is worth highlighting the evidence focusing on the problems of coronary heart disease (CHD) and its relationship with physical activity.

Cardiovascular disorders have been shown to rank second in terms of certified days lost at work, accounting for the second highest number of hospital admissions (after cancers) and CHD is the leading cause of mortality in males and females (Barker and Rose, 1990). CHD is a major health problem and expense. The UK government has aimed to reduce the occurrence of CHD and associated death and ill-health by at least 30% between 1988-2000 ('The Health of the Nation', 1991). These are ambitious, if admirable, aims.

Powell et al. (1987), in their influential review, reported that physical activity was inversely and *causally* related to the incidence of CHD. Although the exact mechanisms of this relationship are still being debated, the weight of evidence is consistent in indicating a strong link, either by direct, independent action or through modifying other risk factors such as obesity, hypercholesterolemia and hypertension (Goldberg, 1989).

It is reasonable to conclude from the current epidemiological and empirical studies available that regular physical activity can constitute an important element of a healthy lifestyle.

Despite the apparent fitness-boom of the 1980's, coexisting data also has shown that only a small minority of people exercise of sufficient intensity, duration or frequency to accrue any such benefits (Allied Dunbar National Fitness Survey, 1992). In this large survey of physical fitness and activity within the British general population, only approximately 40% of men and 30% of women aged 16-74 years took part in some form of *vigorous* activity during the four weeks prior to the research interview. Of these, only 14% of men and 4% of women did so three times a week, for at least 20 minutes on each occasion, at a level of activity identified as valuable for building stamina and offering protection against CHD. In addition, even for those who attempt regular physical activity, the dropout rate from most exercise programmes is typically high, ranging from 35% and 80% (Dishman, 1988). Surveys that have specifically targeted children and adolescents also have found low levels of activity, leading to concern over cardiovascular fitness (e.g Thirlaway and Benton, 1993).

These findings are consistent with the General Household Survey of 1990 which reported relatively low levels of activity. The majority of men had taken part in at least one sporting activity in the month preceding the survey (although snooker, billiards and pool were commonly reported sporting activities) whereas a quarter of the women surveyed took no activity other than walking. It is only amongst exercise scientists that there is a surprise that adults do not participate at sufficient levels, despite the

weight of evidence attesting to the health-related benefits. Even amongst those who are not completely sedentary, participation in physical activity may not be predominantly mediated by health and fitness goals (Siegel et al. 1988).

These areas of research have been drawn together, seeing the emergence of exercise psychology. Here the emphasis is on teasing out the motivational processes underlying participation in exercise (Biddle and Fox, 1989) as well as examining the psychological outcomes of participation (Biddle and Mutrie, 1991). It is thought that if the process is positive (i.e. people motivated sufficiently to engage in regular exercise) then the products from activity will follow on. With CHD risk, for example, questions still remain as to whether it is physical fitness developed through intense aerobic activity or habitual physical activity that is critical in the risk reduction. Either way, the *product* of fitness is contingent on the *process* of regular physical activity. As Godin et al. (1991) suggested, from their study of intentions to exercise in men recovering from CHD, the emphasis for intervention should be placed on frequency, regardless of intensity, in order to encourage individuals to initiate and adopt habits with regard to exercise.

Regular exercisers have been shown to differ from those with less active lifestyles in several ways. Gauvin (1990) found, most notably, that those who were active had participation motives that were geared mainly toward fitness-health and aesthetic aims, but the aspect they enjoyed the most about their participation was the task itself. They were also more likely to indicate that they did not need to do any special planning to ensure that they regularly attended workouts. It is worth emphasising Gauvin's (1990)

finding that these regular exercisers, although primarily motivated by product aims, found the process of participation intrinsically rewarding. Also, the less active subjects in this study (e.g. those who infrequently attended organised classes, or were non-exercisers) reported having to 'push themselves' or do an extensive amount of planning to ensure exercise participation. When the potential products of physical activity are considered separately it is the proximal, rather than distal outcomes, that are more highly valued motivators (Rodgers and Brawley, 1991).

The need for improved levels of sport and exercise participation has become an important concern in most Western countries. This is largely seen as being due to changes in work patterns and transport leading to a situation where sedentary lifestyles are now predominant. In the UK, physical exercise has been highlighted as a major factor that can improve mortality rates, ill-health and healthy living and is one of the key target areas in the Government's white paper 'The Health of the Nation' (1991).

Much less is known about both the health outcomes and underlying perceptions of physical activity in children and adolescents. However, the interest and commitment to sport and physical activity, as well as many risk factors, may be established in youth (Sallis, 1987). Simons-Morton et al. (1987) suggested that adults' disinclination to exercise is linked to a lack of favourable physical activity during adolescence.

Evidence from a longitudinal study of a national birth cohort showed that physical activity in adolescence was associated with participation in active sports at age 36 years. Those who showed a high level of activity at age 36 were much more likely to have showed above average ability in sport and games during their adolescence than

those whose ability was considered being of average or below at this time (Kuh and Cooper, 1992). In the Young People Leisure and Lifestyles (YPLL) survey of 1991 (see Hendry et al. 1993), positive attitudes towards sport showed a decline between the age bands 13 to 14 years and 15 to 16 years, although thereafter no further deterioration occurred. The authors see sporting attitudes as set prior to the minimum school leaving age being reached, indicating the central function that schools have in the promotion of sport during adolescence.

Findings from Ferguson et al. (1989), of attitudes towards exercise in school children, also highlighted physical education programmes in schools as a major target area for encouraging active lifestyles. The young people in this study who perceived exercise as beneficial, who exhibited positive attitudes about physical education, who had high self-esteem and who perceived themselves as able to maintain commitments, were more likely to intend to exercise in the future, than those who did not exhibit such attitudes.

This study also reiterates the need for intervention based on *both* the process and product of physical activity. Ferguson et al. (1989) emphasised the need for PE programmes to be an enjoyable process but also that teachers should pay particular attention to the positive benefits, both short and long term, of an exercise programme. Teachers in this study pointed out that their pupils responded well to comments about the positive short term benefits of being physically fit, especially in terms of improved appearance. Although it can be questioned as to how meaningful young people find the potential long term payoffs from exercise, the authors suggested that pupils who

observe self-improvements in heart rate and endurance, might also learn to recognise the long term benefits of cardiovascular fitness.

Epidemiological studies have suggested that risk factors for coronary heart disease can be identified early in life. Cohen et al. (1991) cited evidence that showed that although clinical symptoms and markers of atherosclerotic disease may not manifest themselves until middle or late adulthood, CHD may be present as early as the first decade of life. They suggested that individuals may have substantial coronary artery disease present by their third decade. Whether regular exercise will reduce the CHD risk of children requires further investigation, but interventions, such as in changes in diet and increases in physical activity have been acknowledged as positive and safe interventions (Vaccaro and Mahon, 1989). Certainly a number of specific community and school projects now exist to increase activity levels and awareness of young children. The Heart Smart programme, for example, is a multifaceted health education intervention for children in kindergarten through to grade 6 (ages 10 to 11 years), designed to meet the "1990 Objectives of the Nation" in the USA. Based on promoting self esteem through mastery experiences it aims to encourage learning and maintenance of health-enhancing behaviours, such as physical exercise and fitness, nutritious eating habits, and avoidance of drugs, smoking and alcohol. Preliminary findings support the potential for such programmes (Hunter et al. 1990).

Cohen et al. (1991) attempted to increase the awareness and appreciation of the importance of health and fitness in a small sample of 8 to 12 year old children, identified by a referring paediatrician as physically inactive and obese. They also aimed

to establish in these children a pattern of aerobic physical activity and balanced diet, which would mitigate against several CHD risk factors, specifically hypercholesterolemia, obesity and physical inactivity. The intervention was based on 'Fit For Life For Kids', a one month lifestyle modification programme.

Curiously, Cohen et al. (1991) reported their intervention to have been 'somewhat successful', although the children showed no significant decreases in weight, skin folds, their ability to do a sit-and-reach flexibility task, serum cholesterol or willingness to make permanent changes in their diet. The only significant differences were moderate increases in performance on some of the physical endurance tasks. Contrary to the intentions of Cohen et al. (1991), there was no evidence to suggest the experience during the programme would translate into helping these children to value physical activity and change their lifestyle.

What was lacking from this particular study was any overt acknowledgement of the psychological processes concomitant to physical activity (or eating habits). There was no attempt to take account of the children's motivational orientation, attitudes or self-esteem, for example. Nor was there any suggestion that these physical activities were enjoyable. These were essential factors to have missed. Freedson and Rowland (1992) stated that 'fun' should be seen as the primary component of any physical activity programme for children, necessary to enhance the chances of an active lifestyle being carried throughout adolescence (and hopefully beyond).

Interventions such as 'Heart Smart', which centre on the process of participation, are more likely to be efficacious than the 'Fit For Life For Kids' type, which appears to only have product aims.

Although committed to researching ways to encourage young people to develop life-long exercise habits, Ferguson et al. (1989) were less optimistic than others that the USA health objectives for physical activity and exercise in the 1990's will be met. They viewed the aims as far too ambitious, given that it called for 60% of children aged 10 to 17 years to participate in *daily* physical education. As with the UK government's 'Health of the Nation' objectives for adults, reaching the targets set would require behavioural change on a quite unprecedented scale. Also with the pressing demands of the National Curriculum in English schools it seems unlikely that Physical Education will increase its current status on the timetable.

Chapter 2

Literature Review

2.1 A product-process distinction: Youth fitness versus youth activity.

The notion of whether it is the product or process of physical activity that is important to children's health has been brought to the fore through major scientific debate, on both sides of the Atlantic. This has centred around whether children need to be *fit* (product) or *active* (process) or both to maximise positive states of health and minimise the risk of disease development in adulthood.

The journal 'Research Quarterly for Sport and Exercise' provided a special forum for this debate, with contributions from multidisciplinary experts in youth fitness (1992, vol. 63, no. 2). Corbin and Pangrazi (1992) presented an analysis of their own data together with reanalyses of data from the National School Population Fitness Survey-NSPFS (Reiff et al., 1986), with a view to assessing the fitness of American children and youth. Children meeting norm-referenced standards were compared to numbers meeting more recently adopted criterion-referenced health (CRH) standards.

Two fundamental questions central to this debate were addressed. Firstly, 'Are American children and youth physically fit?'. The NSPFS study produced alarming statements of low level performance on physical fitness testing, such that 19 to 35 % of boys and 21 to 51 % of the girls (depending on the age group) failed to meet a variety

of fitness standards, such as for shuttle runs. However, Corbin and Pangrazi (1992) concluded that although many of the children did not come up to standard on all the items of a multiple item battery, the majority met standards for individual test items using criterion-rated health standards. They asserted that children in these studies may in fact not have been as lacking in fitness as previous reports have implied.

The second issue concerned whether the fitness level of American children and youth had changed over the years. Through detailed analysis of yearly changes Corbin and Pangrazi (1992) could find no trend towards decreased performance over the decades. They even suggested that children's performance on fitness tests recorded in 1985 could be argued to be superior to those from 1958. The authors stressed that there is little, if any, evidence to indicate that children and youth are less fit than in previous decades, although they rightly point out that few of the same health-related fitness variables have been studied over time, making it difficult to conclude on this issue with any degree of confidence.

Corbin and Pangrazi (1992) concluded their review by highlighting the limits of a sole focus on physical fitness levels. They stated that the need to encourage and monitor levels of regular physical activity in young people is of equal, if not greater, importance in terms of promoting a lifelong exercise habit.

Not surprisingly Kuntzelman and Reiff (1992) defended their NSPFS data, this time adding personal and clinical observations to their evaluation of published research, in a counter attack to Corbin and Pangrazi (1992). They discussed the second of these

questions and concluded that over the past 50 years the skinfold thickness and weight of American children have increased (factors thought to be associated with fitness). Also, they provided data to show that the ability of these children to perform adequately on distance runs, recorded in the past ten years, has significantly worsened. Kuntzleman and Reiff (1992) were adamant that children's fitness levels on selected health-related fitness tests (e.g related to cardiovascular and body composition) has declined over time. The authors went on to present evidence that as children's fitness levels improve, some coronary heart disease risk factors also make positive changes. Children rated as having very poor or poor fitness levels consistently had poorer scores than those rated as having good or excellent fitness levels on physical measures such as blood pressure, skinfolds and cholesterol levels.

Updyke (1992) continued the debate by highlighting the multifaceted nature of physical fitness. He pointed out that disagreement on this topic may have arisen, in part, due to the fact that the components of physical fitness may not correlate with each other. Hence in answer to whether fitness has declined over time in children he suggests that one component may have improved over the same time period that another has remained stable or deteriorated. Updyke (1992) mentioned explicitly that rather than viewing physical fitness in terms of what an individual can do or the capabilities one should possess, there should be an alternative conceptualisation of fitness as an exclusive product of physical activity. In this scheme the critical variable is the degree of physiological adaptation the individual experiences as a direct result of physical activity. Within Updyke's (1992) definition "many fit children are inactive and many active children are unfit" is seen as an oxymoron.

In terms of providing intervention that will ensure people develop healthily and reap the benefits of physical activity and fitness throughout life, Updyke (1992) concurred with Corbin and Pangrazi (1992) as to the problems of setting goals and standards for children. They pointed out that if goals and standards are set too high many children become frustrated, whereas if they are set too low, children's achievement will not be valued and their interest in physical activity would wane. Updyke (1992) suggested that resources should be directed towards a further understanding of how best to customise criteria for young people, rather than expect them all to perform to a national standard.

Blair (1992) also largely agreed with the methods and conclusions of Corbin and Pangrazi (1992). He suggested that the NSPFS data revealed not that children are unfit *per se*, but that the standards used were too stringent. Blair (1992) refuted the idea, that over the past 35 years, children have become any more unfit and discredited a lot of such data as 'propaganda'. Like Corbin and Pangrazi (1992), Blair side-stepped some of the difficulties of assessing youth fitness by focusing on the physical activity habits of young people, which he also stressed were of greater importance. The data he reviewed from the National Children and Youth Fitness Study I (Ross, Dotson and Gilbert, 1985) supported the view that children and youth were more active than adults and that most of those children surveyed were in fact active enough to receive the important health benefits from their activity. Nonetheless Blair estimated that the health of 20 % of American children may be at risk because of low

levels of fitness. This is equivalent to 8 to 9 million American school aged children and therefore are an important age group to target for intervention.

Safrit and Looney (1992) continued the debate by raising an important question, one which is central to this thesis, namely “ how do we encourage children to participate voluntarily in physical activity on a regular basis”. Unfortunately it was rhetoric only and the authors do not answer this. Safrit and Looney (1992) sided with the analysis provided by Corbin and Pangrazi (1992) but suggested that fitness standards were necessary measures to reflect the health status of children. They suggested that lowering fitness standards to sustain children’s motivation is not justified.

The fitness versus activity debate was further discussed by Gutin, Manos and Strong (1992). In an attempt to redress the position of Corbin and Pangrazi (1992), Gutin et al. (1992) discussed definitions of health and fitness, reworking the original definition of the World Health Organisation (WHO). This was provided by Bouchard et al. (1990) and defined fitness as “the ability to perform muscular work satisfactorily”. Gutin et al. (1992) modified this as “the ability to carry out physical activities satisfactorily”. They suggested that fitness test items should involve physical activity and /or measurable parameters shown to be highly related to the ability to perform physical activity ‘satisfactorily’. Hence by this definition it would be impossible for an individual to be fit and not active.

Gutin et al. (1992) also provided a useful model of health and fitness. Essentially, they viewed physical activity as progressing from a minimal to intense level, with fitness

seen to improve correspondingly along a continuum. The ability to perform physical activity satisfactorily was seen as a means to achieve health benefits. Thus the model also included medical and perceptual components, organised along the continuum. At the lower end of the medical continuum individuals may show signs of disease and at the moderate levels asymptomatic disease may be present. Further up the continuum good health is characterised by the absence of risk factors or latent disease. If an individual is involved in high levels of activity fitness they progress in line with the medical and perceptual continuum. However the model also included a far extreme where exceptionally high levels of activity may not be associated with a higher level of health and well-being, for example when intense training leads to a stress fracture. The perceptual continuum indicates a proposed relationship between physical activity and well-being. Hence the continuum ranges from 'feeling bad' at the minimal active level through to 'feeling great' at the moderate activity level. The model leaves a question over the self-perception rating at the intense activity level, but states generally that increased activity promotes fitness, health and well-being.

Freedson and Rowland (1992) followed on by providing more arguments in favour of turning the emphasis away from fitness testing of youth, towards more attention on physical activity behaviour. Their review of the literature highlighted a number of areas where empirical studies have been lacking. For example in understanding the carryover effect of health-related physical activity in youth to adulthood and the precise relationship between physical activity and physical fitness. Freedson and Rowland (1992) also pointed out that currently only very limited information is available on levels of habitual physical activity in children, due to a lack of acceptable

standardised methods for assessment. In addition to that of Corbin and Pangrazi (1992), Freedson and Rowland (1992) further reanalysed the NCYFS-I data. They used the data of Blair et al. (1989) to define desirable levels of activity in children, and calculated that approximately 12 % of girls and 6 % of boys should be classified as inactive from that study. Hence only a small proportion fell below the health standard for physical activity. However although these figures were considerably lower than the study's own initial calculation, and lower than Blair's (1992) estimate of 20%, it still meant that sizeable numbers of children were not likely to be experiencing the health related benefits of physical activity. Freedson and Rowland (1992) concluded their contribution to the debate by suggesting that physical fitness testing may have a use in Physical Education, but only in so far as teaching children about the health implications of physical activity and physical fitness. They suggested that testing is of less use than previously thought, in its traditional role of monitoring fitness standards between children.

The forum for discussion of this topic was brought to a close with some European perspectives, including a response from Britain by Armstrong (1992). Armstrong (1992) pointed out that Britain does not have the tradition of physical fitness testing that America has and that UK national norms were not available. Nonetheless from the small number of British studies that have been carried out, Armstrong (1992) suggested that many children in the UK do not participate in physical activities of sufficient intensity, frequency or duration to promote health-related outcomes. He concluded that British children's physical activity is major cause of concern (even at a political level) in terms of the nation's health. The UK National Curriculum was

implemented in 1992 and includes a component to promote children's understanding of the health-related outcomes of physical activity and awareness of how these can be achieved and sustained. The success of this remains to be evaluated.

The final commentary came from Koenig-McIntyre (1992), who discussed the evidence from Scandinavian young people. The 10 year old children in this study tended to perform better when compared to same aged American counterparts, that is, they were deemed as being more physically fit on a number of criteria. In reply to Corbin and Pangrazi (1992) Koenig-McIntyre suggested that American fitness standards should not be lowered, even if they initially contribute to children's feelings of incompetence. Rather children should have more opportunity for physical activity with the aim of improving their performance, especially for those who fall way below health-related standards.

To sum up the presented arguments it seems reasonable to no longer conceptualise physical fitness and physical activity as dichotomous constructs. Physical fitness is best seen as the natural product of regular physical activity. If children are fit it should imply that they are active and if they are active this will lead to fitness. In terms of Physical Education programmes and other non school-based intervention, the emphasis should be on increasing activity levels, although physical fitness tests, if carefully used, can help an individual reach and sustain their physical best.

The forum raised a number of issues relating to the difficulties and complexities of definition and measurement that plague human sciences. None of these were resolved conclusively and more research is still needed.

2.2 The measurement of physical activity in youth.

The debate over whether it is the product or process of physical activity that is important for determining young people's health, has influenced the development and evaluation of different measurement tools and methods of assessment. In this section these will be reviewed.

Biddle, Mitchell and Armstrong (1992) have provided an important and thorough assessment of heart rate monitoring, self-report measures and interview recall techniques in 12 year old children. This work confirmed the difficulties for research in this area to assess accurately young people's habitual physical activity. Self-reported levels of physical activity did not strongly correlate with the heart rate estimates of activity. The heart rate measures appeared useful for determining the stress put on the cardiopulmonary system but was not sensitive enough to pick up differences in activity levels. They concluded that self-report measures were the most appropriate, although their evaluations of various methods of obtaining self-reported physical activity showed considerable variation in the estimations given by children. Self-report measures were further advocated from Biddle and Armstrong (1992). In this study psychological correlates of physical activity were explored. They used heart rate

telemetry to assess physical activity. The data were able to classify active and less active participants, but the results were particularly weak for girls, for whom correlations between heart rate and physical self-perceptions were close to zero. They further highlighted the need to examine activity *type* and suggested the greater use of self-report data, despite the methodological problems.

These findings are in agreement with Paffenberger et al. (1993) who have also reviewed different approaches to the measurement of physical activity. They concluded that the method of choice was the questionnaire, especially if it can be standardised and administered in a uniform fashion to large populations. Paffenberger et al. (1993) contested that direct observation and electronic monitoring were too intrusive and imprecise and were limited, as they could only be used with small samples, leading to problems of validation.

Sallis (1991) has reviewed self-report measures of children's physical activity. He focused on studies of the validity and reliability of measures used with children and adolescents within the age bands of 3 to 18 years. Incorporated into his review were four main types of self-report: self-administered recall; interview administered recall; diary accounts and by-proxy reports (from parents or teachers). Altogether the measures used from 22 studies were included evaluated, including 6 used in previous studies by Sallis and colleagues.

Sallis (1991) found a strong relationship between the demands on the subject and the performance of the measure. Hence the most reliable results appeared to come from

diary measures, but the burden on participants was high. The interview administered measures showed satisfactory reliability and validity, especially with trained and supervised interviewers. Reliabilities of self-administered measures (e.g. questionnaires) were high, but few studies had provided an evaluation of the validity of the measures used. Sallis (1991) concluded that children can accurately report their physical activity, but the ability to do this varies with the type of measure. He suggested that all measures should be seen as only giving approximations of true physical activity as there was always a degree of error. However, further work by Sallis has shown an increased confidence in self-report measures. Sallis et al. (1993) concluded that self-report measures were sufficiently reliable and valid, with children as young as 10 years, for use in research on physical activity.

In sum, heart rate monitoring has a use in measuring the products of activity and can be used also for children too young to report their own activity (e.g. Moore et al. 1991). The process of physical activity is best assessed with self-report measures which include frequency, duration and intensity of activity as well as the type of activity (Powell, 1988). Such measures require careful evaluation and may be best suited to observe patterns of participation, rather than absolute, or 'true' levels.

Chapter 3

Gender Issues in Sport Participation

3.1. Boys and girls come out to play: historical and contemporary perspectives.

The process of sport and exercise participation may be quite different for men and women. Young women have become a particular focus for concern as their absolute levels of physical activity have been shown to be lower than young men and the decline in participation that occurs during adolescence is more acute in females, leading to lower levels of participation in adulthood, when compared with men (Allied Dunbar National Fitness Survey, 1992). This chapter will provide a critical evaluation of the gender issues in sport.

Covey and Feltz (1991) pointed out that evidence has been documented, since at least the 1940's, showing the decline in physical activity, physical fitness and motor ability in female adolescence (e.g. Baker, 1940). Women's rate of involvement in sport has always lagged behind men's. This relationship has been shown to hold true for all forms and levels of their involvement, both as producers e.g. as athletes or coaches and as consumers e.g. as fans attending sporting events (Birrell, 1983). Historically, this has been attributed to the conflict between being physically active and having a feminine gender role identity. In this perspective sport is seen as being a male-dominated institution, where women have been both actively and passively excluded from participation (Brown et al. 1989, Mason, 1988) and continue to be

underrepresented within sport (Scruton, 1986). Hendry et al. (1991) reported that young women were apparently as positive as young men about sport and its benefits and yet they were less likely to be participants. They concluded that for young women, opportunities for participation were more limited and that male formulations of sport predominate.

In 1942 Henriques described how developing boys are "by nature active...bubbling over with high spirits and energy" (pg. 43) and how valuable physical activities can be in providing an outlet for this energy. Entrenched in Freudian notions of development, this typical focus was particularly concerned with channelling boy's aggressive and sexual potential in a positive way, and thus 'keeping them out of trouble'. Even recently, sporting activities have been considered as a therapeutic intervention of 'delinquent youth' (Trulson, 1986). This view of competitive sport has been seen as attempts to bring about socially acceptable behaviours and return 'delinquent youth' back to 'normal adolescence' (Griffin, 1993).

It was common for the working class boys that Henriques (1942) wrote of to regularly box or wrestle within a youth club environment. A number of these boys would go on to seek careers in these sports. Such boys became working class 'heroes' and their success in sport was seen as a way of helping them to climb out of the quagmire of disadvantage. In a brief historical review on youth sport participation, provided by Danish et al. (1990), the changing role of sport in society was discussed in relation to the changing social philosophies and expectations of children. Hence they pointed out that, during the first half of this century, children were viewed as small adults and

encouraged into activities that prepared them to be hardworking, competitive adults and sport was seen as a medium to exert maintain social control over children. In contrast, contemporary child rearing practices have emphasised youth as a time for developing prosocial behaviours and engaging in activities for self- benefit and not just the greater good (Danish et al. 1990).

Sport has many functions within our society. What has changed since the 1940's is the value that is now known sport and exercise can have in a healthy lifestyle for both men and women. The function of youth sport is no longer merely to serve as a cathartic leisure activity for boisterous boys, or as a basis for developing future (male) professional champions. Sustained participation, for optimal physical and psychological health, is important for both sexes.

In 1972, Title IX of the Educational Act in the USA was implemented to interdict discrimination on the basis of gender. Following this physical education classes in American schools were encouraged to be gender-integrated, so that equality would exist in instruction and opportunity (Patterson and Faucette, 1990). Whilst overt discrimination against women in sport may have lessened since the 1970's, the promise of Title IX has not been borne out. Subsequent investigations of youth sport participation still show gender differences in virtually every variable studied in Westernised countries around the world.

In one of the few empirical studies to incorporate gender role identity as a predictor of physical activity in adolescent females, Covey and Feltz (1991) found that physically

active young women reported significantly more masculine and feminine characteristics than those classed as inactive. They also reported more positive self-image, healthier emotional expression and coping characteristics. However, a decrease in physical activity over the course of adolescence did not necessarily result in psychological distress for these adolescent women. This is an important point that will recur as a theme throughout the thesis.

In a study comprising older adolescent females and adult female athletes, Jackson and Marsh (1986) found that female athletes could be more masculine without being less feminine and that female athletic involvement had positive benefits without producing any loss in femininity or in self-concept.

These findings added support to the notion of androgyny. Androgynous individuals have been posited to exhibit greater flexibility in sex-role behaviour; to transcend the conflicting norms of masculine and feminine stereotypes; to be psychologically healthier and socially more effective (Bem, 1974). It might well be that androgynous females, who have the ability to overcome contradictory role expectations, are more likely to participate in sport and thus also experience enhanced *physical* health.

Research such as this has debunked the myth that active sport participation does not allow for expressions of femininity. However, studies have tended to be confined to late adolescents and adult females. It remains to be fully investigated as to whether some young women still perceive active sport participation as a threat to their gender role development despite this empirical evidence that this need not be so.

Certainly, Orme (1991), in her multi-method study of 14 to 15 year old girls, suggested that stereotypical feminine identity, over masculine identity, is important for some young women and that this might mitigate against their active involvement in physical activity. Orme (1991) concluded that femininity, in terms of traditional female concerns about appearance (such as with hairstyle, make up and jewellery) were highly valued in her sample of young women. This was over and above the value they placed on keeping fit and they did not welcome the disturbance associated with participation in Physical Education.

In Western societies the pursuit of 'beauty' has traditionally been seen as feminine attribute and responsibility. Therefore, women's well-established preoccupation with their physical appearance is seen as consistent with the conventional feminine sex-role stereotype (Davies and Cowles, 1991). Socio-biological theories have also been put forward by psychologists such as Erikson (1968) although they are currently very unpopular. Erikson (1968) believed that self-definition in males and females arose from the use of the body in an 'adaptive' fashion. He suggested that females must use their bodies as a way of attracting and incorporating other people (especially males) and that their bodies should be interpreted in connection with its *physical attractiveness*. Erikson (1968) saw this as important for women to develop a stable sense of self. On the other hand, for males he suggested that their bodies should be viewed for the purpose of manifesting their *physical effectiveness*. Standards of beauty and the 'ideal' figure have varied over time and between cultures. Thinness is the current ideal (Rodriguez-Tome et al. 1993) and research has shown the strong

culture pressures that women experience to pursue a slim body (Salmons et al. 1988). Many young women report low levels of body satisfaction during adolescence (Davies and Furnham, 1986). Low levels of body satisfaction have been linked to the risk of a pathological outcome for some women, such as eating disorders (Button, 1990).

Mishkind et al. (1986) reviewed a body of evidence which indicated that the emphasis on appearance may not be the exclusive domain of women and that men are moving further along a continuum of bodily concern. There is also some evidence to suggest that the current emphasis on exercise as an important health behaviour may well serve to encourage, in both sexes, an exaggerated and narcissistic investment in the body (Davies and Cowles, 1991).

Whilst the sociocultural pressure is on women to look thin and toned, mesomorphy is the masculine ideal (Davies and Cowles, 1991). The societal concerns over sport and masculinity have been discussed already. There may also be associated specific health-related problems. For example, there is now a growing concern over the cosmetic use of banned drugs (e.g. steroids) in young men who have a desire to increase muscle bulk and decrease body fat. In a survey of elite young athletes (aged 18 to 23 years), 'being competitive', 'increasing strength' and 'controlling weight' were stated as primary causes of banned drug use (Anshel, 1991).

Issues of race and the mesomorphic male body have been controversial. Rodriguez-Tome et al. (1993) have cited evidence that a muscular body is seen as the ideal cross-culturally. Wiggins (1989) has seen the ideal male body as being heavily racialised,

providing a discussion of the debate that has considered the supposed reasons for athletic prowess in successful black athletes.

Clearly physical activity undertaken for the reason of 'looking good' need not conflict with the need for a healthy body, indeed one may be a route to the other. However, the research discussed here has highlighted the difficulty, and indeed the potential danger, of promoting the potential short term products of sport participation to young people, over and above the processes that will lead to a long term healthy lifestyle. It has also lead to the suggestion that, in terms of outcome, participation motives may be in conflict i.e what might be the 'best' for looking achieving a desired physical appearance, might in some circumstances mitigate against healthy behaviour.

Evidence has suggested that whilst some may choose to exercise in public, for example in an exercise studio, to display or compare a fit and athletic body, others with high social anxiety, specific to the physique, have self-presentation concerns that make such exercise settings off-putting (Crawford and Eklund, 1994).

It may be that those androgynous females who chose to participate regularly have a more stable, internal self-concept of their femininity whereas females averse to sporting activity may base it more on external indicators such as hair, jewellery and make up. Most traditional school sport requires these to be removed or displaced, and this perhaps explains, in part, some women's preference for activities such as aerobics or dance, where their external femininity is preserved or even emphasised.

The Young People Leisure and Lifestyles Survey of 1991 (Hendry et al. 1993) highlighted that, within the overall decline in sports involvement across the adolescent years, significant differences existed between males and females with respect to the type of sport played. Between the ages of 13 to 14 years and 15 to 16 years a significant shift in sporting behaviour was reported to occur, whereby young women moved from being competitors to being recreational sport players. By contrast, young men remained relatively stable in their sporting subgroups across the adolescent years and into early adulthood. Traditional sport was seen as competitive and masculine and not this was not desired by these young women.

Young boys may therefore see sport participation as a way of positively developing and expressing their 'masculinity'. Athletic status as a determinant of peer group popularity will be discussed in chapter 5.41, where being an athlete will be shown to be a major criteria for male popularity, when judged by both male and female adolescents, but ranks as a lot less important in the social status of females (e.g. Thirer and Wright, 1985).

In the Young Peoples Leisure and Lifestyles survey of 1991 (Hendry et al. 1993) it was found that associations between self-assessed health and type of sport played (competitive, recreational, or non-participant) were markedly different for young men and young women. Amongst adolescent males, non-participants were less likely to have reported 'good' general health, while competitors were more likely to do so (70% compared to 82%). Also, the males' non-participation was associated with psychological stress. By contrast, amongst young women, there was little evidence to

suggest a consistent pattern of associations between self-assessed health and type of sport played (67% of both non-participants and competitive players reported 'good' health). Hendry et al. (1993) concluded that these findings were consistent with male formulations of sport as essentially competitive team games. From this perspective, the males' participation was linked with self-perceptions of physical and mental health, whilst there are no clear links evidenced between psychological health and sport amongst these young women.

This supports the work of Covey and Feltz (1991) who found that young women had resiliency and coping strategies that buffered the relationship between low levels of physical activity and psychological distress. These two studies had different aims and methodology and surveyed young people from different cultural backgrounds. Hence the finding that physical activity may enhance aspects of mental health in young women but that inactivity may not correlate with mental health decrements, as it may do with young males, appears to be robust.

Birrell (1983) has drawn attention to the theoretical and methodological problems of uncritically adopting the concept of androgyny as 'a good thing'. For example, she argued that Bem and co-workers assumed that androgyny meant that only the 'best' traits of both sexes would be involved, leaving open the political question of who is to decide which traits are good and which are bad. Birrell (1983) praised the significant advance made by the move from traditional bipolar conceptualisations of masculinity and femininity to the acknowledged existence of other possibilities e.g. androgyny. However, she viewed this as not a final stage for gender development but called for

gender role transcendence, in which the terms 'masculinity' and 'femininity' are finally abandoned and the discussion of activities as being masculine or feminine becomes an anachronistic practice. More recently Davis and Delano (1992) took this argument one step further, by not only opposing the socially constructed masculine and feminine stereotypes but also discussing the problems, in relation to sport, of viewing gender as dichotomised. In this paper their particular focus was on the detriment of the portrayal of women's bodies as having a fixed boundary of physical gender, in the context of anti-drug campaigns in athletics.

In sum, gender stereotypes need to continue to be challenged in the context of sport participation. The existing state of affairs has pointed to differential experiences and psychosocial outcomes for boys and girls engaged in sports and physical activities. The psychological and social outcomes from participation and non-participation may be vary between the sexes. Gender has been shown to be an important factor in distinguishing different levels and types of sporting involvement. The evidence has lead to the suggestion that the appropriate intervention to improve participation levels needs to reflect these gender differences and concerns.

Chapter 4

Theoretical Perspectives.

4.1 Approaches to understanding sport and exercise participation.

Chapter 3 highlighted the gender issues, which may go part of the way to accounting for differential levels of participation that have been found in previous studies. In this chapter further theoretical perspectives on sport and exercise participation will be reviewed. It is beyond the scope of this thesis to review all possible theoretical or empirical approaches to the study of participation motivation of children, adolescents and adults. Research in the 1980's tended to provide attitudinal studies of children based most notably on the work of Schutz, Smoll and colleagues. They saw that the development of a positive attitude towards participation in physical activities as the single most important objective of PE and developed an inventory (CAPTA) so that such attitudes could be assessed (see Schutz, Smoll, Carre and Mosher, 1985).

Although attempts were made by authors and others (see Martin and Williams, 1985) to improve the CAPTA it has been heavily criticised for its poor psychometric properties (Brustad, 1991).

Attitudinal research, in general, has tended to produce equivocal results. Progress has been made with more sophisticated attitudinal models such as with the theory of reasoned action (Ajzen and Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1985). There has been some success in predicting exercise behaviours from

the theory of planned behaviour, when used with adult samples (e.g. Gatch and Kendzierski, 1990, Wankel, Mummery, Stephens and Craig, 1994, Godin et al. 1995), although when tested with children they have often been limited (Theodorakis, Doganis, Bagiatis and Gouthas, 1991). Social-cognitive theories, which include some aspect of self-evaluation (e.g. Bandura, 1986) have been contrasted with Ajzen's attitude theories and have been shown to be more effective in predicting exercise behaviour (Dzewaltowski, 1989, Dzewaltowski, Noble, and Shaw, 1990). See Godin and Shephard (1990) and Smith and Biddle (1992) for full reviews of attitude-behaviour models in exercise promotion.

Brustad (1991) also reviewed the literature and concluded that the evidence was such as to suggest that possessing favourable attitudes towards physical activity and knowledge about the benefits were insufficient alone to develop a physically active lifestyle. He advocated that "to voluntarily engage in physical activity, children must also possess favourable self-perceptions regarding their personal capacities in this domain." (Brustad, 1991, pg. 229).

Hence the theoretical focus in this chapter will continue to concentrate on theories which include self-perception and competence motivation, incorporating the gender issues that have been discussed in the previous chapter.

4.2 Social-cognitive models.

In the examination of the psychological determinants of sport involvement for females, progress has been made since Birrell in 1983 described this area as ‘descriptively rich but theoretically barren’. Over the past ten years, Eccles and her colleagues have developed a theoretical framework for studying motivational factors that underlie individuals’ decisions regarding various activity and achievement patterns in sport and made an important contribution to our understanding in this field.

The Eccles (Parsons) et al. (1983) expectancy-value model was based on the assumption that activity choices are made in the context of a variety of choices. These choices, whether made consciously or non-consciously, were assumed to be guided by expectations for success at the various options; by core personal values such as achievement needs, competency needs, personal goals, motivational orientation and gender-role schemata; by more utilitarian values such as the importance of participating in various activities for one’s future goals, and by the potential cost of investing time in one activity rather than another.

The strength of this model was that its theoretical base in expectancy-value models of task/activity choice and elaboration of the construct of ‘value’, providing a link between expectancy-value models and the literature on the self.

Eccles and Harold (1991) presented two empirical studies, one focusing on early adolescents and one focusing on elementary school-children. They aimed to evaluate

the utility of the model for understanding gender differences in sport participation. Gender-role structure and gender role stereotypes were considered to be two particularly salient components of children's social world. Extensive evidence indicated that women are stereotyped as less competent than men, especially in athletic or intellectual domains, even when they perform equally well (Eccles et al. 1983). From this cognitive-developmental perspective, stereotypes were shown to influence children's developing self-concepts. From the incorporation of these biased cultural gender-role stereotypes it was predicted that girls would have lower self-concepts of their abilities than boys.

Eccles and Harold (1991) found that the results supported the prediction, that the gender differences in young adolescents participation in sporting activities, was related to the gender differences in their estimates of their ability in sport and the value they attached to being good at sport. Even by the age of 5 the girls had a more negative assessment of their general athletic ability than the boys. The girls also placed less importance than boys on the sport domain. A particularly informative finding here was that the girls saw themselves as less able in sport than in the other comparison domains (Maths and English) and they saw the sport domain as less important than the other domains. The boys, however, viewed sport as having equal or more importance than the other domains and expressed more confidence in their abilities at sport than maths or English. These patterns of self-perceptions and task values were seen by the authors as critical mediators of the gender differences that are observed in sport participation.

Eccles and Harold (1991) acknowledged the difficult and controversial task of identifying the origins of these gender differences. They took a contemporary, interactive stance, suggesting the probable influence of both biological differences and socialisation experiences. The findings from their empirical studies suggested that the socialisation experience variables, acted either independently or in interaction with earlier aptitudinal differences, contributing substantially to the observed gender differences in participation rates. Their data added further support to the key role that parents play in this process. This will be fully discussed in chapter 5. Children who perceived that their parents value sport competence rated their own sport competence higher, although, as the authors note, longitudinal analyses would be necessary to determine the causal ordering of this relationship.

Not having the time for sport and exercise resounds around the literature as one of the oft cited reasons people give for not initiating and sustaining a regular exercise programme. This has been stated in studies ranging from surveys of young people (The YPLL survey, 1991), community studies of women (Johnson et al. 1990), comparisons between exercisers and non-exercisers (Gauvin, 1990) and men with CHD (Godin et al. 1991). Whilst it may be thought that 'not having the time' serves as a convenient and socially desirable response for people under investigation, drawing on the Eccles (Parsons) et al. expectancy-value model, this rationalisation can be explained, in part at least, by indicating the low priority sport has in these subjects choice of activity.

Stratton and Baer's (1994) study of American school children's non-participation in organised youth sports provided further suggestion that such principles may be in operation. They examined children's reasons for never participating in non-compulsory sport. 'I have other things to do' was the foremost reason that the children gave for non-participation, followed by 'not enough time', 'I'm involved in other activities' and 'I do not have the skills and/ or experience needed'. The children in this study reported that they did not feel the need to participate in sports.

This has all emphasised the difficulty or lack of desire that young people and adults have in prioritising physical activities in their lifestyle and thus reinforces the need for intervention based on the promotion of the process of *habitual* exercise participation. If an activity is habitual it may not need to be consciously chosen.

A further description of the Eccles (Parsons) et al.(1983) expectancy-value model is warranted so that the relative value of the model in comparison to other theoretical accounts can be assessed. Within the wider context of sport participation motivation Bandura's (1977) theory of self-efficacy has attracted more attention than the Eccles (Parsons) et al. (1983) expectancy-value model. This theory also viewed self-confidence as an important mediator of performance and achievement.

Bandura's (1977) theory of self-efficacy forms a major theoretical component of his more global social-cognitive theory (1986). In this theory Bandura (1986) posited that people are not driven by inner forces, or controlled by external stimuli, but are shaped by a model of reciprocity in which behaviour, cognitive factors and the environment

interact. Self-efficacy was seen as being influenced by a combination of these three factors.

Self-efficacy theory has strong implications for achievement settings. Self-efficacy is defined as a judgement about one's capability to organise and carry out a course of action so that a specific outcome can be attained (Bandura, 1986). Bandura (1977) outlined four sources of efficacy information a) performance accomplishments, b) vicarious experience, c) verbal persuasion and d) physiological states. Therefore, a person's belief in their abilities strongly influences their choice of activities, the amount of effort that is put into them and for how long that person persists in the face of failure. Bandura (1977) also included the concept of outcome expectancy, which he differentiated from self-efficacy. An outcome expectancy is the individual's belief that a particular action or behaviour will lead to a particular outcome, regardless of whether the individual feels capable of performing that behaviour. Bandura's (1977) concept of outcome expectancy has spawned much research into adult's participation motivation (Desharnais et al., 1986; Dishman and Steinhardt, 1990; Maddux et al. 1986; Marcus and Owen, 1992; Poag and McAuley, 1992; Rodgers and Brawley, 1991.).

Lirgg (1992) provided a comprehensive review, in the context of girl's and women's sport and self-confidence, comparing Bandura's (1977) self-efficacy theory with the Eccles (Parsons) et al. (1983) expectancy-value model and Harter's (1978) model of perceived competence.

In Harter's (1978) competence motivation theory, mastery attempts result in either positive or negative outcomes in the form of reinforcement or non-reinforcement, and the modelling of approval or disapproval. Harter has been very specific about the paths of *developing* competence, seen as crucial to the investigation of children's and adolescents experiences in physically active pursuits (Weiss and Horn, 1990). Harter's theories of developing competence will be discussed specifically in chapter 5.21.

According to Harter (1978), young children rely almost exclusively upon these external outcomes to help shape their perceived competence and control. If outcomes are positive, internalisation of a reward system should develop and the need for external approval diminishes. However, if mastery attempts result continually in negative outcomes, the child continues to be dependent upon external approval, which persists as the child grows. The development of physical competence as a non-physiological product of physical activity is a major goal for Physical Education in schools (DES, 1989).

Harter's (1981) competence motivation theory has gained substantial support in the study of children in sport. Weiss(1987), in particular, highlighted Harter's (1981) construct of perceived competence as one that is intimately related to motivational indicators such as choosing to participate, sustaining effort and continuing interest in tasks or activities. Specifically, Weiss and colleagues have shown that children with high perceptions of physical competence possess higher perceptions of internal control, intrinsic motivational orientations and levels of sport participation and performance when compared with those with low perceived competence (e.g. Weiss, Bredemeier and Shewchuk, 1986).

Recognising the need to connect participation motivation research to theory, Klint and Weiss (1987) provided further support for Harter's (1978, 1981) competence motivation theory, in a study of young gymnasts. They clearly demonstrated that those children who were high in perceived physical competence also stated that skill development was a prime motive for taking part in their sport. In addition they were motivated to demonstrate their competence and improve it further, when compared to low perceived physical competence counterparts. Gymnasts who scored high on the perceived social competence subscale were also motivated by the affiliation aspects of sport. This included both team atmosphere variables as well as more general items relating to being with friends, making new friends and being encouraged to participate by friends. As would be predicted from Harter's theories, the findings here suggested that social participation motives allowed children to both demonstrate and improve their competence in this domain and this was likely to foster sustained participation. Those who scored low on the perceived social competence were motivated for non-social reasons, as might be expected. Their prime motives related to reasons such as excitement and competition.

Compared to early, non-empirically substantiated claims about youth sport participation, the children in the Klint and Weiss (1987) study rated status-related motives, energy release and other general extrinsic reasons such as gaining trophies and ribbons amongst the *bottom* ten reasons for taking part. Intrinsic reasons for participation such as fun and competence and fitness related motives were rated most highly. This results shows the importance of accurately investigating what young

people say themselves about their values in sport, rather than imposing adult concerns upon them.

Weiss and Horn (1990) pointed out that, despite the interest in the role of perceptions of ability on motivated behaviour, little attention has been directed to the *accuracy* with which perceptions of competence relate to more objective measures of competence. They made an important contribution to the literature by arguing that the critical issue is of how perceptions of ability, in relation to objective measures of ability per se, influence achievement-related behaviours beyond mere quantitative differences of high and low perceived competence individuals.

Weiss and Horn (1990) examined the accuracy of 8 to 13 year old children's self-judgements, in relation to teacher's judgements in the sport domain and the relation of these accuracy judgements to achievement characteristics. Intrinsic/extrinsic motivational orientation, anxiety and perceptions of performance control were found to differentiate underestimating boys and girls from their accurate and/or overestimating counterparts.

Specifically, the results revealed that girls who underestimated their physical competencies indicated a preference for less challenging skills, recorded higher anxiety scores and higher levels of perceived external control than their accurate or overestimating peers. For the boys, underestimators reported higher perceived unknown control scores (i.e. they were unable/unwilling to identify sources of control) than did accurate and overestimating boys.

In order to understand the underlying process of this ‘illusion of incompetence’ phenomenon, Weiss and Horn (1990) suggested that the key question for future research is to examine the factors contributing to these perceptions of incompetence among children whose ability levels do not warrant such a label. They contented that there is a need to establish reference others for children with inaccurate perceptions of competence and whether low achievers selectively attend to high achievers and compare themselves unfavourably. This has implications for how school sport is managed, raising the issue of similar concern in other achievement domains. Namely, should sport in schools be streamlined by ability?

Weiss and Horn (1990) stated that the consequences of low, inaccurate perceptions of competence, and the related low levels of intrinsic motivation in the form of challenge-seeking and perceptions of control and high levels of anxiety, were of special concern from both a theoretical and practical perspective.

Weiss and Horn (1990) discussed how, according to Harter’s (1978, 1981) theory of competence motivation, the child who develops an accurate sense of perceived competence and feels in control of performance outcomes will be intrinsically motivated to participate in physical activity. They suggested that such children will exert and sustain effort, while striving toward challenging goals and will be likely to sustain such goals. This success in turn will lead to positive affective outcomes and continued participation.

In contrast, for those young people who foster low and inaccurate perceptions of competence and perceptions of control, were seen as likely to avoid participation, show little effort or persistence with negative affect, in the form of anxiety and low achievement levels. Weiss and Horn (1990) suggested that such a child may be considered 'at risk' for successful experiences in the sport domain and dropout. Rather than advocating streamlining children by ability, they suggested that intervention, in the physical domain, for this group of understimulators, should be based on goal setting, attribution retraining and self-talk monitoring.

Van Wersch et al. (1990) have examined Harter's (1978) theory of competence motivation, specifically in the context of the implications for the PE curriculum. They measured perceived physical competence together with various aspects of the PE lesson, in a study of boys and girls aged 11 to 18 years. The results of previous studies of physical competence were echoed here, in that the boys perceived their physical competence to be higher than did the girls, supporting the stereotype that boys see themselves as more competent at sport than do girls.

Van Wersch et al. (1990) were also able to show that whilst the boys' perceived physical competence increased with age, that of the girls decreased, especially after the age of 14. This finding complements that of the YPLL survey of 1991 (Hendry et al. 1993), suggesting this time as one of particular psychological vulnerability for young women, with regards to sport involvement. Van Wersch et al. (1990) attributed the 14 to 18 year old girls low perceived physical competence to conflicting gender role expectations and to masculine connotations of sport, offering their results to support

similar work in this area, in particular Scraton's (1987) attack on PE as failing to provide meaningful experiences for many adolescent girls.

In a similar vein to Eccles and Harold (1991), the pupils studied by Van Wersch et al. (1990) with low perceived physical competence felt that PE had a lower status than other school subjects and those with high perceived physical competence were more likely to believe that PE had the same status as other subjects. What would be interesting here is to ascertain the direction of that effect.

An unexpected, but very important finding, from Van Wersch et al. (1990) was the strong correlation, for almost all the pupils, between the perceived physical competence and the 'PE adolescent scale' they used. Although a detailed description of this scale was regrettably lacking, it seemed designed to measure the degree in which pupils feel 'disturbed' by their adolescent physiological and psychological changes, such as having less body control and a higher sensitivity to being ridiculed. Thus low perceived physical competence bore a strong relation to pupil's disturbances and high competence to an absence of these disturbances.

This emphasised the necessity to integrate the theoretical understanding of adolescent sport involvement with the general psychological literature pertaining to adolescent development as has been attempted in the current study. Van Wersch et al. (1990) suggested that, for the 14 to 18 year old girls, attention needs to be given to physical exercises which are gentle and non-competitive and do not use the body in an instrumental way. They advocated generally less emphasis on competition and

achievement and more emphasis on the enjoyment of physical activity, especially where pupils' efforts at mastering sporting skills expose them to their peers and their concerns and uncertainties about identity and body image.

Unlike Weiss and Horn (1990) who envisaged low perceived physical competence and related low sport participation could be improved through altering self-perceptions, such as by attribution retraining, Van Wersch et al. (1990) have suggested that pupils should work in groups of the same ability or level of physical maturity. Which approach would be the most successful raises empirical questions that need carefully designed research to answer. Clearly, there could be room from both.

Lirgg (1992) described three main areas of similarity and difference between Eccles (Parsons) et al.'s (1983) expectancy-value model, Harter's (1978) competence motivation theory and Bandura's (1977) model of self-efficacy. All three were seen to acknowledge the role of confidence or perceived ability in achievement settings, although use a different nomenclature and outcomes for self-confidence (Lirgg, 1992). Both Bandura's (1977) model of self-efficacy and Eccles (Parsons) et al.'s (1983) expectancy-value model make clear links between confidence and activity choice. Lirgg (1992) suggested that in sport, self-confidence may be more important for females, as a factor leading to achievement, than it is in males. She suggested that this is because, whilst boys are normatively expected to be involved in sport, girls need to rely on other sources to encourage them to choose sport as an activity. Lirgg (1992) highlighted self-confidence in sporting ability as a crucial motivator. She suggested that once confidence has been installed through the socialisation process, this

confidence can carry through to help young women face situations where encouragement for their sporting choice is not given.

These models also all include the influence of socialising agents and past experiences on confidence. Lirgg (1992) pointed out the different interactions between the self and the social suggested by the models. Bandura (1977) and Harter (1978) posited that socialising agents influence confidence directly, whereas in Eccles (Parsons) et al. (1983) social influences were mediated through a person's past experiences. The models also vary by what they consider to be a social influence. For Bandura (1977) these were verbal persuasions and vicarious experience whereas Harter (1978) described social influence as stemming from reinforcement by approval or disapproval, and Eccles (Parsons) et al. (1983) as the cultural milieu and the socialiser's beliefs.

Lirgg (1992) discussed how the models also include perceptions of control or attributions. Bandura predicted that self-efficacy influenced attributions or thought patterns. On the other hand, Harter viewed perceptions of competence and perceptions of control as being simultaneously influenced. Eccles (Parsons) et al. hold an opposing view to Bandura by hypothesising that locus of control and attributions directly influence perceptions of ability.

From Lirgg's (1992) descriptive comparisons it is not possible to discern which is the most powerful of these models. Causal modelling techniques might help answer this statistically, as these models appear very similar on a theoretical level. Rodgers and Brawley (1992) even call Bandura's (1986) global social-cognitive theory an

expectancy-value approach. Lirgg (1992) however saw the theories' differences as a key issue. She stressed that, if enhancement of self-confidence strategies are to be successful, the exact mechanisms need to be known, including whether females and males differ in the hypothesised paths, whether confidence is always necessary for achievement and the circumstances under which individuals choose tasks in which they lack confidence.

Clifton and Gill (1994) responded directly to Lirgg's (1991) call for confidence studies employing a feminine-typed task, by assessing self-confidence and gender appropriateness in college cheerleading. The results supported their hypotheses that females would possess more self-confidence in their ability at cheerleading, and its various subtasks, than would males, and that cheerleaders would rate their sport as less gender-stereotyped than would non-cheerleaders. As would be predicted from other empirical work in this area, the males were found to possess greater confidence than females on overall athletic ability. Whilst many of the male subjects (which included 170 male cheerleaders) were not very confident with their cheerleading ability, most were extremely confident with their general athletic ability.

A further social-cognitive theory that has contributed to the understanding of adolescent's motivational orientation towards physical activity has been provided by Maehr and Braskamp (1986) with their Personal Investment Theory. This is similar to other models but focuses on the *meaning* of the context to account for the behaviours and includes three facets: personal incentives, the sense of self and perceived options.

Personal incentives refer to the participation motivation underlying an activity. The sense of self refers to the individual's thoughts, perceptions and beliefs as to who they are. Maehr and Braskamp (1986) also theorised here that the perceived competence is a powerful determinant of personal investment and a motivator for choice of activity. Within the construct of sense of self, the authors include a component of social identity. This relates to social norms and expectations and the individual's perceived association with groups and significant others. The final facet of the theory includes perceived options. This refers to behavioural alternatives and opportunities that the individual perceives.

Personal Investment Theory has not been extensively used in studies of physical activity in adolescence, except most notably by the development of this work by Tappe, Duda and Menges-Ehrnwald (1990). They modified the original work to include measures suitable for young people, with the aim of assessing their motivational orientation towards exercise. The results supported the use of this theoretical approach. Tappe et al. (1990) found that personal investment variables accounted for 19% of the variance in self-reported exercise in males and 25% of the variance in females (mean age 15.9 years). Variables reflecting the meaning of activity led to the correct classification of a high percentage of young people by their level of activity. In accordance with other findings that have been reviewed, high levels of activity were associated with high perceptions of physical competence, especially for females. Also in line with other studies, Tappe et al. (1990) found that males were motivated by competition and females by improvements to appearance.

Although such studies have provided some very useful data on gender and perceived physical competence, they have not addressed Lirgg's (1992) call for a deeper understanding as to why individuals chose to participate in activities in which they are *not* confident. A logical answer to this, open to empirical investigation, is that people chose activities they are not confident in to *gain* confidence in a specific activity and that this may be more important for boys and girls. This implies that self-confidence could be both an outcome of physical activity participation as well as a determinant. Hence the relationship between these two variables may not be a simple linear one as it seems to be commonly conceptualised. This point will be discussed further in chapter 5.3.

Clifton and Gill (1994) pointed to the role of socialisation processes in determining perceived athletic confidence. In North America young women are given the opportunity and experience to gain the skills involved in cheerleading from early adolescence, on average from age 12 in this study, compared to the young men, who reported little or no previous involvement in cheerleading, in or out of school. On average the young men did not begin cheerleading until age 19 years. The cheerleaders in this study were recruited from a cheerleading camp, which presumably ran for a prescribed period. It seems likely that the male and female subjects differed in many ways, such as in their participation motivation, that were not reported. It would be interesting to know which of the participants persisted in the activity after this camp. Also, whether the motivated and athletically competent males' self-confidence in cheerleading improved over time, i.e. if they were able to 'catch up' their female counterparts in confidence following training.

This study showed not only the complexities of understanding the role of self-confidence in sport participation but also cultural differences. Cheerleading is virtually confined to the North American experience. Any attempt to replicate these findings in Britain would be hindered by the difficulty in finding a feminine-typed task, played at college level, by both sexes. Clifton and Gill's (1994) study stands as one of the few that has found women's self-confidence to be higher than men's. It would also be interesting to ascertain if or how the male cheerleading subjects differed from other male college athletes, in terms of their participation motivation and perceived athletic competence.

In sum, the theoretical perspectives and empirical investigations of sport and exercise participation that have been reviewed here, have revealed a variety of approaches, measurements and operationalisation of terms. All of this work has suggested the importance of perceived competence in determining levels and aspects of physical activity. The most powerful models include some aspect of personal expectancy-value or personal investment and have shown how these can be moderated through normative social influences. These predictors of sport and exercise behaviour may be expressed as a function of gender, age and culture. The following chapter will consider these issues in further depth.

Chapter 5

Influences on Sport Participation

5.1 Introduction.

The review of literature thus far has shown the concern over low levels of physical activity and the decline in participation throughout adolescence, especially for young women. Gender issues in sport have been discussed in Chapters 3. This was expanded upon in chapter 4 where theoretical approaches to youth sport participation were discussed, drawing on evidence from social-cognitive models in psychology. This chapter highlights two main areas of influence on participation, the self and the social and the interactions between the two. This thesis aims to place sport and exercise participation in youth firmly into mainstream adolescent developmental psychology. Changes in self-concept and socialisation are two of the most critical aspects to development during adolescence. Indeed, adolescence could be defined in this way. The following chapter will focus directly on the importance of self-perceptions in the development and determination of sport and exercise participation in young people. Following on from this the role of peers and parents in this process will be discussed.

5.2 The role of self-perceptions.

In this section the issues surrounding the development of self-concept in adolescence will be discussed. The focus will then turn to the role of self-perceptions in relation to

sport participation during adolescence. This will include an in depth exploration of the relationship between self-esteem and sport participation as well as attention to the issues surrounding the definitions and measurements of self-esteem. The literature relating to physical self-worth, seen here as a sub-component of global self-esteem, will be further reviewed. The interactive influences of peers and parents on self-concept development, in the context of sport participation, will be discussed specifically in section 5.3.

Following the terminology used by Coleman and Hendry (1990), 'self-concept' will be referred to here as incorporating the notion of 'self-image' (the individual's description of the self) as well as 'self-esteem' (the individual's evaluation of the self). Global self-esteem has been described as the overall negative or positive attitude towards self (Rosenberg, 1979). The term 'identity' will be used interchangeably with self-concept. Coleman and Hendry (1990) also define 'body-concept' as a global term referring to the mental representations of the body that an individual makes, on the basis of diverse information from a number of sources. These constructs form a central part of this thesis.

5.21 Self-concept development in normal adolescence.

Adolescence is thought to be a time that marks both a change and a consolidation of self-concept from earlier development in childhood. Coleman and Hendry (1990) discussed four main reasons thought to account for the development of self-concept in

adolescence. The first of these was seen as occurring as a product of the major physical changes during puberty and the associated changes in body image, which result in a change in the concept of self. Secondly, the growth of cognitive abilities during adolescence allows for an increasingly more complex notion of self-concept. The third reason was given as relating to the increasing emotional independence that a young person normatively experiences at this time, leading to important decisions being made, for example about career choice and relationships. The fourth reason for the modifications in self-concept were discussed as resulting from role changes and identity development that occur during the adolescent transition (Coleman and Hendry, 1990).

Understanding the underlying determinants and co-variables of self-esteem in adolescence has been a central research concern in the area of adolescent psychology, since early work indicated the relationship between high self-esteem and aspects of general well-being (e.g. Rosenberg, 1979). The seminal work of Rosenberg (1965) has been considered as one of the most important contributions to the understanding of the factors associated with self-concept development in adolescence. His classic study (Rosenberg, 1965) is still often cited and the ten-item self report scale, developed through this research for assessing self-esteem, has been widely used as a basis for much contemporary research.

Rosenberg (1965) found that 20 to 30% of the adolescents studied were classified as having low self-esteem. This was found to be related to a number of factors including depression, anxiety and poor scholastic achievement. Both those with low self-esteem

and those with high self-esteem hoped for success in their future life, but those with low self-esteem were less likely to believe that this would actually happen. Low self-esteem adolescents were also characterised by feelings associated with social incompetence and isolation. They were less likely than those with high self-esteem to believe that their parents took an interest in their activities. Self-esteem was shown to be strongly related to both general social adjustment and to stability of the self-concept, such that those with high self-esteem were better adjusted with a more stable overall self-concept.

Coleman and Hendry (1990) have viewed adolescent self-concept in a wider, contemporary developmental context. They pointed out that only the minority of adolescents are likely to have a negative self-image or very low self-esteem and that many variables, such as family background and cultural context play a part in determining part of a young person's developing self-concept. Furthermore, Coleman and Hendry (1990) criticised traditional developmentalists such as Erikson (1968) and Marcia (1967). These writers placed great emphasis on a predicted, *inevitable* disturbance to self-concept, as a result of a 'crisis' at the time of puberty. Erikson (1968) and Marcia (1967) argued that an individual needs to experience such a crisis in order for healthy development to provide a resolution of the identity issue. Coleman and Hendry (1990) argued to the contrary. They suggested that, although some adolescents do experience a certain anguish at this time, the majority of young people develop and adapt their self-concept over a period of years, without having any sudden crisis.

Harter (1990) proposed five distinct characteristics of concepts of the self during normal adolescent development. The first of these related to the differentiation of self-concept into multiple domains. This was seen as a development from childhood, when children are more likely to hold simpler views of themselves, with fewer dimensions to their personality or behaviour. Extensive research by Harter (see Harter, 1985) found that young people were able to describe themselves in eight distinct areas. These were scholastic competence; athletic competence; behavioural conduct; social acceptance; physical appearance; close friendships and romantic appeal. Harter (1990) described how the development and expression of these self-descriptions varied, depending on the social role and context. In particular relevance to this thesis, Harter (1990) showed that perceived physical appearance had the highest correlation to global self-esteem of all the self-perception variables. This was not just for young people, but was a consistent finding across the lifespan.

The second characteristic of self-concept development during adolescence related to the integration of multiple self-concepts into a unified concept of self (Harter, 1990). Here young people's need to find out who they are, as a whole, is established. Harter (1990) described how a young person is able to develop skills to reconcile apparent inconsistent aspects of the self. She suggested that in mid-adolescence (approximately 14 to 15 years) young people are able to detect the conflicts between their characteristics and then in late adolescence (approximately 17 to 18 years) they are able to integrate these inconsistencies into a coherent self-description.

Self-concept development was further seen as being related to the construction of actual and possible selves (Harter, 1990). Harter proposed a discrepancy model, whereby individuals match who they would like to be with who they think they are. A negative discrepancy occurs when individuals are disappointed that the kind of people they see themselves as does not match who they would like to be. If the discrepancy is small or moderate then the individual may make possible changes. If the discrepancy is large it may be detrimental to the young person's overall sense of psychological well-being. By inference, self-esteem has been defined by Harter and others (e.g. Block and Robins, 1993) as being the extent to which individuals perceive themselves as being close to the person that they want to be. Harter's work has been grounded in the theorising of both James (1892) and Cooley (1902). James proposed an early philosophical version of the discrepancy model which Harter has attempted to empirically verify. James (1892) viewed self-esteem as the extent to which individuals considered that they were successful in the domains in which they had aspirations to succeed. Cooley (1902) hypothesised that the origins of self-perceptions were in social context, dependent on how individual's perceive the way that significant others view them. Harter (1987) has shown that both approaches are of value and they are not necessarily antithetical.

The fourth characteristic of self-concept development in adolescence has been described by Harter (1990) as relating to the preoccupation with the self. Here an adolescent becomes stereotypically self-conscious and introspective, with an 'adolescent egocentrism', similar to that described by early adolescent developmental theorists, such as Elkind (1967). The ability to integrate inconsistent qualities can lead

to young people becoming preoccupied and concerned with understanding themselves. For many this can be a troubled time, with some young people retreating into themselves, but can be moderated by intimate friendships sustained during this time (Harter, 1990).

The final aspect of self-concept development was described by Harter (1990) as relating to the fluctuations in self-perceptions. Adolescents were seen as having the opportunity to experience themselves in various and sometimes contradictory roles, which leads to their sense of self being highly mutable. This 'barometric self-concept' (Rosenberg, 1979) can lead to them being able to respond to others and different situations that are confronted during the transition. It may also be that part of the misunderstandings between parents and their adolescent offspring occurs if the different contexts for perceptions and behaviour are not appreciated.

5.22 Stability of self-perceptions during adolescence.

So far the development in self-concept from childhood to adolescence has been discussed. Adolescence has also been seen as an important time to study changes in self-perception that may occur *during* the transition and onwards to adulthood.

Alsaker and Olweus (1992) provided a review of studies which have examined the stability of self-esteem in adolescence together with their own longitudinal cohort study. These studies all used the Rosenberg Self-Esteem scale or derivatives of it.

They found the results of these studies indicated that global self-esteem tends to remain a stable dimension of the self during early adolescence. Correlations in self-esteem between two time points tended to be high. Alsaker and Olweus (1992) proposed a gradual consolidation hypothesis, whereby later experiences during adolescence have a relatively decreasing impact on self-esteem in normal developmental circumstances and hence there is a tendency for self-esteem to become more firmly fixed with increasing age.

Lintunen et al. (1995) followed on from this work with a sophisticated longitudinal study of the developmental changes in the level and stability of self-perceptions in a sample of early adolescents in Finland. The young people were 11 years old at the start of the study and followed up over four years. Lintunen et al. (1995) included measures of perceived fitness, perceived appearance and self-esteem to investigate changes in mean levels over time, changes in inter-subject stabilities and changes in test reliabilities. The results of this study showed that both stability and reliability of self-

perceptions varied depending on the domain that was being considered as well as by gender.

Lintunen et al. (1995) found support for the gradual consolidation hypothesis. Their results showed the increasing stability of self-esteem during the follow up periods. The boys showed a highly stable self-esteem from the start of the study, which suggested an early emergence of a fixed self-concept. The boys also had higher mean levels of self-esteem than the girls with a marked increase shown in the stability of their self-perceptions. There were also differences between boys and girls in perceived physical appearance. For the girls, favourable perceptions of their appearance decreased, whilst those of boys increased. Lintunen et al. (1995) discussed these results in the context of gender intensification theories of adolescence (e.g. Eccles et al. 1989), although there were no significant increases in the differences between the sexes on the other self-perception variables studied. They concluded with the suggestion that societal constraints and pressures lead to unstable self-perceptions in girls, with possible psychological disturbance for some. Lintunen et al. (1995) also considered how realistic were the self-reported self-perceptions of the boys, raising the question that they may be illusory or biased.

In a 3-year longitudinal study of young Swiss adolescents (age 12 years at the onset), Bolognini et al. (1995) also found that self-concept did not undergo many changes during this period. As with most other relevant studies, girls were shown to have lower self-esteem than boys. Interestingly, they found that for girls, their self-esteem was more global and not clearly domain differentiated, whereas the boys showed

separation of the scholastic and behavioural parts of their experience from the social domains.

Block and Robins (1993) provided a developmental longitudinal study examining the later stages of adolescence and the transition to young adulthood. They examined self-esteem in the same individuals at ages 14, 18 and 23 years, who had been previously recruited into an early phase of their studies at age 3 years. Block and Robins (1993) took discrepancy measures between time phases of the individual's ideal and actual self, correlating these two to establish self-esteem ratings. In line with the work discussed on younger adolescence, they found a stability of self-esteem across time, such that mean self-esteem scores did not change significantly from 14 to 18 years and 18 to 23 years.

When these mean scores were analysed in more detail to examine individual differences, Block and Robins found that more than 60% of their participants showed either an increase or decrease in self-esteem. They also noted significant gender differences similar to those discussed previously. For example, they also found that at every age, the males' self-esteem was higher than the females and the gap between males' and females' scores became greater between the ages of 14 and 23 years. This added further support to the gender intensification hypothesis (Eccles et al. 1989). They were also found that a larger proportion of females than males decreased in self-esteem over the time periods studied and a larger proportion of males than females increased in self-esteem. Block and Robins (1993) discussed their results in a similar

vein to Lintunen et al. (1995), commenting on the different societal pressures placed on young women and young men.

The actual-ideal discrepancy model used by Block and Robins (1993) required participants to aggregate self-perceptions, so that the 'self' was seen as a united whole. As Harter (1987) has shown, this may have masked differences in perceptions between self-perception domains such as the athletic or scholastic. Cairns et al. (1990) conducted a shorter longitudinal study (over an 18 month period) of self-concept in late adolescence. They looked at a variety of self-perceptions of young people experiencing different environmental changes, such as leaving school or college. Cairns et al. (1990) also found evidence for relatively stable self-esteem across time, although there were small, positive increments in all aspects of self-esteem over the time period studied. As with the other studies, there were gender differences (favouring males). They provided support for a multidimensional nature of self-esteem, showing the complexity of research in this area, as various aspects of the self appeared to be relatively independent of each other.

Tashakkori et al. (1990) studied stability and structure of self-esteem in late teens. This was one of the few studies to look at underlying concomitants of self-esteem in late adolescence. Participants were studied initially in their last year of American high school and followed up over a two year period. Further evidence was gained here to attest to the stability of self-esteem. Tashakkori et al. (1990) did however detect slight positive changes and when this occurred it was not solely in self-esteem. They found changes in self-esteem related to a relatively large array of other perceptions of the

self, which were shown to moderate self-esteem either directly or indirectly. For example, some individuals showed a large change in self-esteem over the two year period, which was shown to relate to a change in attributional style of behavioural outcomes and their view of the world. Tashakkori et al. (1990) differed from the other studies that focused on large gender differences. In their study proximal psychological variables, such as self-beliefs, orientation regarding work and community and attributional style, were better predictors of self-esteem than were distal and /or demographic variables such as socio-economic status, family configuration or sex. In fact gender did not predict self-esteem or changes in self-esteem when these more proximal variables were added to the regression models. They tentatively concluded that those adolescents with high self-esteem are able to use a “defensive attribution strategy” (Tashakkori et al. 1990, pg. 893) by attributing failure to external and success to internal causes.

These results all show that the average developmental pattern is towards stability of self-esteem from adolescence into young adulthood, but there may be differences and fluctuations in self-esteem on an individual or gender basis. The issue of gender differences in self-esteem research remains controversial. There may be systematic bias towards males reporting higher self-esteem scores than females in traditional self-esteem research. Whitely (1983) conducted a critical appraisal of sex-role orientation and self-esteem. In this meta-analytic review the results were seen to be supportive of a ‘masculine’ theoretical model, which assert that psychological well-being is a function of the extent to which one has a masculine sex role orientation. Cate and Sugawara (1986) found support for this notion. They reported that female adolescents

who scored highly on masculinity ratings perceived themselves to have higher self-esteem than those females who rated themselves as more traditionally feminine.

Similar results were obtained by Butcher (1989) from a longitudinal study of girls from age 11 to 16 years. This study investigated the development of sex role orientation and its relationship with sports participation, self-esteem and age of menarche. This data indicated that girls with high self-esteem had significantly higher scores on the masculine rating scale than girls with low self-esteem, but no differences on the feminine rating scale. Butcher (1989) offered these findings as supportive of the notion that masculinity is more highly related to self-esteem than femininity. Following Whitely (1983), Butcher (1989) also suggested that there may be a large degree of shared variance between self-esteem and masculinity ratings, such that they may be measuring the same constructs.

Bolognini et al. (1996) found that adolescent girls' self-esteem is more global and less differentiated by domains, whilst boys separate the scholastic and behavioural part of their experience from the social. They found that boys attached more importance to achievements that they could compare with their peers and girls rated themselves more against personal criteria and ideals. Hence the oft reported gender differences found in most studies, in favour of males, may be in fact more accurately be reflecting the way in which self-esteem has been operationalised and measured. The review of these studies has suggested that two of the most commonly used scales for measuring self-esteem in adolescence, Rosenberg (1965) and Harter (1985), may be biased in this way.

5.3 The relationships between self-perception and physical activity.

In this section the specific relationships between self-esteem and sport participation will be considered. General self-esteem research has intensified in recent years and important theoretical and empirical contributions to the mainstream literature have been made through the study of perceptions associated with sport and exercise participation. In other contexts many studies have still been using very simplistic conceptualisations and measurement tools (e.g Garton and Pratt, 1995). It is distinguished here from the literature on self-concept, or perceived competence, that has been reviewed in chapter 4.

Self-esteem has been shown to correlate with sport and exercise participation, where the direction of causality has been suggested to be in either or both directions. For example self-esteem has been seen as one of the major psychological outcomes to benefit participants of regular exercise (Folkins and Sime, 1981, Fox, 1991b). A review by Sonstroem (1984) showed that at least 16 studies have found a causal effect of exercise on self-esteem change, with participation in exercise programmes linked to an improvement in self-esteem scores. This review also pointed to simplistic formulations of early research into self-esteem whereby it was often viewed as a unidimensional construct. A meta-analytic study by Gruber (1986) also found a positive influence of exercise on self-esteem, from 27 empirical studies. Gruber (1986) found that children, in studies experiencing a physical activity intervention, showed higher self-esteem scores than controls. The effect size for physical activity on self-esteem was 0.41, with the greatest effects for children with disabilities.

As well as sport and exercise having the potential to induce improvements to self-esteem, the relationship has also been seen conceptualised whereby self-esteem is seen as a determinant of exercise behaviour or a necessary precursor to activity (e.g. Butcher, 1989). Exercise is not the only health-related behaviour thought to be related to self-esteem. There is evidence from Dielman et al. (1984) that adolescents with high self-esteem are also less likely to engage in detrimental health behaviours such as cigarette smoking, alcohol use and marijuana use. These relationships between self-esteem, well-being and behaviour have been a focus for intervention in educational settings (Fox, 1992a). In an earlier paper, Fox (1988) outlined various modes for improving children's self-esteem through physical activity based on contemporary theories. The notion that the *process* of fitness behaviour was important, rather than the *product*, was also advocated in this context. Hence the suggestion was that educators need to focus on encouraging improvements to personal fitness through the development of mastery and physical competence, rather than in the use of comparisons between different individual's performances. Fox (1988) also suggested that some component of physical education needed to emphasise the health-related aspects of physical activity and not just skill or performance. It was also proposed that the most effective intervention could be on those with the lowest initial self-concept such that remedial provision is provided. Some of these points raised by Fox (1988) have indeed found their way into the current PE curriculum in schools. For example, the sensitivity that needs to be shown to pupil's differing physical maturity and the recommended use of differentiation in the organisation of the PE lesson (DES, 1989). Even more directly, the DES (1989) have acknowledged that one of the 11 aims of PE

should be to “foster self-esteem through the acquisition of physical competence and poise” (point 3, pg. 2).

5.31 Measuring self-perceptions in the physical domain.

The multidimensionality of self-esteem structure was furthered through the development of hierarchical models. Harter’s work on the identification of various subdomains of self-concept has been extended, whereby self-esteem is seen as a global construct made up of hierarchically organised, increasingly specific subdomains. The development of self-esteem research by Shavelson, Hubner and Stanton (1976) represented one of the first, major theoretical challenges to the erstwhile proposed unidimensionality of self-esteem structure, although they were unable themselves to identify a single, appropriate measurement instrument that could differentiate among the hypothesised academic, social and physical domains. Sonstroem and Morgan (1989) developed such a model for use in exercise settings, the ‘Exercise and Self-Esteem Model’ (EXSEM) based on the theorising of Shavelson, Hubner and Stanton (1976) and Marsh and Shavelson (1985). Within the EXSEM, global self-esteem was seen as representing the highest level of self-perception, with self-efficacies on an individual’s abilities to perform specific sport or exercise activities generalising to a broader perceived physical competence. The model afforded a flurry of empirical work and has subsequently been validated in a number of studies by Sonstroem and others. For example Sonstroem and Morgan (1989) built on the original hierarchical model of Shavelson et al. (1976) and made recommendations for self-esteem enhancement through exercise participation. Sonstroem, Harlow, Gemma and

Osborne (1991) demonstrated the validity of the model structure, explaining 29% of the variance of global self-esteem. Derivatives of the model have been used successfully in factor analytic studies (see Marsh, 1990 for a review) and more recently Marsh and Redmayne (1994) have been able to relate the multidimensional nature of physical self-concept to multiple components of physical fitness. Lintunen (1995) used the model to develop scales to explore stability and changes in self-esteem structure, perceived competence and fitness in young people.

Fox and Corbin (1989) significantly advanced the measurement of hierarchical self-perceptions in the physical domain, through the development of the Physical Self-Perception Profile - PSPP (Fox, 1990). The work evolved from extensive piloting of open-ended questions, based primarily on the work of Harter in the 1980s. Following comprehensive psychometric evaluation, four physical self subdomains were established. These were sports competence, physical condition, attractive body and physical strength, seen as specific and changing aspects of self-perceptions. The PSPP also included a measure of physical self-worth. This was seen as superordinate to these self-perception subdomains and hierarchically organised, such that these five scales were contributors to global self-esteem, which was seen as more general and enduring. The preliminary validation of the PSPP was able to illustrate excellent psychometric properties of the scales in three independent samples of American college students. Fox (1990) demonstrated strong support for four main hypotheses of the hierarchical nature of physical self-perceptions. Firstly, physical self-worth showed a stronger relationship with self-esteem than the PSPP subdomains. (Self-esteem was assessed using the Rosenberg Self-Esteem Scale.) Secondly the subdomain subscales

showed higher correlations with physical self-worth than with global self-esteem. Thirdly, the relationship between the four subdomains' subscales and global self-esteem were significantly reduced, when the effects of the correlations with physical self-worth were partialled out and finally, the relationships among the subdomains was greatly reduced when the effects of physical self-worth were also statistically removed.

Fox and Corbin (1989) hypothesised associations between the self-perception domains and subdomains and self-reported type and intensity of exercise. In one of the preliminary studies, the four PSPP subdomains scores were able to correctly classify 70% of participants as exercisers or non-exercisers (Fox, 1990). In a more finely tuned analysis, the scores from the subdomains could also further classify these participants classed as into high, medium and low activity levels (in terms of their frequency, duration and intensity of activity). The PSPP was also used successfully in distinguishing participants of different types of activity. Two significant canonical functions were identified for both men and women. For these females, one of the functions showed strong structure coefficient loadings for ball sports and weights elements. Contrasting with this was the second function which appeared to relate to exercise and conditioning elements. Fox (1990) suggested that these results may be identifying two types of active women. The first function representing the athletic female and the second function representing the exercising female. For these males, one function showed a "working out male" whereas the other function had a strong sport/athletic component.

In order to afford more research in this area with children and adolescents, Whitehead (1991; 1995, and Whitehead and Corbin, 1988) administered the PSPP to a sample of American schoolchildren. Other work by Whitehead and Corbin (1991) has attested to the construct validity of the physical self-worth subscale with children. On the basis of their results, Whitehead made minor modifications to the instrument to develop a full children's version, now known as the C-PSPP. Whitehead (1995) used this effectively to replicate the hierarchical structure of physical self-perceptions proposed by Fox (1990). Specifically, this study was able to provide further evidence of the construct validity for the C-PSPP and found that the components of the American children's physical self-perceptions were similar to the original samples of American college students. Whitehead (1995) found that C-PSPP scales moderately correlated with physical fitness tests scores. However there were some methodological problems in this section of the study, as different fitness tests were completed by different subgroups of the overall sample and multivariate analyses were not possible. Whitehead (1995) concluded with the recommendation that further work could consider an evaluation of the correlations of the scales with physical activity in children.¹

¹ The original conceptualisation of the methodological tools for use in the current study stemmed from the results of these original findings of Fox and Corbin (1989), Fox (1990) and Whitehead (1991). Since that time there has been increasing support for the PSPP, for example from Page et al. (1993) who cross-validated the PSPP with a sample of British college students; Biddle et al. (1993) who used the C-PSPP with British young people (mean ages 12.2 years and 14.88 years); Sonstroem, Speliotis and Fava (1992) who validated the PSPP for use with males and females in their middle age years (mean 44.1 years); Chase and Corbin (1992) with a study of older American adults; and Sonstroem, Harlow and Joesphs (1994) who expanded the EXSEM by concurrent use of the PSPP. Recent reviews of the literature (e.g. Lintunen, 1995) have emphasised the promise of this instrument for research in exercise science. Where relevant, these aforementioned studies will be discussed and used for comparison with the data from the current study.

Fox (1990) also developed the Perceived Importance Profile (PIP) to be used in conjunction with the PSPP. As has been discussed, Harter (1986) proposed that individuals may weight the importance of competence, such that they may downrate the importance of low competence to preserve self-esteem. The PIP was designed to measure this, with the construction of four subscales relating to the importance of each of the PSPP subdomains. Fox (1990) hypothesised that PIP scores would act as a filter or screen between self-perceptions and physical self-worth, as well as between physical self-worth and global self-esteem. The factor analytic exploration of the PIP lent support to its structure and content (although the analyses were not so clear from male participants). Fox (1990) calculated discrepancy scores between perceived importance and competence for each of the subdomains. These were found to relate strongly to physical self-worth, as hypothesised, providing empirical evidence for Harter's discounting hypothesis. In addition, Fox (1990) recommended that further research could consider the independent prediction of physical activity participation from PIP scores in models of exercise involvement.

Whitehead (1995) assessed the use and validity of the PIP in his sample of American children. He was unable to replicate the four factor structure of the importance ratings, but offered his results as support for the notion of the process of discounting. As with Fox (1990), when low competence could not be downrated by an individual, physical self-worth and global self-esteem were significantly lowered. These are important preliminary findings, although the PIP has not attracted the same level of research as the PSPP.

In sum, the development of the PSPP and C-PSPP have allowed for extensive examinations of multidimensional, hierarchically organised, physical self-perceptions, which can be used in relation to physical activity participation. In addition, the PIP has allowed for empirical testing of Harter's (1985) discounting hypothesis. These two instruments have made a major contribution to the measurement of self-concept in the physical domain. The validity of the instruments was initially established with college students and Fox and Corbin (1989) recommended that modifications could be carried out for use with an adolescent population.

5.4 The role of peers and parents

In order to provide a comprehensive account of the factors that may affect youth sport participation, this chapter will explore the role of salient socialisation influences on adolescent development. Socialisation has been defined as “ the process whereby individuals learn skills, traits, values, attitudes, norms and knowledge associated with the performance of present and anticipated social roles” (McPherson and Brown, 1988).

Both parents and peers are thought to play a central role in shaping the development of young people. Yet their influences on sport participation motivation has been a area of study largely producing unclear results, without the empirical rigour seen in the mainstream developmental psychology literature (Weiss and Duncan, 1992). Most theories of motivated behaviour (e.g. Social-cognitive theory, Bandura, 1986) have suggested that the development of perceptions of ability, control and achievement relate to socialisation influences in the form of modelling and reinforcement by significant others, such as family members, peers and friends. In addition, several theories that attempt to link attitude with behaviour include a component of the normative influence of socialising agents (e.g the theory of planned behaviour, Ajzen, 1985). The review of literature in the previous section has shown the relationships between self-perceptions and sport and has intimated at the role that significant others have in shaping these developing perceptions. This will be explored in full.

The literature consistently reports influences from parents and peers on children's and adolescent's physical activity level, although the processes by which these socialising agents influence others in the sport domain still remains poorly understood (Dishman, Sallis and Orenstein, 1985). There has been a call for research in children's participation motivation to adopt a developmental approach (e.g Weiss and Bredemeier, 1983, Duda, 1987, Biddle, 1992a) and for the focus that has previously centred on individually held attitudes, motives and beliefs to be expanded to include relationships and social norms (Anderssen and Wold, 1992). Hence peer and parental influence will be discussed in terms of normal adolescent development, as well as the impact that these may have on young people's sport and exercise participation. The evidence for a direct influence on participation will be considered, as well as that which may operate indirectly, e.g through perceived competence. How peers influence each other, both positively and negatively, is of importance in addition to the understanding of the balance between family and peer group influences. Successful socialisation, in any domain, is thought to be dependent on a number of interacting and reciprocal processes, with multiple inputs and varying outcomes (Lerner, 1985). Contemporary research is only just beginning to address these relationships. The complexities of these social relationships have largely been studied in simplified derivations for pragmatic reasons. Studies which have attempted to examine these multivariate factors will be reviewed.

5.41 The role of peers in normal adolescent development.

Coleman and Hendry (1990) provided three definitions for the term 'peer'. A peer group can be considered to be a small group of similar-aged, fairly close friends; a group of young people of the same age, but not necessarily friends; or group of relative strangers sharing the same activity at a particular time. In terms of sport participation all three groups may be relevant as sport is played both in and out of school, although as young people progress through adolescence they are increasingly likely to spend and enjoy more time with chosen friends rather than with classmates *per se* (Csikszentmihalyi and Larson, 1984).

The peer group is thought to provide an important point of reference to the individual adolescent as they grow more autonomous, providing support and a *context* for developing independence, meeting needs for identity and recognition, presenting opportunities for achievement and the opportunity of playing out a variety of quasi-adult roles (Coleman and Hendry, 1990).

Affiliation and peer group popularity have become important areas for research, perhaps reflecting young people's own concerns to be accepted and liked. Especially in the literature from the USA, success as an athlete is highly rated for boys as an index of popularity and peer group acceptance. Girls are more likely to consider having a 'good personality' and being in a leading crowd as determinant of popularity (Brown, 1990). In fact being an 'athletic star' has been consistently shown to be at the top of

boys' ratings of popularity since at least the 1960's, such as in the early work of Coleman (1961).

Thirer and Wright (1985) attempted to observe any changes in sport and social status over time, by comparing Coleman's (1961) study and Eitzen's (1976) study with their own data collected in the 1980s. Despite the report of Eitzen (1976) which suggested a de-emphasis on the importance of athletics as a status symbol for male adolescents, their results showed that being an athlete was still the foremost criteria for male popularity when judged by both male and female adolescents. Thirer and Wright (1985) examined their findings in light of legislation in the USA, such as Title IX in the 1970s, which aimed to end discrimination in sport based on gender. They suggested that the impact was not as great as had been hoped for, as they still found that athletic performance was not a valued attribute for female adolescents, by either male or female peers. Thirer and Wright (1985) concluded that opportunity for sport involvement alone does not necessarily lead to an immediate change in underlying value systems. However, although being an athlete was ranked very low for females in this study, the females themselves ranked being a cheerleader quite highly as a criteria for popularity (following being in a leading crowd and being a leader in activities, ranked first and second). The authors do not comment on this, but this result is interesting as cheerleading requires considerable fitness and athleticism but is evidently sanctioned as a gender appropriate activity for young women.

Chase and Drummer (1992) have taken a similar methodological approach to that of Thirer and Wright (1985). In this study they attempted to examine the role of sport as

a social status determinant in children aged 8 to 13 years, comparing 1992 data to the findings of Buchanan et al. (1976) on the same theme. They also found no significant changes in the 15 years between the two studies. Sport was not important in determining female social status, nor was sport shown to be an activity in which the girls wished to participate. As in previous studies, boys reported sports to be the most important determinant of their own and other males' popularity. Chase and Drummer (1992) have not viewed this as necessarily positive for developing young males. They posited that an overemphasis on athletic success may mean that boys experience tremendous pressure to achieve this status, when gaining success at sports may not always be possible, due to factors such as lack of ability, delayed physical maturation or lack of opportunity to be in school teams. They also suggested that athletic status is often short-lived and does not necessarily prepare male adolescents for future social status and success. Chase and Drummer (1992) concluded that, ideally, girls should be encouraged to participate without any stigma attached, but that boys should be allowed the opportunity *not* to participate in sports, without losing popularity. Their results also indicated that academic achievement was desired by their young subjects, but to achieve popularity amongst their peers they must be perceived as attractive or good at sports. Chase and Drummer (1992) suggested this may be a cause for concern if there was a trade-off between activities which resulted in a decrease in young people's motivation to participate and succeed in academic pursuits.

Caution must be executed when examining these studies as, virtually without exception, they have been conducted in North America. Such research might be culturally enmeshed to adolescent's experiences in that continent, not necessarily

reflective of the British experience. In a different context, Simmons and Wade (1985) have investigated young people's ideals, sampling the beliefs of adolescents in England and the European Continent. In this qualitative study, one of the open ended sentences the young people were asked to complete was 'the sort of person I would most like to be like...'. The most favoured responses to this were categorised into a group relating to 'physical appearance and popularity'. This was so for boys and girls in both the English and Continental study. Athleticism itself was not directly categorised, but no other response came close in frequency to this one based on appearance. Hence these European young people appeared to place a high value on physical attributes, with the desire to look good and be popular, but without necessarily the same emphasis on achieving this through athletic success as their American counterparts.

The importance of group or crowd affiliation and need for peer popularity has been shown to decline across adolescence, such that younger adolescents generally favour group membership whereas older adolescents often become dissatisfied with conformity demands of a crowd and move towards establishing small, intimate networks of friends (Brown et al. 1986).

Sprinthall and Collins (1995) challenged the popularly held stereotype that parents and other adults lose the power to influence young people because peers encourage adolescents to behave in a manner that parents do not wish. Peer pressure was not seen as necessarily always negative or as strong an influence as has been previously thought. Evidence has been cited which has indicated that young people often make

decisions on their own (Brown, 1990) and that parents and peers often agree rather than disagree (Hartup, 1983).

Brown et al. (1986) found that, although young people reported some pressure from peers to engage in behaviours normally prevented by adults, such as drugs use or sexual activity, these were lower than pressures towards other more sanctioned areas. The young people also reported that friends actively discouraged some of these prohibited activities. Pressures to drink alcohol, engage in drug use and sexual activity have been shown to be stronger in late adolescence, suggesting that young people engage in a process of orienting themselves to activities normatively acceptable in adulthood (Clasen and Brown, 1985).

5.42 The role of parents in normal adolescent development.

As research in lifespan developmental psychology has grown, attention has turned to parental socialisation influences on adolescent as well as child development. The psychoanalytical view that the process of developing autonomy and independence in adolescence, by breaking off infant ties and attachments with parents so that new mature relationships can unfold, has not been upheld by empirical work. The family environment on adolescent behaviour has been shown to be of importance in a number of areas, where previously peers were thought to gain dominance, such as alcohol, drug and substance use (Foxcroft and Lowe, 1995). Although peers undoubtedly provide a prominent socialisation role, especially in late adolescence, parents have been shown to persistently influence young people on a number of health-related behaviours (such as exercise, smoking and alcohol use) through college years and into early adulthood (Gottlieb and Baker, 1986).

Conflicts between parents and adolescents have been shown to exist (Csikszentmihalyi and Larsen, 1994) but research indicates that the majority of discord is over minor issues such as appearance and evening activities. Most households are free from major conflict (Fogelman, 1976). It has also been suggested that the bias in research towards the examination of 'peer pressure', may have arisen as adolescents and their parents do not always provide an accurate perception of their social relationships. Young people may tend towards thinking that their parents are *less* important than they are and parents towards thinking that they are *more* influential than they really are (Belsky et al. 1984).

However, adolescents' *perceived* family environment has been shown to relate to adolescent social behaviour (Peterson and Rollins, 1987) and has proved useful in furthering the understanding parental influence on certain health-related behaviours in adolescence (Foxcroft and Lowe, 1995). Also, Conger and Petersen (1984) have reported that not enough is known as to whether harmony and a respect for opposing views can exist in households, despite disagreements over certain activities.

Coleman and Hendry (1990) summed up the literature on 'the generation gap' by stating that normal adolescent development involved some testing of the boundaries of parental authority, allowing the young person to discover their beliefs. The process from dependence to independence may involve conflict but its extent should not be exaggerated.

The influences of the family on adolescent development start well before the teenage years and continue to influence the development of an individual long after. These influences are manifold and dynamic. The role that parents play in developing self-concept, as well as the ways in which parents act as role models for behaviour and attitudes will be discussed in this section, as these are suggested to be the most relevant to this context of sport participation.

5.5 Parental influence on self-concept development.

Adolescence has been discussed as a time when self-concept is both changing and consolidating (Coleman and Hendry, 1990). The ways in which young people are able to view themselves, both positively and negatively, has been linked by substantial evidence to the importance of two dimensions of socialisation, namely parental (and family) support and control (Maccoby and Martin, 1983). Adolescents who perceive high levels of support for their interests and activities from their parents are likely to have high self-esteem (Hoffman, Ushpiz and Levy-Shiff, 1988). In addition, adolescents from authoritative families have shown a positive self-concept (compared to those from authoritarian families), perceiving their parents as more nurturant and supportive (Buri, 1989). Such families are more likely to foster higher regard for the adolescents' competence, encouraging them to feel confident in their abilities (Ishberg et al. 1989). Shucksmith et al. (1995) have provided a contemporary British analysis of models of parenting and the effects on adolescents, adding further support to the work of Maccoby and Martin (1983). In this study parenting was also shown clearly to have important consequences for the psychosocial development in adolescence. Again an authoritative parenting style, one of high perceived levels of acceptance and control, was deemed the most effective when judged against measures of school integration and mental well-being.

Sprinthall and Collins (1995) pointed out that causality may in fact be in the direction such that those young people with high self-esteem who exhibit 'positive' behaviours, may be more likely to elicit constructive family interactions. They also suggested that

the potential impact of the family on self-concept is so great as to permeate most areas of adolescent development and behaviour.

5.51 Parental role models.

Social learning theory (Bandura, 1977) provided an account of the ways in which children learn social behaviours through observing and imitating models (usually their parents). According to social learning theory, children's identification with their parents provides a fundamental basis for development, in areas such as language acquisition and skill, dealing with aggression, developing a moral sense and gender role.

The ways in which parents act as role models for behaviour and development in adolescence has not been a well developed area of research. Although during adolescence children may begin to spend less time with their parents, they still are thought to act as important role models, especially in the area of sex roles and work roles. Parental role models have been considered crucial to the development of a young person, as they begin to make their own role choices; the influence moderated by the nature of the role model and the degree of identification between parent and child (Coleman and Hendry, 1990). In the classic study by Hetherington (1972) of teenage girls, the effects of parental absence on behaviour was clearly shown. These girls, with either the father absent through death or divorce, manifested deviant behaviours in their attempts to cope with their anxiety and lack of skills in relating to

males. This is not to suggest that, in gender role identity and behaviour, parents are the only socialisation agents, as the power of other role models such as found in schools and the media have also been established (Beal, 1994). Nonetheless it has been stated that it is parents on whom all adolescents depend for knowledge and example (Coleman and Hendry, 1990).

5.52 Socialisation factors in youth sport participation.

The review of family influences in sport socialisation provided by Lewko and Greendorfer (1988) highlighted the methodological inadequacies that have pervaded research in this area. Such that this area of research has been repeatedly criticised as being theoretically under-developed and lacking conceptual frameworks. Alongside this, there exists only a relatively small amount of sound empirical work to substantiate claims that have been made about the possible social influences on youth sport participation, from peers, the school, and the relative influence of fathers, mothers and siblings on activity levels of both boys and girls. Lewko and Greendorfer (1988) pointed to three possible confounding features in the sport socialisation literature. Namely a) factors that affect initial involvement, b) factors that maintain involvement once committed and c) factors that shape the pursuit of excellence. Following this, they suggested a conceptual reformulation whereby sport socialisation could be viewed as; firstly the introduction or initiation into sport, then the maintenance, persistence or continuation of involvement, and finally role withdrawal or desocialisation (described as retirement, dropping out or temporarily leaving sport).

In a more recent review Brustad (1992a) also made the point that, whilst socialising agents assume a prominent role in shaping young people's developing perspectives of both sport and self-concept, there exists only a limited research focus on the social correlates of the psychological processes in youth sport participation. In a similar vein to Lewko and Greendorfer (1988), Brustad (1992a) distinguished the sport socialisation process into three major components. Firstly the socialisation *into* sport,

which refers to the social and psychological influences that are considered to promote an individuals' initial attraction to sport. Such influences may be thought to include the attitude and values within the family and peer group. Secondly, the process of socialisation *via* sport whereby individuals acquire attitudes, values and knowledge as an outcome from their sport involvement. The third component is that of socialisation *out of* sport, namely the factors that lead to discontinuation of sport participation.

5.53 Early socialisation into sport.

“ As the first and most immediate context of learning, the family's influence on our uptake of sport can not be overestimated”. (Hendry et al. 1993, pg. 59.)

The socialisation process into sport undoubtedly occurs early in the lifespan. Moore et al. (1991) monitored the activity of 4 to 7 year old children and their parents, using Caltrac devices to record heart rate. The participants were classified as active or inactive based on comparisons to the median for their generation and gender-specific distribution. The results showed that children of active mothers were twice as likely to be active as children of inactive mothers, whereas children of active fathers were 3.5 times as likely to be active as children of inactive fathers. Thus they indicated that both parents were shown to be important in influencing activity levels with this young age group, but there may be a paternal supremacy. However, there was also a six-fold increased likelihood of the child being active if both parents were active, compared to families where neither parent was active. These were physiological associations and

not psychological ones as such, but nonetheless these findings indicate the salient role that parents have in influencing activity in young children.

Moore et al. (1991) suggested that the results of their study were consistent with four possible mechanisms that could explain the effect of parent's activity levels on children's activity. Their first suggestion was in accordance with social learning theory (Bandura, 1976) and that parents act as role models for activity and that the value parents place on being active themselves encourages their children to value being active. Secondly, that in this young age range, much activity is shared within the family unit and hence obviously reported to be at a similar level. However, much of the Caltrac monitoring in this study was recorded separately, i.e. when the parents were at work or home and the child at school. Hence the authors suggested that it was unlikely that association between parent and child activity level was purely a result of shared environment. The third possible suggested mechanism was that of parental support for activities. This can be seen as complementing what might be expected from general theorising on parenting e.g. Maccoby and Martin (1983), where the importance of parental influence on behaviour in terms of support and control has been discussed. The fourth hypothesised mechanism given by Moore et al. (1991) was that of a genetic or innate predisposition towards physical activity levels. Most research has not gone down the path of searching for inherited traits that relate to physical activity levels, except most notably, an early twin study by Scarr (1966) who suggested a significant genetic component may exist for physical activity. Scarr's work has developed greatly since that time, with explanations of genotype-environment interactions (e.g. Scarr and McCartney, 1983).

Powell and Dysinger (1987) have reviewed the literature more recently, with the aim to assess the evidence that suggests that childhood sport participation may act as a precursor to adult physical activity levels. They reported from the small number of relevant studies which have observed associations with childhood and adult levels of physical activity, that opportunity alone can not explain participation rates and that constitutional and genetic factors were important determinants of physical activity participation at all ages.

Whilst Moore et al. (1991) have cited the work of Snyder and Purdy (1982) they do not use their findings directly to propose a further possible mechanism. In this seminal study by Snyder and Purdy (1982) it was shown that the sport socialisation process may indeed be bi-directional. Their findings suggested that parents may promote and support their children's participation, but often if a child is keenly involved in sport the family as a whole makes some readjustments, which represent a reverse socialisation effect. Snyder and Purdy (1982) provided evidence to show that parents often increase their knowledge and involvement in sport following their child's activity. It is not worthwhile attempting to pinpoint causal ordering, as in accordance with contemporary developmental theory on parent - child interactions (e.g Lerner, 1985), the likelihood is that such influences are both dynamic and interactional. However the social processes whereby children can influence their parents goes some way to mitigate against a genetic argument.

Brustad (1992b) has investigated parental socialisation influences on children's attraction to, and involvement in, physical activity, using a theoretical framework suggested by the work of Harter's (1978, 1981) competence motivation theory and Eccles et al.'s (1983) model of achievement and activity choice. Both these models have suggested that parental feedback and behaviour play a fundamental role in forming children's self-perceptions of competence and influence beliefs about the appropriateness of being personally involved in various activities. Hence Brustad (1992b) assessed parents' own enjoyment of physical activity, current fitness status, attitudes about the importance of physical activity and the degree to which they believed they encouraged their child to be physically active. In addition their children (mean age 10 years) provided measures of perceived physical competence and personal attraction to physical activity.

Using complex path analytic modelling the results provided further support for both Harter's (1978,1981) and Eccles et al.'s (1983) theories in the sport domain.

Specifically it was shown that parental encouragement of their child's activity related positively to their enjoyment of physical activity. There were significant gender differences in terms of boys receiving more encouragement. Parental encouragement mediated the relationships between the parental attitude/ gender variables and the children's perceptions of physical competence and importance of physical activity.

Perceived physical competence was significantly and substantially linked to all aspects of attraction to physical activity. Canonical correlation analysis revealed that 44% of the variance among the children's attraction to physical activity could be explained by the various predictor variables, with perceived physical competence and parental

enjoyment acting as the best predictors. Brustad (1992b) hence concluded by suggesting that children's involvement in physical activity is largely contingent on their self-perceptions of ability and that parents assume an instrumental role in shaping these perceptions.

5.54 Socialisation within sport.

Controversy has prevailed as to the possible psychosocial outcomes for children and adolescents that may arise *via* the sport socialisation process. Generally, participation has been seen as a 'good thing' for young people and a positive environment for socialisation, in terms of developing skills, morals, and social roles for example. Those involved in the delivery of youth sport, such as Physical Education teachers and coaches have attested to the social benefits of children's involvement in physical activity and sport in citing beneficial outcomes such as discipline, sportsmanship and interpersonal skills (Wiggins, 1987). However, Birrell (1983), for one, has contested that much well-grounded folklore, such as 'sport builds character', a 'sense of fair play', and the 'ability to win or lose graciously', whilst often forming the basis of youth sport promotion, are largely unsubstantiated. A review of the empirical evidence on the relationship between sport participation and psychosocial development has shown that methodology in this area has been weak and very few causal relationships have actually been established (Danish, Petitpas and Hale, 1990)

Nonetheless, there is evidence that social processes that occur between peers within the context of sport participation, can foster desirable outcomes in terms of increased

physical competence. Evans and Roberts (1987) have contended that, whilst athletic ability is seen as a strong social asset in young people, at least for developing males, there has been a general lack of attention to peer relations in physical activity settings, which is perhaps somewhat surprising. In their review of the literature a very intervention-orientated stance was taken, drawing together evidence to suggest that, if Physical Education programmes are well designed, children's physical competence could be improved. Evans and Roberts (1987) further suggested that such programmes could enhance the development of peer relations of children identified as being of low status and thus intervene in the negative social spiral associated with peer rejection. Hence sport participation can provide an arena not only for reflecting existing social acceptance of a child by their peers, but also that the opportunity to participate can also be used as a medium for enhancing the competence and popularity of previously peer-rejected children.

Weiss and Duncan (1992) have built on the work of Evans and Roberts (1987) to examine further the previously elusive relationship between competence in physical skills and interpersonal competence with peers within a sport setting. Children (aged 8 to 13 years) provided measures of perceptions of physical competence and peer acceptance; perceptions of success for athletic performance and interpersonal skills; causal attributions for physical acceptance for physical performance and interpersonal success, and expectations for future success in these two areas. Teachers' ratings of the children's actual physical ability and social skills with peers were also obtained. As was hypothesised, the results indicated a strong relationship between physical competence and peer acceptance. More specifically, children who scored highly in

actual and perceived physical competence and gave stable and personally controllable attributions for their sport performance, also scored highly in actual and perceived peer acceptance.

Weiss and Duncan (1992) concluded with some specific recommendations for future research. They stated that

“It would be of considerable interest to determine whether supportive peer relations can directly influence patterns of sport participation or indirectly influence participation behaviour through effects on self- perceptions of ability, affect (e.g., pride, enjoyment), and general self-worth.” (Weiss and Duncan, 1992, pg. 186.)

They also suggested that

“Future research should attempt to assess the relative influence of adults and peers at different developmental stages, paying particular attention to the development of positive self-perceptions of ability, coping with stress and sustaining motivation to participate in physical activity.” (Weiss and Duncan, 1992, pg. 187.)

Although Weiss and Duncan (1992) have made an important contribution to the literature with this study they nonetheless concluded by stating that little is still known about the link between physical competence and peer relations within the sport context. These recommendations for future research have been incorporated into the current study.

5.55 Continuing socialisation influences in adolescence and the desocialisation process.

By adolescence, young people will have acquired significant socialisation into and within sport from their earlier experiences. This is not to say that the social influences stop there. As discussed previously through the work of Lewko and Greendorfer (1988) and Brustad (1992a), the three-fold process of sport socialisation contains a phase whereby children are socialised out of sport. This can be transposed onto the lifespan continuum and evidence is such to suggest that the desocialisation process occurs during late adolescence.

Anderssen and Wold (1992) have provided an important contribution to the literature with their study of the influences from parents and friends on Norwegian adolescents' self-reported physical activity. In this study, activity levels were compared to measures of perceived leisure-time physical activity of parents and best friends; perceived direct support for physical activity from parents and friends; direct help from parents in exercising vigorously, and perceived value of physical activity of parents and friends.

The results from regression analyses indicated that the first three of these predictors explained 14% of the variance for boys and 11% for girls. The variable measuring the value of physical activity of significant others correlated significantly with the three predictors, but did not contribute in a statistically significant way to the explained variance in levels of physical activity for either the boys or girls. These findings add further support to the importance of the sport socialisation process, indicating that

parents and peers can be important role models and sources of reinforcement of physical activity in young adolescents. The correlations between variables in this study revealed that *direct* help from parents in exercising vigorously related most strongly to the young people's leisure-time physical activity than any other single item. The authors posited a number of possible rationales for this strong relationship.

Firstly, they suggested that this reflects the trend in which involvement in physical activities requires the capacity to organise such activities, e.g parental organisation of youth sports training sessions. Secondly, Anderssen and Wold (1992) hypothesised that sport socialisation may be of a reciprocal nature and compare their work to the findings and theorising of Snyder and Purdy (1982), described here earlier, which suggested a dialectic process between the person and the social agents. In terms of intervention for low or decreasing sporting activity during adolescence, Anderssen and Wold (1992) concluded that young people's health behaviours could be influenced through changes in immediate environments. They argued that parents and friends should be seen as main targets in strategies to promote physical activity, and that their impact as both role models and sources of support should be capitalised.

Brown, Frankel and Fennell (1989) examined aspects of peer and parental influence on continuity of involvement in sport, in a sample of Canadian female adolescents, aged 13 to 19 years. In this study, continuity of participation was measured by a retrospective assessment of participation patterns from the respondents dating back to their elementary school (from age 11 years) to their present age. The participants were asked to consider three contexts of physical activity; intramural activity, interschool

activity and community sport. These values were then correlated with various measures of the influence of significant others, namely peers and both mother and father. Several variables were used to assess the socialising influences on adherence to physical activity, including the extent of *encouragement* for participation; the relative *support* given to physical activity in comparison to other activities; the perceived belief of the various socialising agents regarding the *appropriateness* of support as a type of activity for adolescent girls; the extent to which mothers and fathers were active themselves, and an overall measure of the extent to which the degree of support or encouragement received for sport participation, relative to other activities, had changed as the respondents had grown older.

The results showed modest correlations (.13 to .34) between each form of influence and continuity of participation in each of the three contexts. Hence, regardless of the context considered, parents and peers were perceived to exert some influence on involvement, the combined influence greater in the school context than for community based sport, where coaches were assumed to play a significant role. Brown et al. (1989) went on to analyse their data for specific effects according to source and type of influence examined, and the context of participation. Small but significant correlations (.10 to .30) were found between participation and parental influence for all three contexts. Fathers were shown to be the more important socialising agent, except for with regard to active sport role modelling, where mothers were found to be the more important influence.

With regard to peers, both male and female peer influence were shown to positively correlate with continued involvement in sport, with female peers the stronger influence in sport played out of school time on the girls in this study. There were no significant correlations between male peer influence and community sport. The authors placed this result in a feminist context with the suggestion that community-level sport (described here to indicate a competitive environment) is the area which may seriously transgress gender norms. Regression analyses of these data revealed that the various socialising others accounted for between 10% to 20% of the variance in physical activity levels, depending on the context. The highest value here being able to explain variance in interschool sport participation. In each context, the influence of male significant others (fathers and male peers) made a contribution to explaining variation in participation of these girls, although mothers who were active in sport appeared to be important in the competitive contexts.

Regardless of the context for participation, a perceived change in support over time made one of the most significant contributions to explained variance. This added empirical support to the conceptual frameworks of Lewko and Greendorfer's (1988) and Brustad's (1992a) suggestion of a socialisation out of sport, or desocialisation process. Brown et al. (1989) suggested that if females were to remain actively involved in sport, *increasing* (not just maintaining) the support for sport, relative to other activities was essential, for both sport played in and out of school.

In sum, this study goes some way to explaining socialisation influences on the commonly reported high attrition rate from sport for adolescent girls. Overall, those

females who received more encouragement and support for their involvement as well as having peers who perceived their involvement as appropriate, and experienced *increased* support as they grew older, had stronger patterns of continuity compared to others in the sample who reported less positive influences. The complex, multifactorial nature of these relationships was demonstrated. Not only did these influences vary between peers and parents by gender, but also by types of social reinforcement and the context in which it was provided.

In their attempt to disentangle the sport socialisation process, Brown et al. (1989) have raised for themselves as many questions as they answered. They asked how individuals come to attend to particular influence in one context and not another; how particular significant others come to exert power in certain situations, and the role the socialisee may play as an active participant in the socialisation process. The notion that young people are passive recipients of information and are 'shaped' by socialising agents has been critically challenged elsewhere in contemporary, mainstream developmental psychology. See Ruble (1987) for an excellent review of the self-socialisation perspective on development.

From a broader perspective, the study by Brown et al. (1989) unfortunately fell prey to a number of methodological problems. No account was given of the reliability or validity of the scales that were constructed to measure the various influences on participation. Also, all the correlations that were reported were leaving large amounts of the variance of sport participation unexplained. In addition, as with most studies in this area causal processes could not be determined. Whilst at the start of this chapter it

was suggested that the more usual research perspective, centred on individually-held motives, self-perceptions and beliefs, should profitably be expanded to include socialising influences (e.g. following the work of Anderssen and Wold, 1992), this research by Brown et al. (1989) had too narrow a perspective, concentrating almost solely on socialisation factors.

Godin and Shephard (1986) have provided an important study which included measures of the possible influences of *both* personal attributes and family environment on exercise intentions, in a study of 12 to 14 year old schoolchildren. The theoretical models of Ajzen and Fishbein (1985) were used as a conceptual and empirical framework, where intentions are predicted from attitudes and subjective norms. Godin and Shephard (1986) found that attitudes, current physical activity levels and prior experience of exercise all contributed significantly to explaining the variance in exercise intentions, although more than 50% of the total variance remained unexplained. The results also indicated that more variance could be explained when personal experience of physical activity from early in childhood was included in the prediction.

Godin and Shephard (1986) concluded that these results offered support to the value of early socialisation towards continued involvement in physical activities in adolescence. From a conceptual point of view these results suggest that the three stage socialisation process proposed by Lewko and Greendorfer (1988) and Brustad (1992a) has a natural flow through i.e. that the stages are not independent. The regression analyses of Godin and Shephard (1986) were probably able to explain more

variance than that of the Brown et al. (1989) or Anderssen and Wold (1992) cited earlier, because their dependent measure was that of exercise *intentions*, whereas these other studies recorded actual participation rates. Commonly in psychological research stronger relationships have been found for intentions to engage in a certain behaviour, rather than with measures of the actual behaviour itself where there is often a weak, empirical link. Also, as Anderssen and Wold (1992) point out, psychometric weaknesses in the measures used in theirs (and similar studies) might have meant that the relationships between socialisation influences and the activity levels of young people may indeed be stronger than were shown.

Kunesh, Hasbrook and Lewthwaite (1992) conducted a small scale, qualitative study, with the aim of looking specifically at physical activity socialisation through observations of peer interactions and affective responses among 11 to 12 year old girls. The methodology differed here from the more usual large scale surveys. Kunesh et al. (1992) concentrated instead on video-taped observations of the children at play, sociometric evaluations and interviews. Socialisation experiences within three types of physical activity were examined. They looked at formal sport, exercise and informal play/games. The theoretical base of this study was set in the interactionalist view of socialisation, in which individuals contribute towards constructing their own socialisation experiences.

The findings from this study also indicated physical activity socialisation to be context specific, with respect to both activity type and also the social setting. None of the girls studied here chose to participate in formal sport, but most appeared to enjoy physical

activities in informal settings, within their home and neighbourhood environments.

Kunesh et al. (1992) offered this finding as preliminary evidence that these girls helped to shape their socialisation experiences by choosing to be involved in some activities and not others. They also provided evidence that the peer group may act as an important location for physical activity socialisation. The girls reported negative treatment from male peers in the formal activity settings which deterred them from wishing to participate. This included a subordination and criticism of the girls' physical skills and low social acceptance of girls' general physical activities.

Away from the formal sport setting the girls in this study apparently enjoyed engaging in physical activities with both boys and girls and accepted negative comments as a natural part of playing, as they saw their peers in this setting as friends whom they trusted. Hence the findings indicated peer interactions in informal settings to be associated with positive affect in these girls, even if they were treated critically by their friends, compared to the formal sport settings where peer interactions were associated with negative affect and hence the desire to avoid participation.

The most recent and comprehensive account of British adolescent's pattern of sport and physical activity involvement has been provided by Hendry et al. (1993) in their large scale study 'Young People's Leisure and Lifestyle' (YPLL), completed in 1991. Although not designed specifically to examine socialisation influences, Hendry et al. (1993) couched their survey work in a solid developmental framework and discussed the importance of socialisation influences from both peers and parents on young people's sport participation.

Hendry et al.(1993) cited two major elements that appear to be directly related to attraction towards and avoidance of sport participation. Consistent with other research in this area these elements are stated as a) the availability of significant role models (e.g parents) for the young person and b) sports-related reinforcement, as evidenced by parental expectations, encouragement and support.

The findings from Hendry et al. (1993) added further support to gender differences in sport socialisation. Between the ages 13 to 16 years the YPPL data revealed that 39% of the males reported that they played competitive sport due to the influence of family involvement, compared to only 24% of the girls. The younger adolescent males were particularly influenced by parents, with 52% aged 13 to 14 years, reporting parental influence of their involvement compared to only 27% of the same aged girls. To a much lesser extent parents were also shown to influence recreational sport, but the pattern was the same for both contexts, i.e. showing a decrease in the influence of parents on sport involvement with age.

Hendry et al. (1993) cited results from an early phase of the YPPL study (Hendry, Shucksmith and Love, 1989) which indicated that parents can encourage sport participation through example. Young people who played sport competitively at school, were more likely to have a father who played sport or was involved in the organisation of sport, when compared to those who did not participate in competitive school based sports. Hendry et al. (1993) also pointed to the important role that parents can play in promoting their children's involvement in sport, by offering

instrumental support in the form of financial assistance, transport to events and informing their children about local amenities.

The 1991 analysis of YPLL data has also provided a further understanding of the relationship between peers and sport involvement. In early adolescence friends were seen to promote involvement, suggested to be due simply to acting as fellow participants. These young people reported that they were more likely to play sport with friends than with any other social grouping, including family members. Thus 71% of the males, aged 13 to 16 years, claimed an influence from friends on their involvement in competitive sport, compared to 52% from the same aged females. Over 75% of both sexes, in this age range, reported peer influences on their recreational sport.

The influence of friends on competitive sport participation was found to increase from age 13 years for both males and females whereas the influence on recreational sport remained generally high and stable. These results were set in direct contrast to the parental data, which showed a sharp decline in influence. Hendry et al. (1993) offered these results as being consistent with what would be predicted from focal theory of adolescent development (Coleman and Hendry, 1990) which highlighted the growing role of peer influence at this age. With regards to dropping out of sport the young people did not give changes in socialisation patterns as an explanation. Instead, they report the main reasons as being due to lack of time to practice, loss of interest and the growing importance placed on other activities. Hendry et al. (1993) suggested this

finding is also consistent with focal theory which predicts a developmental shift away from organised activities to casual and then commercially-based leisure interests.

5.6 Summary of findings related to socialisation influences on youth sport participation.

The complexities of the issues involved have been shown in this chapter. Globally, socialisation influences on children's and adolescent's sport involvement have been best categorised into factors relating to early socialisation, experiences within sport and a desocialisation process (Lewko and Greendorfer, 1988, Brustad, 1992a). The influence of parents and peers in the context of sport mirrors normal adolescent development, although it has not always been viewed in this context. Hence parental support and encouragement came through as factors that related to levels of participation. These have been considered to operate in terms of a direct assistance from parents, for example transport to a sporting event, but also by parents acting as role models for their children. Parents who themselves were participants have been shown to have active children. The young person may also be proactive in creating their own socialisation environment, with the relationship between socialisation acting bi-directionally, for example in cases where children involve their parents in their own sporting activities.

As a young person moves through adolescence parental influence on sport participation, as in other domains, appears to decline but remains relevant. In addition

the effect of peer and parental influence may be moderated through both perceived and actual physical self-competence. High physical self-competence relates strongly to children's attraction towards physical activities and parents and peers play an important part in shaping these perceptions.

Peers and friends have been shown to be important influences on participation throughout the whole of adolescence, in some instances merely by acting as co-participants but by also offering support and encouragement. The salience of peer influence becomes greater in late adolescence as the young person moves away from adult-organised activities to peer-led recreational activities. Athletic status has been found to consistently determine peer popularity and status for boys, but not so for girls. Carefully designed Physical Education programmes can improve a boy's perceived and actual physical competence and can thus act as a medium for improving peer acceptance.

Gender differences in socialisation are reflected in the sport context. Boys are encouraged to be more active than girls. Despite legislation in some countries and the widespread changes in society's view of gender, sport is still seen as more gender appropriate for boys. Both mothers and fathers and male and female peers effect sport involvement in complex ways, dependant on the gender of the child and the context for participation.

Studies that have included both individual and social factors are able to explain more of the variance in adolescent sport participation than those which have considered

these factors in isolation. This review has highlighted the difficulties of conducting research in this area. The literature is still plagued with oft-repeated methodological problems. Most studies produce similar findings, with variables conceptualised in similar ways, e.g. 'parental encouragement', but these have operationalised differently between studies. Not enough attention has been paid to issues of definition, standardisation or the psychometric properties of scales that have been constructed.

Chapter 6

Towards an integrated approach

6.1 Introduction to the study.

The review of literature has revealed questions and issues that call for further investigation. Although there now exists an extremely large body of research into various different aspects of physical activity in children and adolescence, there remains a strong impetus for more research to be done so that the understanding of psychosocial determinants can be ascertained (Dishman et al. 1985) and effective health-related intervention can be planned (see Power, 1995).

Youth sport participation has been shown to be contingent on numerous, complex, interacting and transacting variables. Viewing this in a global way, both self-perceptions and socialisation influences have been shown to determine participation. The review has shown that a focus solely on one or the other is inadequate if a full account of participation is sought. Hence, this study aims to integrate these two areas of research.

Specifically, more research is needed to ascertain levels and type of physical activity participation during adolescence and these will be investigated. Physical self-perceptions will be assessed using established measures, hitherto unused in large samples of British youth. The organisation of physical self-perceptions will be

examined as well as stabilities and changes that may occur during the transition. The study will aim to demonstrate the relationships between these self-perceptions and sport and exercise participation. The review highlighted the potential influences from peers and parents on both self-concept development and directly on sport and exercise participation. These will also be explored. Socialisation factors in youth sport participation have not been so extensively researched and in light of this, the study will aim to advance the measurement of these influences. The study will also investigate the disturbance associated with physical activity in youth. Age and gender differences will be examined throughout.

Chapter 7

General Methodology

7.1 Overview and rationale.

In 1989, Biddle and Fox chartered the emerging relationships between the fields of exercise psychology and health psychology and the notion of health-related fitness is now widely accepted. Most research that has examined the psychosocial influences on and outcomes from physical activity in children and adolescents has been confined to the study of single age groups or ages within a narrow band. Such studies have often been without any explicit developmental perspective or context. One of the main thrusts of this study has been to further integrate the field of health and exercise psychology with the methods and theories from mainstream developmental psychology. This was thought to provide a better understanding of the factors affecting youth sport participation and physical activity, that in turn may affect health-related outcomes. The decline in levels of physical activity that occurs across adolescence is now a well-documented finding and one of major national and international concern, for those involved both in research and policy. In order to examine the causal factors that influence this decline there has been a widely accepted need for longitudinal studies in this area (e.g. Sallis and McKenzie, 1991).

Longitudinal studies are considered to be the best method of data collection for examining developmental processes. Such designs have been particularly emphasised

with the emergence of lifespan developmental psychology. Here constancy and change in an individual's life have been conceptualised as reflecting the outcome of four interacting and transacting headlines in development; namely the biological trajectory, the social trajectory, reciprocal interactions between the individual and their environment and the chance event (Clarke and Clarke, 1984). The less obvious of these, the chance event, has been described by Clarke and Clarke (1984) as "fortuitous encounters" that may have a small impact on the individual or alternatively leave a lasting effect, perhaps leading the individual into a new life path. Thus the major advantages of longitudinal studies are seen to be their sensitivity to individual patterns of change. Data about individuals can be tracked over time with the possibility to explore causal relationships.

Longitudinal studies are, however, not without well-established intrinsic methodological problems. They are considered costly, time consuming and vulnerable to sample loss and bias (Papalia and Olds, 1995). As with much other research, for these reasons the current study was planned to be cross-sectional in design. Whereas longitudinal studies record *change*, cross-sectional studies provide information about *differences* between individuals. As all the participants are tested on the same occasion cross-sectional studies are seen to have the advantage of speed and economy. There is also a reduced likelihood of sample loss. The interest of adolescence in the current study (taken as an age range from 11-18 years) was thought appropriate for measuring developmental and behavioural differences between young people and would be unlikely to incur the problem of the cohort or generational effect that may bias cross-sectional research if large age differences are compared.

In addition, a further rationale for conducting this current study within a cross-sectional design was due to the changing role in society that sport participation may have over time. From a sociological perspective, Jarvie and Maguire (1994) discussed the social construction of sport and leisure, describing the sensitivity to changing patterns of cultural and societal norms, with a complex place for sport and leisure in social thought. This would all be difficult to measure and track within a longitudinal design. Hence a cross-sectional study of psychosocial processes relating to sport participation would provide a reasonable 'snap shot' of the time and the people studied. The results from such a study would at least be grounded in the same historical moment.

The review of the literature has highlighted the role and salience of self-perception in relation to investigations of sport and exercise behaviour in children and young people. It has also been shown that there is a need to integrate socialisation factors into this paradigm of research (e.g Brustad, 1992) and to include an awareness of developmental processes.

Methodological problems have hampered research in this area. Following his review of measurement approaches Brustad (1991) commented that

“A void exists in the capacity to assess children’s perspectives on physical activity and exercise. Consequently, little is known about relationships among physical activity- related cognitions and children’s exercise patterns.” (Brustad, 1991, pg. 229).

Brustad (1991) made five recommendations which were offered as assistance to developing useful research instruments in the study of children’s exercise and physical activity. These suggested future directions were that:

- 1) “Research measures should reflect contemporary theory and research on relationships among cognitions and behaviour.”
- 2) “The multi-dimensional nature of physical activity necessitates a comprehensive measurement approach.”
- 3) “Measures employed must be appropriate for use with children.”
- 4) “Greater attention should be devoted to assessing children’s perspectives on leisure time physical activity and exercise.”
- 5) “Researchers must thoroughly assess the psychometric properties of measures they use.”

(Brustad, 1991, pg. 229)

It was hence intended to fully embrace these suggestions and take heed of these measurement concerns, by incorporating them into the design and analysis of the current study.

As has been discussed, the work of Fox and Corbin (1989) and Fox (1990) have been advocated as a sound basis for research into physical self- perceptions that can be related to sport and exercise participation. It should be noted that, at the time this study commenced (June 1992) there was no published work known to the author that had used Fox's (1990) 'Physical Self- Perception Profile (PSPP)' or 'Perceived Importance Profile (PIP)' with young people across the adolescent age range. The work of Tappe et al. (1990), which used personal investment theory to predict exercise involvement in adolescents, was seen as having much promise. It was not used here as the multidimensional, hierarchically organised nature of self-perceptions is not included in the original model, although it could be extended in this way.

The following chapters describe the full development of the questionnaire materials used in the current study and a detailed account of the survey administration.

7.2 Questionnaire development and design.

7.21 Measuring physical activity.

Following the review of the literature (see chapter 2.2) a self-report measure of physical activity was selected for the study. In sum, this review has shown that a questionnaire is the best method for measuring physical activity, over other methods such as heart rate monitoring and interview recall techniques (Biddle, Mitchell and Armstrong, 1992, Paffenberger et al. 1993) and are now used widely. There has been some concern expressed over the use of questionnaires with children, although self-report measures of physical activity have been shown to be sufficiently reliable and valid for even very young children (Sallis et al. 1993). Nonetheless, such instruments need to be carefully administered, standardised and evaluated in a uniform fashion to large populations (Paffenberger et al. 1993). Powell (1988) pointed to the imprecise and variable definitions of physical activity which have encumbered research in this area. He advised that physical activity should be characterised in terms of type, frequency, duration and intensity. This complements British research which advocates self-report data, showing the shortcomings of research which only measures *levels* of activity and does not include *type* of activity (Biddle and Armstrong, 1992).

In light of the absence of any standardised measure of physical activity participation suitable for use with British adolescents, the Physical Education Association Research Centre (PEA) was contacted by the author. They provided an unpublished physical

activity record.¹ This self-report questionnaire was designed to assess the type and amount of physical activity that the respondent undertook in a stated period prior to being tested. An introductory sheet advises the respondent that physical activity includes exercise, sports and movement sessions such as dance, that is chosen as part of a *weekly* routine. The record includes a given space for participants to indicate if they have *not* taken part in any regular activity in a specified period before the study.

This physical activity record consisted of 20 activities grouped in 4 subsections. These were sports activities (e.g. rugby); stamina and fitness activities (e.g. jogging); strength and muscular activities (e.g. weight training) and other miscellaneous activities (e.g. yoga). In addition, after each subsection space is given for the participant to indicate any other activity they may have done. Beside each activity there appear three columns for the participant to indicate the frequency, intensity and duration of each activity in turn. The respondent is requested to consider which of the activities they have done (if any) and then for each activity to indicate the appropriate *quantity* on a scale of 1 to 6. See appendix 1 (pg. 367) for the full version of the physical activity record.

¹ Personal communication with Angela Page, Research Scholar, PEA, School of Education, University of Exeter. 18th June 1992.

This self-report measure appeared highly appropriate for studying young people's physical activity and was hence adopted for use in the current study. In addition to the instructions provided by the PEA it was felt necessary to add a further introductory sentence, for use with young people, to stress that "there are no wrong or right answers as people differ a lot in the type and amount of physical activity that they do". This was included in an attempt to reduce demand characteristics.

7.22 The measurement tools for assessing physical self-perceptions.

The Physical Self- Perception Profile (PSPP) (Fox, 1990).

This is a multidimensional measure of physical self-worth developed by Fox (1990) and Fox and Corbin (1989). It consists of four subdomains of physical self-worth namely, sports competence, body attractiveness, physical strength and physical condition. The PSPP also provides a measure of physical self-worth.

The following is a description of the physical self-perception measures (from Fox, 1990).

<u>Construct</u>	<u>Domain</u>
Physical self-worth (PSW)	General feelings of happiness, satisfaction, pride, respect, and confidence in the physical self.
Sports competence (SPORT)	Perceptions of sport and athletic ability, ability to learn new sport skills, and confidence in the sports environment.
Physical condition (CONDITION)	Perceptions of level of physical condition, stamina and fitness, ability to maintain exercise, and confidence in the exercise and fitness setting.
Body attractiveness (BODY)	Perceived attractiveness of figure or physique, ability to maintain an attractive body, and confidence in appearance.
Physical strength (STRENGTH)	Perceived strength, muscle development, and confidence in situations requiring strength.

There are six items in each of these subdomains and the measure of physical self-worth. All items were constructed by Fox (1990) using a four-choice structured alternative item format. This was suggested by the work of Harter (1985) where such item format has a record of avoiding problems associated with socially desirable responses (Fox, 1990).

Whitehead (1995) modified the PSPP for use with children (C-PSPP). The final version of this included Harter's global self-esteem questions from the Perceived Competence Scale for Children (1982) (6 items) and two additional trial items to the attractive body scale.

For each of the items participants are presented with a two alternative statements and are asked to consider which is really true for them. They then rate it 'really true for me' or 'sort of true for me'. The maximum score for each item is 4 and the minimum is 1. Hence for each subscale the maximum score for each subscale is 24 and the minimum is 6, with a midpoint of 15. (The additional trial items used by Whitehead (1995) on the attractive body subscale give a maximum of 32 and a minimum of 8).

Example item from the C-PSPP: Sports competence subscale.

Some kids do very well at
all kinds of sport

BUT

Other kids don't feel that they are very
good when it comes to sports

As with the PSPP half of the items in the instrument are reversed with the lowest scoring descriptor alternatively placed first and second (Fox, 1990). Also, the C-PSPP is constructed so that each of the items from the subdomains appears in sequence throughout the profile (i.e. SPORT, CONDITION, BODY, STRENGTH, PHYSICAL SELF-WORTH, GLOBAL SELF-ESTEEM).

The Perceived Importance Profile (PIP) (Fox, 1990).

The PIP was developed at the same time to be used in conjunction with the PSPP. This provides measures of importance or adequacy that individuals attach to each of the subdomains of sports competence, body attractiveness, physical strength and physical condition. The PIP contains four two-item scales relating to each of the PSPP subdomains. This was also amended by Whitehead (1995) for use with children. As with the PSPP, the items are presented in sequence with half of them reversed. The version used in the current study was adapted from the original PIP (Fox, 1990).

7.23 Measuring peer and parental influences on physical activity.

In light of no known standardised measures of socialisation influences on young people’s sport and exercise participation, the work of Brustad (1992b) was modified for use in the current study. Brustad (1992b) conducted a study examining attitudes towards exercise and physical activity in a sample of 10 year old children, with the aim of including an investigation into the nature of parental influence upon children’s emerging self- perceptions. He devised a 33 item questionnaire using a structured alternative approach. This instrument includes 7 items relating to perceived physical competence and 26 items relating to personal attraction to physical activity. For use in the current study 2 items specifically referring to the influence of parents were selected for use as well as 4 of these items specifically referring to the influence of peers/ friends.

Parental influence items (from Brustad, 1992)

Some kids have parents who think it is <u>very</u> important for their kids to get a lot of exercise	BUT	Other kids have parents who don’t think it is so important for their kids to get a lot of exercise
Some kids have parents who really want them to get involved in sports	BUT	Other kids have parents who don’t care if they get involved in sports

Peer/ friends influence items (from Brustad, 1992)

Some kids like playing games and sports because that is what their friends like to do	BUT	Other kids have friends who like to do other things
Some kids get told by other kids that they aren't very good at games and sports	BUT	Other kids get told that they are good at games and sports
Some kids are popular with others when they play games and sports	BUT	Other kids are not popular with others when they play games and sports
Some kids are teased by other kids about being overweight when they exercise or play sports	BUT	Other kids are not teased about being overweight

In addition to these items an additional 8 items were generated that were related to parental influence and an additional 6 items related to peers/friends. From this two 10 item scales were produced 'me and my friends' and 'me and my family'. These additional items were derived from the review of the literature (see chapter 5).

All of these items followed the structured alternative format used in the PSPP. The items selected from Brustad (1992b) were modified from a six choice format to be congruent with all other items into a 4 choice format. As with the PSPP and PIP the items for these two specially constructed scales were with the lowest scoring descriptor alternatively placed first and second.

7.24 'Body Constancy'.

The review of literature has shown that some adolescents, particularly girls, report that the benefits of physical activity participation do not warrant suffering the inconvenience and discomfort that, in their perception, accompanies it (Orme, 1991). Scraton (1987) listed numerous complex reasons for resistance to P.E. by girls including sweating and communal showers in her critical appraisal of school sport. Van Wersch et al. (1990) offered their results in support of Scraton (1987) and provided further evidence that girls do not like the disturbance associated with P.E. They found that high perceived physical competence had a masculine connotation of sport e.g. "muscle, sweat and showers" (pg. 4) and that low perceived physical competence in the sport domain had a feminine connotation e.g. "beauty, care and gentleness". (pg. 4).

To provide some sort of empirical measure of this, six items were included in the current study that had been originally developed in previous unpublished research by the author. See appendix 2 (pg. 370). The items were reworded into the four choice structured alternative item format.

7.25 Free responses.

Qualitative investigations into young people's sport and exercise participation motivation have been rarely attempted. It was decided here to include space in the questionnaire for young people to respond freely on this issue. No multivariate study can ever be all encompassing. Hence such space was thought not only to provide the young people with the opportunity to say what they think, but was also used to attempt to gain knowledge of any additional factors not highlighted in the theoretical or empirical literature and which may have been beyond the author's own experience or agenda.

The following prompt was provided with a full blank page for responses:

“What do you feel about sport and exercise? Please use this page to write (or draw) how you think about yourself, your family and friends, and **sport**”.

7.26 Summary:

The Young People and Sport Questionnaire (YPSQ).

Table x1 shows the final questionnaire used in this study.

<u>Measures</u>	<u>Main source</u>	<u>Number of items</u>	<u>Section Heading</u>
The Physical Self-Perception Profile, children’s version. (C-PSPP)	Whitehead (1995)	38 items	‘What I am like’
The Perceived Importance Profile (PIP)	Adapted from Fox (1990)	8 items	‘How important are things to you’
Peer/ friends socialisation scale	Based on Brustad (1991, 1992b)	10 items	‘Me and my friends’
Parental socialisation scale	Based on Brustad (1991, 1992b)	10 items	‘Me and my family’
‘Body constancy’ scale	Multiple sources	6 items	-
	Total	72 items	

Physical Activity Record	Physical Education Association Research Centre (PEA)

Qualitative section allowing free responses

7.3 The pilot study.

A youth worker and a school teacher were approached and asked to comment on how best to word the questionnaire, in terms of the way the participants in the study might prefer to refer to themselves. These professionals were personally known to the author and from the geographical areas of intended study. The original adult version of the PSPP was worded such that participants were asked

“Some **people** are very competitive.. BUT.. others are not quite so competitive.”

(Used as example sentence).

This was amended by Whitehead (1995) in the version for children (C-PSPP), to read

“Some **kids** would rather play outdoors in their spare time.. BUT.. other kids would rather watch T.V.” (Used as an example sentence).

Following a discussion on this point the wording was changed to read

“Some **young people**...”. This also complements what is currently held in the literature to be the one of the most appropriate ways to refer to adolescents. (See chapter 1.2).

The overall aim of piloting the study was to provide a pre-run of the questionnaire administration; in particular to ensure comprehensibility of the questionnaire materials for the proposed young sample. It was intended that the C-PSPP and PIP (modified for young people) be used in their standard versions to afford maximum replication and comparison with other studies. Therefore a full item analysis and psychometric assessment were not planned at this stage and hence only a small number of participants were recruited to complete the pilot.

7.31 Participants.

Five young people were approached and asked if they would take part in a study about the way young people think about themselves and sport. This group comprised of two boys aged 12 and 13 years and three girls, 2 of whom were ages 13 years and one aged 14 years. All 5 were known to each other and personally known to the author. It was explained to them that this was an informal 'try out' for a larger survey. The group were assured that their responses in the pilot study would be confidential. They were tested in the home of one of the participants.

7.32 Procedure.

An explanation was given as to how to complete the questionnaire using a sample sentence, enlarged onto a laminated A3 sheet, as recommended by Whitehead (1995). In particular it was emphasised that they should think carefully about the sort of person they were and should mark only one box on each line.

The participants were asked to work individually and assured that there were no wrong or right answers. Once they understood the task they completed the full version of the 'Young people and sport questionnaire'. Instructions for completing the self-report physical activity record were then issued and the participants then completed this. Finally they were asked to respond freely, either by writing or drawing, to the qualitative statement which formed the final page.

When all participants had finished they were asked to check back over their responses in the main questionnaire and ensure that all questions were answered. It was stressed to them again that they should have only have one answer ticked per line and if this was not the case they should think again about the person who they were really most like. The group were thanked for their participation and the main aims of the study were explained. They were then asked to discuss the term ‘young people’ with the author. They were also requested to comment on their experience of completing the questionnaire and to point out any words they had had difficulty in understanding.

The time taken to complete the questionnaire was recorded, so that schools in the main study could be approached with a realistic expectation for how long they would need to release their pupils for.

7.33 Assessment.

Overall the pilot group reported that they had enjoyed completing the questionnaire, although they commented that some questions appeared to be repeated and hence somewhat “boring” for them to answer. They were happy with the wording of the questionnaire being as ‘young people’. They remarked that although they do, in fact, call each other ‘kids’ they did not like adults to refer to them in that way.

The two male participants were not familiar with the word ‘vigorous’ which appeared in two items (Q2 and Q8). The youngest participant, a male aged 12 years, also

reported some difficulty with Q29 which asks whether the young person feels positively or negatively about themselves physically.

The word 'vigorous' appeared again on the physical activity record where participants were asked to rate the intensity they engage in each activity (explained on the questionnaire as being 'how hard'). This had been interpreted by the two males as relating to level of skill and not vigour/energy.

It was decided to leave these words in the final questionnaire, but to explain them to the pupils in the main study, if necessary. With regards to the physical activity record, ice skating was added to the list, as all five members of the pilot group participated regularly in this activity. 'Jazzercise' was removed from the list as this was an activity that these young people were not familiar with. 'Soccer' was changed to 'football' to reflect the term more commonly used by these pupils. 21 physical activities in total were included for the final version as well as space for the pupils to indicate any other physical activities that they participate in.

The pilot participants took between 35 minutes and 50 minutes to complete the quantitative section of the questionnaire. The final page which allowed the participants to write or draw freely was found to have an additional use. Those who had finished early had something to do whilst waiting for the others. It was hence decided to approach the schools requesting 40 minutes to 1 hour (depending on age) of the pupils' time for the study.

Chapter 8

The main study

8.1 Introduction

The survey was carried out between October 1992 and February 1993. Care was taken to ensure that all testing was conducted within these winter months so as not to introduce a possible confounding variable of seasonal differences in sport participation.

It was intended that a large number of pupils would take part in this cross-sectional study. Initially it was envisaged that in total 100 pupils, 50 male and 50 female, from each of the ages 11 to 18 years would constitute the population to be surveyed, giving a total of 800 young people. It was anticipated that such numbers would fairly represent an adolescent population and allow for a full statistical analysis of the data.

Biddle and Armstrong (1992) have recommended that investigations should be carried out during school holidays when children are more likely to engage in activities by choice. Such a study could provide a complete and comprehensive account of children's physical activity participation. They suggested that children may have activity curtailed or required during school time. However, this methodological suggestion was beyond the scope of the current study and the survey was planned for administration in schools, where it was anticipated that access would be easier to the large numbers needed for such a survey.

Head Teachers from fifteen local schools in the Hull area were sent a letter outlining the study together with a prototype version of the questionnaire. This was followed up by a series of phone calls to each of the schools. Tremendous difficulty was experienced in establishing contact with these schools and gaining access. This was not to do with the nature of the questionnaire *per se* but with the schools' reluctance to release pupils for the study, with the then new and pressing concern about the demands on the timetable from the National Curriculum. Access was not gained to any of these schools.

Two secondary schools and two sixth form colleges, where there were teachers personally known to the author, were approached and asked if they would be prepared to take part in the study. These institutions agreed to provide access and support the study. One of these schools was in South Yorkshire and the other in London. Both schools were large, urban, coeducational comprehensive schools within a broad demographic catchment area. Uniform was not worn at either of these schools and Physical Education had an equal standing in terms of timetable space and resources. The sixth form colleges were similar institutions, both in the Hull area.

The issue of parental consent was discussed with the schools. Both head teachers were agreeable for the study to go ahead without gaining parental consent, due to the apparent non-controversial nature of the questionnaire items. These teachers were willing to act 'in loco parentis'.² It was explained to them that full, informed consent

² This method of obtaining consent with young people under 16 years conforms with the British Psychological Society 'Ethical principles for conducting research with human participants' (section 3.3)

would be solicited from the pupils themselves, with the given opportunity to withdraw from the study. Each school was promised feedback on its results.

8.2 Method

8.21 Participants.

Classes of pupils from all school years were made available for the study from the school in South Yorkshire. The entire year 9 (pupils aged 13 to 14 years) was made available from the school in London. Two groups of students (aged 16 to 18 years) from each of the sixth form colleges were included. The total sample comprised of 604 young people of which 298 were boys and 306 were girls. A detailed description of the sample composition is given in Chapter 9.

8.22 Instruments.

The full version of the composite ‘Young People and Sport Questionnaire (YPSQ)’ described in Chapter 7 was used. See Appendix 3 (pg. 373). This was photocopied onto green and yellow paper for a distinctive appeal.

8.23 Procedure.

The questionnaire was administered by the author to pupils in their usual groups and rooms. Groups were seen in their year assembly, Personal and Social Development class or P.E. class. The class teachers were present throughout testing to help with potential discipline problems and slow readers. However they were requested to maintain a low profile and to only help if required.

The author introduced herself to each group and explained the nature of the study. They were told that the research was investigating the way young people think about themselves and sport, in a large scale national study. They were also informed that they would be asked to think about their family and friends too. Anonymity and confidentiality were assured and they were instructed not to put their name on the questionnaire. All groups were reassured that their teachers would not see any individual script and that feedback to the school would be from group averages. This point was felt to be particularly important to groups tested during their P.E. class. They were encouraged to be as honest and open as they could and reminded that there were no wrong or right answers. It was stressed to them that everyone thinks differently, it was these differences that were of interest and that they should work alone. As all the groups tested were 'captive', pupils were given the opportunity to withdraw from the study at this (or any) stage.³

³ In accordance with the British Psychological Society's 'Ethical principles for conducting research with human participants' (section 6.1).

The questionnaire was distributed and verbal instructions were given as to how to respond to the items, using the A3 laminated sample item. As with the pilot sample it was stressed that they had to read the whole sentence, decide which sort of person they were and whether the that was really true or sort of true for them. Again it was stressed most emphatically that they should only tick one box per line.⁴ These instructions also appeared on the front sheet to the questionnaire.

The participants were warned that they might find some of the words difficult to understand and they should ask for help if needed. They were alerted to the word 'vigorous' and this was explained with the synonym of 'energetic'. All groups of pupils were seated at individual desks or working areas and were reminded that they should complete the questionnaires on their own without collaborative effort. They were then allowed to proceed.

After it appeared that most pupils had reached the section of the questionnaire that introduced the Physical Activity Record the pupils were asked to stop and listen for more instructions. It was only introduced at this stage so as not to burden or confuse the pupils with too many instructions but also to help minimise the methodological problem of assessing self-perceptions and sport/exercise participation on the same occasion. Details were then given as to how to complete the record. It was explained that this part of the questionnaire was designed to assess the type and amount of physical activity that they had taken part in the previous 4 weeks. The pupils were

⁴ It was felt particularly important to emphasise this instruction with these adolescent samples, as the original testing of the PSPP instrument, with college students, found approximately 2-4% made the error of ticking a box on both side of the statements (Fox, 1990).

asked to record accurately what they had done and not what they would have like to have done. Care was taken to stress that people differ a lot in the type and amount of physical activity they so. These instructions also appear as a front sheet to the Physical Activity Record. Following the assessment of the pilot responses, it was explained to the pupils that should consider the intensity of their activities (written description of 'how hard') as referring to vigour/energy and not skill.

Finally the pupils were encouraged to respond freely, by writing or drawing, to the statement on the final sheet. When they had all finished they were asked to read back over their responses and check that all sections had been completed in the correct way. The entire procedure took from 45 minutes to 1 hour.

The groups were then thanked for their participation and the main aims of the study were explained.

8.3 Concluding remarks.

This study experienced a number of logistical problems in terms of gaining access to young people, leading to some compromises being made over sample size and composition. In spite of this the interest in the study and partnership between schools and pupils in the final sample groups was considerable. Most pupils reported that they had enjoyed taking part in the survey. The research process can itself impact on individuals, even if unintended. A number of the older pupils commented that the experience was ‘food for thought’ and they planned to try to become more physically active in the future.

All participating schools and colleges were sent a written summarised report of their group results and a summary of the results from the total sample (although no inter-school comparisons were made).

In the following chapters the overall results of the survey are given.

Chapter 9

Results

9.1 Introduction.

The main aim of this study was to provide a detailed analysis of sport and exercise participation patterns in a sample of British adolescents. This was achieved through measurements of their self-reported physical activity and associated social and self-perceptions thought to account for activity types and levels.

In this section descriptive statistics will be provided which display the nature of the sample in terms of age and gender proportions and a full account of their self-reported physical activity. This includes type of activity as well as the frequency, duration and intensity. Although from a health perspective the duration and intensity of physical activity is important in terms of accruing and maximising any health-related benefits of sport and exercise, for the purpose of establishing predictive models of participation the frequency data will be used in the subsequent analyses. Godin et al. (1991) have suggested that intervention to improve participation levels should be based on increasing people's frequency of participation regardless of the intensity or duration, in order to encourage individuals to initiate and adopt habits with regards to exercise.

A full psychometric evaluation of each of the items and item subscales will be provided. In a later stage comparisons with other studies will be made where

appropriate. For each of the main evaluations gender and age-related differences will be highlighted.

The main inferential statistics will also provide correlational analyses and include an attempt to predict physical activity levels in this sample using regression analysis techniques.

9.2 Participants.

9.21 Age, gender and school.

The total sample comprised of 604 young people of which 298 were boys and 306 were girls, within ages ranging from 11 to 18 years. From the total sample 29 participants (4.8%) were excluded from the quantitative analysis due to spoilt or incomplete questionnaires. Criteria for exclusion included a) response perseveration e.g. ticks all the way down one column of the questionnaire b) error made by ticking boxes either side of the statements c) more than 50% missing responses to items.

The remaining sample consisted of 575 young people aged 11 to 18 years (mean age 13.26, sd 1.48). Table 9.211 shows the number of boys and girls in each school year.

Table 9.211

Number of Boys and Girls in Each School Year

YEAR	BOYS	GIRLS	TOTAL	%
7	38	40	78	13.6
8	60	58	118	20.56
9	119	105	224	39.0
10	46	25	71	12.4
11	9	11	20	3.5
12 & 13	6	57	63	10.9
TOTAL	278	296	574*	

* This total excludes one participant from Year 8 with gender not given.

For the purpose of analysis the pupils were categorised by age rather than school year.

Due to the relatively small numbers of older pupils, these were grouped into one category of age 16-18 years as is shown in table 9.212. The largest percentage of pupils in the sample were aged 13 years, the remaining proportions of pupils were relatively evenly distributed throughout the age range.

Table 9.212

Age of Participants

AGE (Years)	BOYS	GIRLS	TOTAL	%
11	33	32	65	11.3
12	55	51	106	18.4
13	104	107	211	36.7
14	41	27	68	11.8
15	34	18	52	9.0
16-18	11	61	72	12.5
TOTAL	278	296	574	

9.22 Activity levels and type.

The results from the physical activity record were analysed. The 21 activities were grouped into sub-sections of ‘sports activities’, ‘stamina and fitness activities’, ‘strength and muscular activities’ and ‘miscellaneous activities’. For each of these participants indicated the frequency, duration and intensity of each (if any) of the activities on a scale of 1-6.

For 'frequency' scores ranged from 1 (once a week) to 6 (six or more times a week).

For 'intensity' scores ranged from 1 (light) to 6 (very vigorous).

For 'duration' scores ranged from 1 (less than 10 minutes) to 6 (more than 45 minutes).

If the activity had not been participated in a score of 0 was recorded.

Table 9.221 shows the numbers of boys and girls reporting participation in sports activities. Football was the most popular activity in this subsection in terms of the numbers participating, for both boys and girls. The least popular activities in this subsection, in terms of participation, was netball for boys and rugby for girls. The most oft cited single 'other' sports activities named by the pupils was 'net-wall' (n= 72, boys; n= 65, girls). This is a ball game played at one of the sample schools.

Rounders was also reported as having been played and named under 'other' sports activities (n= 26, boys; n= 45, girls) as well as 'skatch' (n= 30 boys; n= 34 girls).

Chi-square analyses were conducted which showed significantly larger proportions of boys than girls reporting participation in rugby, football and basketball and significantly larger proportions of girls than boys reporting participation in netball. There were no significant differences between boys and girls in the proportions reporting participating in volleyball, badminton, hockey and 'other' sporting activities. These activities hence attracted relatively equal proportions.

Table 9.221

Numbers of Boys and Girls Reporting Participation in Sports Activities

SPORTS ACTIVITY	BOYS		GIRLS		χ^2	df	p
	N	%	N	%			
RUGBY	53	19.06	22	7.43	17.07	1	<0.001
FOOTBALL	214	76.98	92	31.08	121.32	1	<0.001
BASKETBALL	118	42.44	76	25.6	18.01	1	<0.001
VOLLEYBALL	28	10.07	32	10.81	0.083	1	NS
BADMINTON	84	30.21	77	26.01	1.25	1	NS
HOCKEY	72	25.89	77	26.01	0.001	1	NS
NETBALL	12	4.51	28	9.45	5.84	1	<0.05
OTHER	83	29.8	73	24.66	1.95	1	NS

Table 9.222 shows the numbers of boys and girls reporting participation in stamina and fitness activities. Running was the most popular activity for boys in this subsection in terms of the numbers reporting participation and swimming was for the girls. The least popular activity in this subsection, in terms of participation, was aerobics for both boys and girls (excluding ‘other’). The most oft cited single ‘other’ activity named by the pupils in this subsection was ‘circuit training’ (n= 10, boys; and n= 17, girls).

Chi-square analyses were conducted which showed significantly larger proportions of boys than girls reporting participation in jogging, running and cycling and significantly larger proportions of girls than boys reporting participation in aerobics. There were no significant differences between boys and girls in the proportions reporting participating in swimming and ‘other’ stamina and fitness activities. These activities hence attracted relatively equal proportions.

Table 9.222

Numbers of Boys and Girls Reporting Participation in Stamina and Fitness Activities

STAMINA & FITNESS ACTIVITY	BOYS		GIRLS		χ^2	df	p
	N	%	N	%			
AEROBICS	14	5.03	69	23.31	38.70	1	<0.001
JOGGING	121	43.52	77	26.01	19.45	1	<0.001
RUNNING	150	53.95	103	34.79	21.34	1	<0.001
SWIMMING	123	44.24	119	40.20	0.96	1	NS
CYCLING	119	42.80	100	33.78	4.94	1	<0.05
OTHER	21	7.55	29	9.79	0.90	1	NS

Table 9.223 shows the numbers of boys and girls reporting participation in strength and muscular activities. Exercises only (sit-ups etc.) was the most popular activity for both boys and girls in this subsection in terms of the numbers reporting participation. The least popular activities in this subsection, in terms of participation, was

weight/power lifting for boys (excluding ‘other’) and body building for the girls.

‘Other’ activities named by the pupils in this subsection included wrestling and fighting (n= 8, boys) and callisthenics (n=6, girls).

Table 9.223

Numbers of Boys and Girls Reporting Participation in Strength & Muscular Activities

STRENGTH & MUSCULAR ACTIVITY	BOYS		GIRLS		χ^2	df	p
	N	%	N	%			
WEIGHT TRAINING	75	26.97	20	6.75	42.44	1	<0.001
EXERCISES ONLY (Sit-ups etc.)	114	41.00	86	29.05	9.02	1	<0.01
BODY BUILDING	28	10.07	8	2.70	13.24	1	<0.001
WEIGHT/POWERLIFTING	15	5.39	11	3.71	0.93	1	NS
OTHER	14	5.03	13	4.39	0.13	1	NS

Chi-square analyses were conducted which showed significantly larger proportions of boys than girls reporting participation in weight-training, exercises only and body building. There were no significant differences between boys and girls in the small proportions reporting participating in weight/ power lifting and ‘other’ strength and muscular activities, although the *type* of ‘other’ activity in this subsection appeared quite different.

Table 9.224 shows the numbers of boys and girls reporting participation in miscellaneous other activities. Ice-skating was the most popular activity for boys in this subsection in terms of the numbers reporting participation and dance was for the girls. The least popular activities in this subsection, in terms of participation, was yoga for both boys and girls. ‘Other’ activities named by the pupils in this subsection included ‘horse-riding’ (n= 8, boys; and n= 6, girls).

Table 9.224
Numbers of Boys and Girls Reporting Participation in Miscellaneous ‘Other’ Activities

‘OTHER’ ACTIVITIES	BOYS		GIRLS		χ^2	df	p
	N	%	N	%			
COMBAT SPORTS	46	16.54	16	5.40	18.47	1	<0.001
MARTIAL ARTS	32	11.51	15	5.06	7.91	1	<0.005
DANCE	17	6.11	98	33.10	65.19	1	<0.001
YOGA	4	1.43	14	4.73	5.11	1	<0.05
ICE SKATING	62	22.30	75	25.33	0.72	1	NS
ANY OTHER	37	13.30	32	10.81	0.84	1	NS

Chi-square analyses were conducted which showed significantly larger proportions of boys than girls reporting participation in combat sports and martial arts and significantly larger proportions of girls than boys reporting participation in dance and yoga. There were no significant differences between boys and girls in the proportions reporting participating in ice-skating and ‘other’ sporting activities. These activities hence attracted relatively equal proportions.

Table 9.225 shows the means and standard deviations of frequency, intensity and duration for those boys and girls reporting participation in sports activities. On average it appeared that most sports activities were reported as being played 1-2 times per week, with the exceptions of football and netball for boys where those that played reported a frequency of 3-4 times a week on average. The mean intensity of activity was on average between 3 and 4 (moderate to moderate/vigorous). Duration levels were towards the top end of the scale, on average between 30 and 40 minutes per session.

Further analysis was conducted on the frequency of participation data only. T-test comparisons for the frequency of participation in sports activities between boys and girls are shown in table 9.226. Boys reported significantly more frequent participation in football, basketball, netball and ‘other’ sporting activities. There were no significant differences between boys and girls in frequency of participation for those reporting playing rugby, volleyball, badminton and hockey.

Table 9.225

Means and Standard Deviations of Frequency, Intensity and Duration for Boys and Girls Participating in Sports Activities

SPORTS ACTIVITY	BOYS							GIRLS						
	N	FREQUENCY		INTENSITY		DURATION		N	FREQUENCY		INTENSITY		DURATION	
		M	SD	M	SD	M	SD		M	SD	M	SD	M	SD
RUGBY	53	1.85	1.18	3.85	1.77	4.74	1.44	22	1.86	1.04	3.23	1.60	4.64	1.56
FOOTBALL	214	3.85	1.97	3.99	1.65	5.20	1.19	92	1.98	1.39	3.16	1.58	4.37	1.52
BASKETBALL	118	1.92	1.44	3.62	1.61	4.39	1.49	76	1.49	0.87	3.50	1.47	4.49	1.35
VOLLEYBALL	28	1.93	1.56	3.32	1.66	4.18	1.70	32	1.47	0.84	3.19	1.47	3.75	1.27
BADMINTON	84	1.75	1.37	3.75	1.72	5.01	1.33	77	1.58	0.92	3.49	1.52	4.83	1.23
HOCKEY	72	1.39	0.97	3.62	1.80	4.90	1.54	77	1.40	0.98	3.57	1.32	4.92	1.41
NETBALL	12	3.17	2.21	3.83	2.25	4.33	1.83	28	1.75	1.00	3.25	1.58	4.46	1.35
OTHER	83	2.52	1.74	3.90	1.80	5.19	1.26	73	1.85	0.91	3.55	1.28	4.97	1.17

Table 9.226

T-Test Comparisons for Frequency of Participation in Sports Activities between Boys and Girls

SPORTS ACTIVITY	BOYS			GIRLS			t	df	p
	N	M	SD	N	M	SD			
RUGBY	53	1.85	1.18	22	1.86	1.04	0.05	73	NS
FOOTBALL	214	3.85	1.97	92	1.98	1.39	8.24	304	<0.001
BASKETBALL	118	1.92	1.44	76	1.49	0.87	2.38	192	<0.05
VOLLEYBALL	28	1.93	1.56	32	1.47	0.84	1.44	58	NS
BADMINTON	84	1.75	1.37	77	1.58	0.92	0.89	159	NS
HOCKEY	72	1.39	0.97	77	1.40	0.98	0.09	147	NS
NETBALL	12	3.17	2.21	28	1.75	1.00	2.81	38	<0.01
OTHER	83	2.52	1.74	73	1.85	0.91	2.95	154	<0.01

Table 9.227 shows the means and standard deviations of frequency, intensity and duration for those boys and girls reporting participation in stamina and fitness activities. On average it appeared that most stamina and fitness activities were reported as being undertaken 2-3 times per week, with the exception of swimming for girls, where those that swam reported doing this 1-2 times a week on average. ‘Other’ stamina and fitness activities (e.g circuit training) had the highest mean frequency of participation with both boys and girls reporting participating on average between 4-5 times per week. As with the sports activities, the mean intensity of activity was on average between 3 and 4 (moderate to moderate/vigorous). Reported duration levels ranged on average between 20 and 30 minutes per session for jogging and running for both sexes and cycling (for girls); and between 30 to 40 minutes for aerobics, swimming, ‘other’ and cycling (for boys).

Table 9.227

Means and Standard Deviations of Frequency, Intensity and Duration for Boys and Girls Participating in Stamina and Fitness Activities

STAMINA AND FITNESS ACTIVITY	BOYS							GIRLS						
	N	FREQUENCY		INTENSITY		DURATION		N	FREQUENCY		INTENSITY		DURATION	
		M	SD	M	SD	M	SD		M	SD	M	SD	M	SD
AEROBICS	14	2.64	2.10	3.79	1.81	4.93	1.59	69	2.04	1.53	4.20	1.52	4.57	1.59
JOGGING	121	3.03	1.86	3.50	1.55	3.45	1.60	77	2.44	1.58	3.18	1.65	3.42	1.56
RUNNING	150	3.51	1.85	4.05	1.66	3.61	1.66	103	2.50	1.64	3.51	1.61	3.16	1.58
SWIMMING	123	2.00	1.35	3.61	1.73	5.37	1.18	119	1.88	1.28	3.61	1.49	5.31	1.16
CYCLING	119	3.88	1.97	3.79	1.70	4.61	1.59	100	3.41	1.84	3.58	1.52	3.90	1.59
OTHER	21	4.14	1.88	4.52	1.57	4.76	1.67	29	4.66	1.74	3.41	1.55	4.52	1.53

Multiple t- tests were conducted to compare differences between boys and girls on the mean frequency of participation for each of the stamina and fitness activities for those reporting taking part in these activities (see table 9.228). Boys who had participated reported significantly more frequent participation in jogging and running than the girls who participated in these activities. There were no significant differences between boys and girls in frequency of participation for those reporting taking part in aerobics, swimming, cycling and 'other' stamina and fitness activities (e.g circuit training).

Table 9.228

T-Test Comparisons for Frequency of Participation in Stamina and Fitness Activities between Boys and Girls

STAMINA AND FITNESS ACTIVITY	BOYS			GIRLS			t	df	p
	N	M	SD	N	M	SD			
AEROBICS	14	2.64	2.10	69	2.04	1.53	1.25	81	NS
JOGGING	121	3.03	1.86	77	2.44	1.58	2.31	196	<0.05
RUNNING	150	3.51	1.85	103	2.50	1.64	4.42	251	<0.001
SWIMMING	123	2.00	1.35	119	1.88	1.28	0.70	240	NS
CYCLING	119	3.88	1.97	100	3.41	1.84	1.82	217	NS
OTHER	21	4.14	1.88	29	4.66	1.74	0.99	48	NS

Table 9.229 shows the means and standard deviations for the frequency, intensity and duration for boys and girls who reported participating in strength and muscular activities. For those boys who took part in these the frequency of reported participation was between 3-4 times per week for all of the activities listed in this section. For the girls the frequency of participation in weight-training, weight/ power-lifting and 'other' strength and muscular activities was on average reported at 1-2 times per week; body-building 2-3 times per week on average and exercises 3- 4 times per week on average.

The mean intensity of the strength and muscular activities was on average reported by the boys at 4-5 (moderate/ vigorous to vigorous) for each of these activities. For the girls the mean intensity was reported on average at 2-3 (light/moderate to moderate) for body- building; 3- 4 (moderate to moderate/vigorous) on average for weight-training, exercises and weight/ power lifting and 4-5 (moderate/ vigorous to vigorous) for 'other' strength and muscular activity.

In terms of duration of each session the boys who undertook strength and muscular activities reported 20 to 30 minutes on average for each session of exercises and weight/power lifting and 30 to 40 minutes on average for each session of weight-training, body building and 'other' strength and muscular activities. For the girls who undertook strength and muscular activities the duration of the sessions were reported at 10 to 20 minutes on average for body-building and weight/power lifting and 20 to 30 minutes on average for sessions of weight-training, exercises and 'other' strength and muscular activities.

Table 9.229

Means and Standard Deviations of Frequency, Intensity and Duration for Boys and Girls Participating in Strength and Muscular Activities

STRENGTH AND MUSCULAR ACTIVITY	BOYS							GIRLS						
	N	FREQUENCY		INTENSITY		DURATION		N	FREQUENCY		INTENSITY		DURATION	
		M	SD	M	SD	M	SD		M	SD	M	SD	M	SD
WEIGHT TRAINING	75	3.04	1.76	4.27	1.62	4.21	1.65	20	1.65	1.46	3.80	1.44	3.15	1.87
EXERCISES ONLY (Sit-ups etc.)	114	3.15	1.92	4.32	1.67	3.36	1.65	86	3.14	1.99	3.86	1.36	3.24	1.44
BODY BUILDING	28	3.21	1.91	4.57	1.50	4.32	1.76	8	2.63	2.20	2.75	1.98	2.50	1.07
WEIGHT/POWERLIFTING	15	3.47	1.85	5.13	1.41	3.87	1.46	11	1.91	1.64	3.73	1.68	2.64	1.91
OTHER	14	3.79	2.12	5.29	1.07	4.64	1.74	13	1.85	1.46	4.15	1.86	3.46	1.85

Multiple t- tests were conducted to compare differences between boys and girls on the mean frequency of participation for each of the strength and muscular activities for those reporting taking part in these activities (see table 9.2210). Boys who had participated reported significantly more frequent participation in weight-training, weight/ power lifting and 'other' strength and muscular activities than the girls who participated in these activities. There were no significant differences between boys and girls in frequency of participation for those reporting taking part in exercises and body-building.

Table 9.2210

T-Test Comparisons for Frequency of Participation in Strength and Muscular Activities between Boys and Girls

STRENGTH AND MUSCULAR ACTIVITY	BOYS			GIRLS			t	df	p
	N	M	SD	N	M	SD			
WEIGHT TRAINING	75	3.04	1.76	20	1.65	1.46	3.25	93	<0.01
EXERCISES ONLY (Sit-ups etc.)	114	3.15	1.92	86	3.14	1.99	0.03	198	NS
BODY BUILDING	28	3.21	1.91	8	2.63	2.20	0.74	34	NS
WEIGHT/POWERLIFTING	15	3.47	1.85	11	1.91	1.64	2.22	24	<0.05
OTHER	14	3.79	2.12	13	1.85	1.46	2.75	25	<0.05

Table 9.2211 shows the means and standard deviations for the frequency, intensity and duration for those boys and girls who reported taking part in the miscellaneous other activities. For the boys, out of those reporting taking part in these activities, combat sports, yoga and ‘other’ was reported on average at a frequency of 3-4 times per week; martial art and dance 2-3 times per week on average and ice-skating 1-2 times per week on average. For the girls, out of those reporting taking part in these activities, ‘other’ activities was reported on average at a frequency of 3-4 times per week; martial arts, dance and yoga 2- 3 times per week on average and combat sports and ice-skating 1-2 times per week on average.

In terms of the reported intensity of the various miscellaneous ‘other’ activities, the boys who took part in these reported moderate to moderate/vigorous levels for dance, yoga, ice-skating and ‘other’ and moderate/vigorous to vigorous levels for combat sport and martial arts. For the girls who took part in these activities moderate to moderate/vigorous levels were reported for combat sports, martial arts, yoga and ice-skating and moderate/vigorous to vigorous levels for dance and ‘other’ activities.

For the boys who reported taking part in these miscellaneous other activities, sessions of yoga were reported as lasting 20 to 30 minutes on average, combat sports and dance were reported as 30 to 40 minutes on average and martial arts, ice-skating and ‘other’ at 40 minutes or more on average. For the girls who reported taking part in these activities the duration of the sessions were reported as lasting 30 to 40 minutes for combat sports, martial arts, dance and yoga and 40 minutes or more on average for ice-skating and ‘other’ activities in this subsection.

Table 9.2211

Means and Standard Deviations of Frequency, Intensity and Duration for Boys and Girls Participating in Miscellaneous ‘Other’ Activities

‘OTHER’ ACTIVITY	BOYS							GIRLS						
	N	FREQUENCY		INTENSITY		DURATION		N	FREQUENCY		INTENSITY		DURATION	
		M	SD	M	SD	M	SD		M	SD	M	SD	M	SD
COMBAT SPORTS	46	3.02	1.95	4.33	1.65	4.65	1.73	16	1.38	0.72	3.69	1.62	4.25	1.77
MARTIAL ARTS	32	2.34	1.75	4.94	1.39	5.19	1.38	15	2.07	1.22	3.73	1.83	4.73	1.79
DANCE	17	2.47	1.84	3.71	1.93	4.41	2.09	98	2.85	1.95	4.06	1.55	4.79	1.35
YOGA	4	3.50	2.89	3.75	2.63	3.50	2.89	14	2.14	1.46	3.00	1.71	4.93	1.59
ICE SKATING	62	1.52	0.90	3.13	1.98	5.19	1.56	75	1.65	1.29	3.19	1.69	5.51	1.17
OTHER	37	3.22	2.17	3.16	1.82	5.27	1.37	32	3.28	2.14	4.03	1.49	5.16	1.42

T-test comparisons for the frequency participation for each of the miscellaneous other activities for those reporting engaging in these activities showed no significant differences for boys and girls, with the exception of combat sports where those boys who reported taking part reported doing so more frequently than girls. Yoga was not included in this analysis due to the small numbers of boys reporting participation in this activity. (See table 9.2212).

In summary, out of the 21 listed physical activities significantly larger proportions of boys than girls reported taking part in 11 of these activities. Significantly larger proportions of girls than boys reported taking part in netball, aerobics, dance and yoga. For the remaining 6 activities neither boys or girls were significantly more likely to report that they had participated. Considerations were made of the level of participation for those reporting taking part in the activities. Boys were significantly more likely to report taking part in 8 of these activities more often per week than the girls who reported taking part in them. There was no significant differences found in the mean rates of participation between boys and girls with the other 12 activities (yoga was excluded from this analysis). Hence for none of the activities did the girls who took part report a significantly greater mean frequency of participation than the boys.

Table 9.2212

T-Test Comparisons for Frequency of Participation in Miscellaneous ‘Other’ Activities between Boys and Girls

OTHER ACTIVITY	BOYS			GIRLS			t	df	p
	N	M	SD	N	M	SD			
COMBAT SPORTS	46	3.02	1.95	16	1.38	0.72	3.29	60	<0.01
MARTIAL ARTS	32	2.34	1.75	15	2.07	1.22	0.55	45	NS
DANCE	17	2.47	1.84	98	2.85	1.95	0.74	113	NS
YOGA	-	-	-	-	-	-	-	-	-
ICE SKATING	62	1.52	0.09	75	1.65	1.29	0.71	135	NS
OTHER	37	3.22	2.13	32	3.28	2.14	0.12	67	NS

Popularity of activities within each subsection has been shown thus far in terms of gender comparisons. Table 9.2213 shows the most popular activity for the boys and girls at each age band. Popularity here is determined as the highest relative percentage of pupils reporting taking part in the activity. Using this criteria of popularity, football was the most popular activity for boys in all of the age groups, except the oldest boys. This small section of the sample reported highest participation in weight-training and exercises. For the girls the most popular activities were generally from the stamina and fitness subsection, e.g. running, swimming, cycling, although ice-skating was the most popular for the 11 year old girls (listed in the miscellaneous other section). At no age was a sports activity the most popular for girls, with the minor exception of basketball tying in popularity with running and swimming for the 12 year olds. In addition, few of the most popular physical activities for girls (except basketball) were offered as part of the school P.E. curricula.

Table 9.2213

Most Popular Physical Activity

AGE (Years)	BOYS						
	N	ACTIVITY		%	N	ACTIVITY	%
11	33	FOOTBALL	(n = 29)	87.87	32	ICE SKATING	(n = 22) 68.75
12	55	FOOTBALL	(n = 45)	81.81	51	BASKETBALL / RUNNING / SWIMMING	(n = 24) 47.05
13	104	FOOTBALL	(n = 80)	76.92	107	SWIMMING	(n = 53) 49.53
14	41	FOOTBALL	(n = 35)	85.36	27	RUNNING	(n = 17) 62.90
15	34	FOOTBALL	(n = 21)	61.76	18	RUNNING	(n = 9) 50.00
16-18	11	WEIGHT TRAINING / EXERCISES	(n = 6)	54.54	61	CYCLING	(n = 25) 40.98

In total the majority of pupils reported at least some activity per week with at least moderate levels of intensity and duration. Only a minority of 22 out of the total sample of 575 pupils (3.82%) reported no physical activity at all. This distribution of these pupils are shown in table 9.2214.

Table 9.2214

Distribution of Pupils Reporting no Physical Activity Participation

AGE (YEARS)	BOYS	GIRLS	TOTAL
11	2	2	4
12	-	1	1
13	2	3	5
14	1	-	1
15	-	-	-
16-18	1	10	11
TOTAL	6	16	22

For purposes of further quantitative analysis and inferential statistics a composite variable was established of the total frequency of participation in the 7 sports activities and the 5 stamina and fitness activities, plus the two 'other' activities from these subsections. This gave a possible minimum score of zero (i.e. indicating no participation in any of those activities) and a statistically possible maximum score of 84.

These scores showed a 'floor effect' with the mean scores all towards the bottom end of the range, with relatively high standard deviations. Although it could be statistically possible to obtain a high score on this variable, in realistic terms the scores were expected to be in the lower end of the range. For example a score of the maximum 84 would indicate participation in all the 14 activities at a rate of 6 (or more) times a week, and would most likely to be obtained by over-reporting than actual participation. The highest participation rate actually reported by a pupil was a 13 year old boy, with a total score of 50. A nominally reasonable possible maximum participation rate was set at 25. In total 29 pupils (approximately 5% of the total sample) reported a participation rate greater than this. The mean participation rate was calculated for each age group of boys and girls, excluding the 29 pupils with exceptionally high reported scores. Their original score was then deleted and replaced with the age/gender subgroup mean. This resulted in a more realistic distribution of scores, approximating a normal distribution, although with slight kurtosis. The means and standard deviation for the amended composite participation rates are shown in table 9.2215 for boys and girls across the ages, together with the minimum and amended maximum scores.

Table 9.2215

Means and Standard Deviations for Total Frequency of Participation (composite scores of sports and stamina/fitness activities)

AGE (YEARS)	BOYS				GIRLS				TOTAL MEAN FOR EACH AGE GROUP	
	N	M	SD	RANGE	N	M	SD	RANGE	M	SD
11	33	9.67	5.98	0-24	32	7.03	5.77	0-20	8.36	5.98
12	55	12.21	5.70	3-25	51	7.19	4.69	0-20	9.74	5.79
13	104	11.31	6.12	0-24	107	6.84	4.83	0-22	9.04	5.93
14	41	10.09	6.6	0-24	27	7.81	5.67	2-25	9.19	6.35
15	34	7.70	5.4	0-22	18	5.11	2.67	1-11	6.80	4.85
16-18	11	5.45	5.97	0-18	61	4.43	3.57	0-12	4.59	3.99
TOTAL MEAN FOR GENDER		10.44	6.22			6.41	4.77			

These scores provide a useful measure for gender and age comparisons although the rich, detail of participation patterns becomes obscured. For example, a pupil's score of 6 could be comprised of 6 different activities played once a week or one activity played 6 times a week, or 3 activities played twice a week and so on.

The mean participation score for boys was consistently higher for each age group than girls. Mean scores were high for the 12 year old pupils but generally appeared to lower with age. A 2-way analysis of variance was performed with these participation scores which confirmed significant main effects for gender, $F(1, 562)= 30.179$, $p< 0.001$ and age, $F(5, 562)= 6.313$, $p< 0.001$. A similar pattern of participation rate was shown for both sexes with no significant interaction.

Further analysis of variance was performed for boys and girls separately to include post-hoc comparisons between the age groups. Tukey's Honestly Significant Difference (HSD) test was selected as the most appropriate multiple comparison procedure based on Howell (1992) who recommended this for pairwise comparisons with 6 or more groups. The Tukey HSD following one-way ANOVA for boys showed significant differences between the relatively low mean scores for the two oldest subgroups of boys (aged 15 and 16 to 18 years) and the boys aged 12 and 13 years (with the highest mean participation rate scores). The Tukey HSD following one-way ANOVA for girls showed significant differences in the mean participation rate score between the relatively low mean scores of the oldest girls (aged 16 to 18 years) and the groups of girls aged 12, 13 and 14 years (with the highest mean participation rate scores).

This composite variable of mean participation rate scores will be used in further correlational analyses in this study. This therefore omits the self-reported intensity and duration participation scores which are of interest. However, for boys and girls in both the younger and older age group categories frequency, intensity and duration of participation in the various physical activities were very strongly correlated. For the sample as a whole these correlations ranged from .79 to .86 ($p < 0.001$).

The next stage of results will provide a detailed psychometric analysis of the self-perception items and subscales from the Young People and Sport Questionnaire.

9.3 Psychometric evaluation of the C-PSPP.

9.31 Descriptive statistics.

Descriptive statistics are shown in table 9.311 for boys and table 9.312 for girls. The means and standard deviations are shown for each of the C-PSPP subdomains and the general self-esteem and physical self-worth subscales. These mean scores are shown for each of the age groups in the sample. The minimum possible score on each of these scales was 6 and a maximum possible score was 24, giving a hypothetical mid point of 15.

Most of the mean scores for the boys were distributed on or slightly above the mathematical mean, with the standard deviations ranging from 2.88 to 4.36, showing a satisfactory dispersal of scores. For the girls, the mean scores tended to be distributed around or slightly lower than the mathematical means, again with the standard deviations ranging from 2.98 to 4.72, showing satisfactory dispersal of scores.

Table 9.311

Means and Standard Deviations for Global Self-Esteem, Physical Self-Worth and C-PSPP Subscales (Boys)

AGE (YEARS)	GLOBAL SELF-ESTEEM		PHYSICAL SELF-WORTH		SPORT		CONDITION		BODY		STRENGTH	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 33)	18.94	4.18	18.31	3.94	17.97	3.65	18.73	4.05	17.22	4.36	18.39	2.88
12 (n = 55)	18.44	3.36	18.12	3.04	18.15	3.49	17.50	3.69	16.06	3.48	17.66	3.67
13 (n = 104)	19.20	3.89	18.22	4.04	18.52	4.05	18.14	3.76	16.39	3.96	16.59	4.37
14 (n= 41)	17.54	3.29	17.00	4.27	18.05	3.96	16.46	3.58	15.13	3.88	15.98	3.61
15 (n= 34)	18.85	2.88	18.41	3.20	18.94	3.27	18.21	3.54	15.52	3.47	16.85	3.39
16-18 (n = 11)	17.27	2.65	15.82	3.27	17.27	2.69	17.09	3.02	15.09	4.99	17.27	4.08

Table 9.312

Means and Standard Deviations for Global Self-Esteem, Physical Self-Worth and C-PSPP Subscales (Girls)

AGE (YEARS)	GLOBAL SELF-ESTEEM		PHYSICAL SELF-WORTH		SPORT		CONDITION		BODY		STRENGTH	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 32)	15.47	4.10	14.77	3.45	14.07	4.15	14.47	2.98	14.17	2.98	13.87	3.76
12 (n = 51)	16.32	4.17	15.88	3.55	14.71	3.60	15.00	3.94	14.80	3.62	14.35	3.30
13 (n = 107)	16.49	4.09	14.79	3.81	14.70	3.64	15.36	3.22	13.25	3.95	14.20	3.14
14 (n = 27)	16.81	3.26	16.15	3.84	15.04	3.49	16.38	3.50	14.69	3.17	14.74	3.02
15 (n = 18)	17.50	4.00	14.56	3.54	14.61	2.30	15.28	3.30	12.22	3.62	13.44	3.43
16-18 (n = 61)	16.02	4.72	13.84	4.20	13.28	4.54	14.54	4.30	13.46	4.46	14.07	3.75

2-way analysis of variance were conducted to examine age and gender differences in general self-esteem, physical self-worth and each of the four PSPP subdomains.

Highly significant main effects were found throughout for gender (the mean scores for boys higher than girls in all analyses) but no significant main effects were found for age. There were no significant two-way interactions. These results are summarised in table 9.313.

Table 9.313

Summary of 2-way ANOVAs for Age and Gender Effects for Global Self-Esteem, Physical Self-Worth and C-PSPP Subscales

	AGE			GENDER		
	df	F	P	df	F	P
GLOBAL SELF-ESTEEM	5,542	1.13	N/S	1,542	23.45	<0.001
PHYSICAL SELF-WORTH	5,549	1.80	N/S	1,549	46.47	<0.001
SPORT	5,545	1.02	N/S	1,545	93.51	<0.001
CONDITION	5,553	0.58	N/S	1,553	43.94	<0.001
BODY	5,538	1.75	N/S	1,538	28.63	<0.001
STRENGTH	5,550	0.87	N/S	1,550	66.50	<0.001

.Stepwise discriminant analysis was used to explore further these gender differences in global self-esteem, physical self-worth and the four PSPP subdomains were with a. This showed that these subscales could significantly discriminate between the boys and girls in this sample (Wilks' lambda = .77, $\chi^2 = 129.88$, $p < 0.0001$). The best predictors for distinguishing between boys and girls were SPORT (sport and athletic competence subscale) and STRENGTH (perceived physical strength subscale). Overall, 71.53% of cases were correctly classified.

A stepwise discriminant analysis with these subscales was also conducted to explore age effects. The result indicated that the five age groups in this sample could be significantly discriminated (Wilks' lambda = .94, $\chi^2 = 30.88$, $p < 0.0001$). SPORT (sport and athletic competence subscale) was the best predictor of age. Overall, 37.10% of cases could be correctly classified.

9.32 Factor structure and reliability analyses.

Items from the four C-PSPP subdomains were subjected to an exploratory factor analysis, using oblique rotation with $\delta = 0$. Taking into account the significant gender differences, factor analyses were initially conducted separately for boys and girls (but not for the different ages). Table 9.321 shows the factor loadings for C-PSPP items for boys. 5 factors were derived for boys that had eigenvalues greater than 1. Altogether 56.2% of the variance was explained by these factors, although the first of these account for the majority of the variance (31.9%) and the fifth factor less than 5%. The pattern matrix generally showed a clear factor structure with most items loading on their intended factor, with the exception of two items from the sport subscale which split and loaded onto another factor with one of the strength items. This strength item and one of the sport items were the only items to cross load on other factors greater than 0.4.

Table 9.322 shows the factor loading for C-PSPP for girls. Likewise 5 factors were derived for girls with eigenvalues greater than 1. These accounted for 62% of the variance, with the first factor accounting for the majority of the variance (33.6%) and the fifth factor less than 5%. The pattern matrix showed clear evidence for the four hypothesised factors. There were no cross loadings of items above 0.4, although two of the sport items and one of the condition items combined to form the fifth factor.

Table 9.321

Factor Loadings for C-PSPP Items for Boys (n = 278)

ITEMS		FACTORS & FACTOR LOADINGS				
		1	2	3	4	5
SPORT	1			-.54		
	2	.64				
	3	.43		-.46		
	4	.67				
	5					
	6	.70				
CONDITION	1					.65
	2					.58
	3					.58
	4					.63
	5					.72
	6					
BODY	1				-.55	
	2				-.42	
	3				-.75	
	4				-.44	
	5				-.76	
	6				-.68	
STRENGTH	1		-.69	.46		
	2		-.81			
	3		-.49			
	4		-.67			
	5		-.42			
	6		-.57			
Eigenvalue		7.65	1.90	1.43	1.32	1.15
% Variance		31.9	7.9	6.0	5.5	4.8
Cumulative % Variance		31.9	39.8	45.8	51.3	56.2

(only loadings >0.4 shown)

Table 9.322

Factor Loadings for C-PSPP Items for Girls (n = 296)

ITEMS		FACTORS & FACTOR LOADINGS				
		1	2	3	4	5
SPORT	1	.68				
	2	.74				
	3					-.47
	4					-.65
	5	.50				
	6	.56				
CONDITION	1				.79	
	2				.61	
	3					-.78
	4				.79	
	5				.79	
	6					
BODY	1		.78			
	2		.63			
	3		.77			
	4		.60			
	5		.75			
	6		.87			
STRENGTH	1			.76		
	2			.83		
	3			.42		
	4			.73		
	5			.63		
	6			.80		
Eigenvalue		8.06	2.61	1.88	1.25	1.04
% Variance		33.6	10.9	7.9	5.2	4.4
Cumulative % Variance		33.6	44.5	52.4	57.6	62.0

(only loadings >0.4 shown)

Further exploratory factor analyses were conducted with oblique rotation ($\delta = 0$) forcing a four factor solution. These factor loadings for C-PSPP items for boys is shown in table 9.323. The amount of variance explained when four factors were forced reduced to 51.3%. There was a clear factor structure for two of the hypothesised factors (body and strength) and no cross loadings. However it appeared that items from sport split and combined with condition items, suggesting for boys that these were not clearly differentiated.

Table 9.324 shows the factor loading for C-PSPP items for girls when four factors were forced. The amount of variance explained when four factors were forced reduced to 57.6%. Overall a clear factor structure was produced with good evidence for the four hypothesised factors. There were no cross loadings, although two of the condition items did not load on the intended factor and split to combine with the sport factor items.

Table 9.323

Factor Loadings for C-PSPP Items for Boys (n = 278)
when Four Factors were Forced

ITEMS		FACTORS & FACTOR LOADINGS			
		1	2	3	4
SPORT	1			-.73	
	2	.57			
	3			-.53	
	4	.55			
	5			-.55	
	6	.51			
CONDITION	1	.60			
	2				
	3	.53			
	4			-.62	
	5	.48			
	6				-.47
BODY	1				-.67
	2				-.42
	3				-.77
	4				-.44
	5				-.76
	6				-.65
STRENGTH	1		-.68		
	2		-.75		
	3		-.55		
	4		-.60		
	5		-.42		
	6		-.54		
Eigenvalue		7.65	1.90	1.43	1.32
% Variance		31.9	7.9	6.0	5.5
Cumulative % Variance		31.9	39.8	45.8	51.3

(only loadings >0.4 shown)

Table 9.324

Factor Loadings for C-PSPP Items for Girls (n = 296)
when Four Factors were Forced

ITEMS		FACTORS & FACTOR LOADINGS			
		1	2	3	4
SPORT	1	.79			
	2	.67			
	3	.61			
	4	.64			
	5	.61			
	6	.62			
CONDITION	1	.47			
	2				.76
	3				.57
	4	.46			
	5				.78
	6				.79
BODY	1		.76		
	2		.70		
	3		.80		
	4		.56		
	5		.75		
	6		.86		
STRENGTH	1			.79	
	2			.83	
	3			.47	
	4			.70	
	5			.63	
	6			.76	
Eigenvalue		8.06	2.61	1.88	1.25
% Variance		33.6	10.9	7.9	5.2
Cumulative % Variance		33.6	44.5	52.4	57.6

(only loadings >0.4 shown)

In sum, these factors were clearly interpretable offering encouraging support for the C-PSPP subdomains for both boys and girls. The only questionable aspect of the factor structure of the C-PSPP is the overlap between sport and condition, which was evident for both boys and girls (although relatively more pronounced for the boys).

A further exploratory factor analysis was computed using varimax rotation for boys and girls together. The main rationale for this was to replicate the analysis provided by Whitehead (1995). From the oblique rotations the factor correlation matrices indicated moderate correlations between .18 and .35 for boys and .23 and .43 for girls. From the criteria suggested by West (1991) oblique rotations are probably warranted as these correlations do not suggest the factors to be orthogonal. However these correlations are moderate enough for varimax rotation to be considered adequate for the purpose of comparisons. Table 9.325 shows the factor loadings for C-PSPP items for boys and girls when four factors were forced with a varimax rotation. Altogether 56.4% of the variance was explained, with the largest proportion of the variance explained by the first factor (body) with 37.2% and the least by the fourth factor (condition) with less than 5%. This factor rotation showed very clear support for the four hypothesised factors with generally high factor loadings. The weakest factor was comprised of the condition items where one item did not load greater than 0.4 on any factor, although by taking the less stringent cut off point for loadings at 0.3 this item successfully loaded on the intended factor. Also another condition item loaded greater than 0.3 (but not 0.4) on the intended factor but split and loaded more highly with the sport items. In sum, using this analysis strong support was gained for the hypothesised structure of the C-PSPP subdomains with this sample of adolescents.

Table 9.325

Factor Loadings for C-PSPP Items for Boys & Girls when Four Factors were Forced (Varimax Rotation) (N = 574)

ITEMS		FACTORS & FACTOR LOADINGS			
		1	2	3	4
SPORT	1		.75		
	2		.55		
	3		.67		
	4		.64		
	5		.62		
	6		.58		
CONDITION	1				(.38)
	2				.65
	3				.64
	4		.51		(.39)
	5				.75
	6				.65
BODY	1	.68			
	2	.63			
	3	.77			
	4	.53			
	5	.71			
	6	.78			
STRENGTH	1			.74	
	2			.80	
	3			.54	
	4			.66	
	5			.59	
	6			.69	
Eigenvalue		8.93	1.80	1.69	1.09
% Variance		37.2	7.5	7.1	4.6
Cumulative % Variance		37.2	44.7	51.8	56.4

(only loadings >0.4 shown)

Alpha reliability coefficients were calculated for the four C-PSPP subscales as well as the global self-esteem and physical self-worth scales. These were all satisfactorily high with Cronbach's alpha for the four subscales of sport (.82), physical condition (.81), body attractiveness (.83), strength (.83) and also for global self-esteem (.81) and physical self-worth (.84). In each case all six items contributed to the reliability of the subscales.

9.33 The relationships between global self-esteem, physical self-worth and the C-PSPP subdomains.

Subscale intercorrelations were calculated for boys and girls separately, with pupils classified into two age groups. The younger pupils were grouped from ages 11 to 13 years (mean 12.77 years, sd .76 for boys, and mean 12.39 years, sd .76 for girls) and the older pupils were grouped from ages 14 to 18 years (mean 14.65 years, sd .69 for boys, and mean 15.32 years, sd .85 for girls). These subscale intercorrelations are shown in table 9.331 for boys and table 9.332 for girls. The correlations shown in these tables reveal relatively strong association with physical self-worth and the four C-PSPP subdomains. In particular, there is a very highly significant correlation between physical self-worth and body attractiveness for the older girls ($r = .74$, $p < 0.001$).

There are weaker associations between global self-esteem and the four C-PSPP subdomains. For the older girls the correlation between global self-esteem and the physical strength subdomain was very weak and not significant ($r = .11$, $p = n/s$).

Subscale intercorrelations for the four C-PSPP subdomains tended to range from .40 to .72 for the boys and .32 and .66 for the girls.

An exception to this was the correlation between body attractiveness and physical strength in the older girls which was only weakly and not significantly associated ($r = .14$, $p = n/s$). This provides a marked contrast with the older boys for whom these variables showed the strongest relationship amongst C-PSPP subdomains ($r = .72$, $p < 0.001$). Overall, the relationships between all these variables tended to be stronger for boys than girls and also amongst those in the younger age groups.

Table 9.331

Correlations between C-PSPP Subdomains, Physical Self-Worth and Global Self-Esteem in Boys

	2	3	4	5	6
1. GLOBAL SELF-ESTEEM	0.70 0.62	0.57 0.56	0.52 0.34	0.53 0.43	0.42 0.39
2. PHYSICAL SELF-WORTH		0.70 0.70	0.68 0.53	0.70 0.63	0.49 0.52
3. SPORT			0.66 0.54	0.58 0.44	0.47 0.46
4. PHYSICAL CONDITION				0.62 0.40	0.45 0.40
5. BODY ATTRACTIVENESS					0.52 0.72
6. PHYSICAL STRENGTH					
all $p < 0.001$ first line boys aged 11-13 years ($n = 192$) second line boys aged 14-18 years ($n = 86$)					

Table 9.332

Correlations between C-PSPP Subdomains, Physical Self-Worth and Global Self-Esteem in Girls

	2	3	4	5	6
1. GLOBAL SELF-ESTEEM	0.63 0.56	0.49 0.32	0.39 0.32	0.56 0.50	0.35 0.11 (n/s)
2. PHYSICAL SELF-WORTH		0.69 0.63	0.61 0.66	0.64 0.74	0.55 0.39
3. SPORT			0.66 0.65	0.45 0.32	0.55 0.49
4. PHYSICAL CONDITION				0.49 0.47	0.45 0.48
5. BODY ATTRACTIVENESS					0.38 0.14 (n/s)
6. PHYSICAL STRENGTH					
all p≤0.001 first line girls aged 11-13 years (n = 190) second line girls aged 14-18 years (n = 106)					

Fox (1990) suggested that these variables may be hierarchically organised with the four C-PSPP subdomains underpinning the domain of physical self- worth, which in turn is a subdomain of global self-esteem. Tables 9.331 and 9.332 show that the respective relationships between the four subdomains was higher for physical self- worth than for global self-esteem and the relationship between global self-esteem and physical self- worth was higher than the relationship between global self-esteem and the four

subdomains. This was explored further by establishing correlation coefficients between the four C-PSPP subdomains and global self-esteem, partialling out the effect of physical self-worth. The partial correlational analysis is shown in table 9.333 for boys and girls, in two age subgroups.

Table 9.333

Partial Correlations between Global Self-Esteem and C-PSPP Subdomains, Controlling for Physical Self-Worth

	GLOBAL SELF-ESTEEM			
	MALES		FEMALES	
	11-13 Years (n = 192)	14-18 Years (n = 86)	11-13 Years (n= 190)	14-18 Years (n = 106)
SPORT	0.15*	0.23*	0.05	-0.3
PHYSICAL CONDITION	0.07	-0.05	-0.003	-0.06
BODY ATTRACTIVENESS	0.12	0.11	0.23*	0.14
PHYSICAL STRENGTH	0.14	0.07	-0.01	-0.13

*p<0.05

The partial correlations show that when the effect of physical self-worth was partialled out the relationship between global self-esteem and the four subdomains generally diminished to correlations near zero, thus offering support for the hypothesised hierarchical structure of these domains. The only exceptions to this was the partial correlations between global self-esteem and the sport subdomain in boys (partial r =

.15, $p < 0.05$, boys 11-13 years; partial $r = .23$, $p < 0.05$, boys 14-18 years) and the partial correlation between global self-esteem and the body attractiveness subdomain in the younger girls (partial $r = .23$, $p < 0.05$).

Fox (1990) recommended that one of the possible checks for content validity when using the PSPP (and therefore also the amended C-PSPP) was to calculate the percentage of physical self-worth explained by the four subdomains through multiple regression. He suggested that an adequate assessment of the self-perception content in the physical domain could be ascertained if this figure exceeds 60%. Hence stepwise multiple regression analyses were conducted using the four C-PSPP subdomains as independent variables to explain the variance in physical self-worth, with separate analyses conducted for boys and girls separately split into 'younger' (ages 11-13 years) and 'older' (ages 14-18 years).

For the younger boys the sport and athletic competence subdomain alone accounted for 51.2% (adjusted) of the variance of physical self-worth, with the body attractiveness adding a further 12.1% (adjusted) and physical condition adding a further 2.1% (adjusted). Physical strength did not significantly independently predict physical self-worth in this subgroup. Altogether 65.5% of the variance in physical self-worth was explained by these subdomains in this subgroup.

For the older boys the sport and athletic competence subdomain alone accounted for 49.3% (adjusted) of the variance of physical self-worth, with body attractiveness adding a further 12.2% (adjusted). The physical strength and physical condition

subdomains did not significantly independently predict physical self-worth in this subgroup. In this subgroup, altogether 61.5% of the variance in physical self-worth was explained by these subdomains.

For the younger girls the sport and athletic competence subdomain alone accounted for 48.5% (adjusted) of the variance of physical self-worth, with body attractiveness adding a further 15.3% (adjusted) and physical strength a further 1.3% (adjusted). The physical condition subdomain did not significantly independently predict physical self-worth in this subgroup. In this subgroup, altogether 65.2% of the variance in physical self-worth was explained by these subdomains.

For the older girls the attractive body subscale accounted alone for 54% of the variance of physical self-worth, with sport and athletic competence adding a further 16.2% (adjusted) and physical condition a further 1.4% of the variance. The physical strength subdomain did not significantly independently predict physical self-worth in this subgroup. In this subgroup, altogether 72.2% of the variance in physical self-worth was explained by these subdomains.

In sum, these regression analyses showed adequate content validity of the C-PSPP with this sample of British young people. The four subdomains were able to explain between 61.5% and 72.2% of the variance in physical self-worth and hence all exceeded the recommended percentage of 60% by Fox (1990). However for none of these predictions did all four of the subdomains significantly independently predict physical self-worth. For this sample of adolescents it suggests that sport and athletic

competence and body attractiveness are relatively major subcomponents of physical self-worth and physical condition and physical strength are relatively minor or interrelated components.

The next stage of the results will firstly provide a detailed analysis of the PIP followed by an evaluation of the relationships between PIP, the C-PSPP subdomains, global self-esteem and physical self-worth.

9.4 Psychometric evaluation of the PIP.

Tables 9.41 and 9.42 show the means and standard deviations for the four perceived importance items and composite subscales in both boys and girls across the ages. Fox (1990) suggested that a further check on content validity could be ascertained if mean PIP scores averaged at least the mathematical midpoint or above. (The mathematical midpoint for each item is 2.5 and 5 for each of the subdomains.) The results with this sample show adequate content validity with most scores distributed around the mid-range for each of the items and subdomains. In most cases the scores are on or above the mathematical midpoint, with the notable exception of the importance of physical strength subdomain in girls aged 13, 14 and 16-18 years; the importance of sport and athletic competence and the physical condition subdomains in the girls aged 16-18 years where subscale means are lower than the mathematical midpoint.

Table 9.41

Means and Standard Deviations for Perceived Importance (PIP) Items and Subscales (Boys)

AGE (Years)	IMPORTANCE OF SPORT / ATHLETIC COMPETENCE						IMPORTANCE OF PHYSICAL CONDITION						IMPORTANCE OF BODY ATTRACTIVENESS						IMPORTANCE OF PHYSICAL STRENGTH					
	1		2		TOTAL		1		2		TOTAL		1		2		TOTAL		1		2		TOTAL	
	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd
11 (n = 33)	3.38	0.98	3.0	1.21	6.37	1.5	2.91	1.07	3.18	0.95	6.09	1.38	3.22	0.97	3.0	1.0	6.22	1.56	2.75	1.14	3.16	0.90	5.87	1.74
12 (n = 55)	3.44	0.60	2.84	1.0	6.27	1.25	2.78	0.94	3.04	0.82	5.82	1.31	2.82	0.92	2.61	0.98	5.41	1.50	2.96	1.02	3.02	0.85	5.98	1.47
13 (n=104)	3.05	0.95	2.98	0.91	6.03	1.59	2.90	0.95	2.95	0.94	5.86	1.43	2.71	0.89	2.69	0.88	5.39	1.43	2.68	0.94	2.82	0.88	5.51	1.66
14 (n = 41)	3.17	0.83	2.80	1.02	5.95	1.50	2.98	0.88	2.80	0.81	5.78	1.33	2.90	0.80	2.73	0.74	5.63	1.18	2.83	0.92	2.51	0.95	5.34	1.71
15 (n = 34)	3.24	0.96	3.03	0.90	6.26	1.69	2.91	0.93	2.97	0.94	5.88	1.17	2.85	0.89	2.71	0.91	5.56	1.50	2.88	0.95	2.76	1.02	5.65	1.76
16 to 18 (n = 11)	2.64	0.67	2.64	0.50	5.27	0.90	2.45	1.04	2.73	0.79	5.18	1.60	3.27	0.65	3.18	0.75	6.45	1.21	2.91	0.94	3.00	0.77	5.91	1.64

Table 9.42

Means and Standard Deviations for Perceived Importance (PIP) Items and Subscales (Girls)

AGE (Years)	IMPORTANCE OF SPORT / ATHLETIC COMPETENCE						IMPORTANCE OF PHYSICAL CONDITION						IMPORTANCE OF BODY ATTRACTIVENESS						IMPORTANCE OF PHYSICAL STRENGTH					
	1		2		TOTAL		1		2		TOTAL		1		2		TOTAL		1		2		TOTAL	
	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd	m	sd
11 (n = 32)	3.06	0.89	2.83	0.95	5.90	1.35	2.73	0.91	2.94	0.77	5.63	1.33	2.97	0.93	2.77	0.94	5.69	1.44	2.90	0.86	2.90	0.80	5.75	1.35
12 (n = 51)	2.98	0.81	2.69	0.76	5.67	1.24	2.65	0.77	2.63	0.75	5.27	1.08	2.94	0.79	2.73	0.87	5.68	1.28	2.51	0.92	2.51	0.73	5.02	1.33
13 (n=107)	2.67	0.82	2.56	0.77	5.23	1.33	2.61	0.78	2.71	0.74	5.23	1.21	2.93	0.85	2.67	0.77	5.60	1.31	2.43	0.78	2.28	0.75	4.71	1.36
14 (n = 27)	2.93	0.92	2.81	0.79	5.74	1.46	2.78	0.85	2.85	0.82	5.63	1.24	3.33	0.83	3.04	0.81	6.37	1.33	2.67	0.83	2.48	0.80	5.15	1.54
15 (n = 18)	2.78	0.73	2.56	0.86	5.33	1.41	2.67	1.08	2.67	0.69	5.33	1.64	2.67	1.08	2.72	0.83	5.39	1.38	2.33	1.03	2.28	0.83	4.61	1.50
16 to 18 (n = 61)	1.98	0.85	2.15	0.81	4.13	1.58	2.44	0.90	2.43	1.01	4.87	1.73	3.20	0.77	2.62	0.86	5.82	1.41	2.18	0.70	2.16	0.76	4.34	1.25

A series of 2-way analyses of variance were conducted for each of the 4 PIP subdomains to examine for age and gender differences. Significant main effects for age were found on the importance of body attractiveness (BODYIMP) subdomain, $F(5, 553) = 3.133$, $p < 0.01$ although post hoc analysis using Tukey's HSD revealed that no two groups were significantly different at the .05 level. There were no significant main effects for gender for BODYIMP. Significant main effects for gender were found on the importance of physical condition subdomain (CONDIMP), $F(1, 557) = 9.404$, $p < 0.01$, with higher mean scores for boys than girls on average in this subdomain. There were no significant main effects for age for CONDIMP, although Tukey's HSD following one-way ANOVA for age indicated significant differences between the oldest group of pupils (ages 16-18 years) and all of the younger groups of pupils in this subdomain. There were highly significant main effects found for both age and gender for the importance of sport and athletic competence subdomain (SPORTIMP). For age, $F(5, 555) = 5.616$, $p < 0.001$, with post hoc Tukey's HSD showing significant differences between the oldest pupils (ages 16-18 years) in comparison to all the younger age groups. The mean scores for SPORTIMP for boys were on average higher for boys than for girls, $F(1, 555) = 21.959$, $p < 0.001$. There were also significant main effects found for both age and gender for the importance of physical strength subdomain (STRENIMP). For age, $F(5, 551) = 2.569$, $p < 0.05$ with post hoc Tukey's HSD showing significant differences between the oldest pupils (ages 16-18 years) and the two youngest groups (ages 11 and 12 years), the older pupils in this subdomain rating STRENIMP significantly lower. Tukey's HSD also showed a significant difference between the pupils aged 11 and 13, the latter rating STRENIMP

significantly lower. For gender there was a highly significant difference, $F(1,551) = 25.272$, $p < 0.001$ with boys rating STRENIMP significantly higher than girls.

Further exploration of gender differences in the four PIP subdomains were explored with a stepwise discriminant analysis. This showed that these subscales could significantly discriminate between the boys and girls in this sample (Wilks' lambda = .85, $\chi^2 = 85.507$, $p < 0.0001$). The best predictors for distinguishing between boys and girls were SPORTIMP (importance of sport and athletic competence subscale), BODYIMP (importance of body attractiveness subscale) and STRENIMP (importance of physical strength subscale). Overall, 67.69% of cases were correctly classified. However, although these three PIP subscales contributed towards the classification of gender, when SPORTIMP was entered into a discriminant analysis as the sole independent variable, this alone could correctly classify 59.44% of the cases.

A stepwise discriminant analysis with the PIP subscales was also conducted to explore age effects. The results showed that the 6 age groups in this sample could not be significantly discriminated (Wilks' lambda = .98, $\chi^2 = 9.36$, $p = n/s$) although 23.67% of the cases were correctly classified. This analysis was repeated to explore the relationship between PIP subscales and age effects, with the pupils classed as 'younger' (11-13 years) and 'older' (14-18 years). Using these broad age bands, 59.25% of the cases were correctly classified, with SPORTIMP and BODYIMP the best predictors of age (Wilks' lambda = .96, $\chi^2 = 20.664$, $p < 0.0001$). However, although these two PIP subscales contributed towards the classification of younger and

older pupils, when SPORTIMP was entered into a discriminant analysis as the sole independent variable, this alone could correctly classify 57.57% of the cases.

Correlations between PIP items were calculated for boys and girls and are shown in tables 9.43 and 9.44. Separate correlations are shown for the younger pupils (aged 11 to 13 years) and the older pupils (aged 14 to 18 years).

Table 9.43

Correlations between PIP Items in Boys

ITEMS		SPORTIMP		CONDIMP		BODYIMP		STRENIMP	
		1	2	1	2	1	2	1	2
SPORTIMP	1		0.26** 0.45**	0.26** 0.17	0.38** 0.35*	0.32** 0.24*	0.27** 0.18	0.21* 0.21	0.39** 0.10
	2			0.29** 0.11	0.20 0.38**	0.23* 0.11	0.27** 0.18	0.30* 0.11	0.31** 0.21*
CONDIMP	1				0.09 0.08	0.14 0.06	0.36** -0.01	0.31** 0.40**	0.07 0.30*
	2					0.34** 0.21*	0.23* 0.40**	0.28** 0.27*	0.37** 0.30*
BODYIMP	1						0.28** 0.32*	0.34** 0.29**	0.49** 0.47**
	2							0.46** 0.22*	0.40** 0.31*
STRENIMP	1								0.49** 0.65**
	2								

*p<0.01, **p<0.001
first line boys aged 11-13 years (n = 192)
second line boys aged 14-18 years (n = 86)

Table 9.44

Correlations between PIP Items in Girls

ITEMS	SPORTIMP		CONDIMP		BODYIMP		STRENIMP	
	1	2	1	2	1	2	1	2
SPORTIMP	1	0.30** 0.71**	0.41** 0.39**	0.26** 0.47**	0.19* 0.23	0.05 0.32**	0.39** 0.47**	0.32** 0.40**
	2		0.29** 0.36**	0.35** 0.48**	0.06 0.09	0.19* 0.33**	0.40** 0.38**	0.29** 0.51**
CONDIMP	1			0.19* 0.53**	0.07 0.12	0.18 0.52**	0.45** 0.41**	0.30** 0.47**
	2				0.25** 0.14	0.26** 0.64**	0.23** 0.45**	0.36** 0.53**
BODYIMP	1					0.24** 0.34**	0.18 0.17	0.22* 0.23
	2						0.22* 0.49**	0.34** 0.51**
STRENIMP	1							0.45** 0.53**
	2							

*p<0.01, **p<0.001
first line girls aged 11-13 years (n = 190)
second line girls aged 14-18 years (n = 106)

Same subscale items did not always highly correlate, ranging from .09 to .49 for the younger boys, .08 to .65 in the older boys, .19 to .45 for the younger girls and .34 to .71 in the older girls. For the younger boys and girls none of the same subscale items correlated most highly with each in comparison with correlations with other PIP items. For the older boys the SPORTIMP items correlated most highly with each other (r =.45) as did the STRENIMP items (r = .65) but CONDIMP and BODYIMP items correlated more highly with other PIP items. For the older girls there was a high same subscale correlation for the SPORTIMP items (r = .71) but the other subscale items

correlated with the same or greater level with other items. In particular the correlations between CONDIMP items appeared to be particularly weak, with correlations of .09 for the younger boys, .08 for the older boys and .19 for the younger girls. Only in the subsample of the older girls did the same item correlations for this subscale reach a moderate and significant correlation of .53, even so the CONDIMP items correlated more highly with other subscale items.

Exploratory factor analyses were carried out on the PIP. Taking into account the gender and age differences, these were conducted separately for boys and girls in the younger and older subgroups.

Table 9.45

Factor Loadings for PIP Items for Boys Aged 11-13 Years (n = 192)

ITEMS		FACTORS & FACTOR LOADINGS	
		1	2
SPORTIMP	1	.61	.60
	2		
CONDIMP	1	.77	.87
	2		
BODYIMP	1	.70	.64
	2		
STRENIMP	1	.75	.56
	2		
Eigenvalue		3.13	1.12
% Variance		39.2	14.1
Cumulative % Variance		39.2	53.3

(only loadings >0.4 shown)

Principal component factor analysis, using oblique rotation (delta = 0) for the younger boys revealed only 2 factors with eigenvalues greater than 1. These accounted for only 53.3% of the variance in PIP scores. Same subscale items split across the two factors and hence no clear or meaningful factor structure was produced. See table 9.45.

Principal component factor analysis, using oblique rotation ($\delta = 0$) for the older boys revealed a slightly clearer factor structure but with only 3, factors with eigenvalues greater than 1. These accounted for 67% of the variance in PIP scores. The first factor comprised of the two BODYIMP items, together with moderate loadings of one of the CONDIMP items and one of the STRENIMP items, which both cross loaded >0.4 on other factors. The second factor comprised of the two SPORTIMP items, together with the cross loaded CONDIMP item. The last factor comprised of the two STRENIMP items, together with one of the CONDIMP items. See table 9.46.

Table 9.46

Factor Loadings for PIP Items for Boys Aged 14-18 Years (n = 86)

ITEMS		FACTORS & FACTOR LOADINGS		
		1	2	3
SPORTIMP	1		.80	
	2		.83	
CONDIMP	1			.82
	2	(.41)	.55	
BODYIMP	1	.69		
	2	.77		
STRENIMP	1			.75
	2	.54		.61
Eigenvalue		2.84	1.30	1.15
% Variance		35.5	17.1	14.4
Cumulative % Variance		35.5	52.6	67.0

(only loadings >0.4 shown)

Principal component factor analysis, using oblique rotation ($\delta = 0$) for the younger girls revealed 2 factors with eigenvalues greater than 1, accounting for only 51.1% of the variance in PIP scores. The first factor contained the SPORTIMP items, the STRENIMP items and one of the CONDIMP items. The second factor contained the BODYIMP items together with on the CONDIMP items and one of the STRENIMP items, which cross loaded on the first factor. See table 9.47

Table 9.47

Factor Loadings for PIP Items for Girls Aged 11-13 Years (n = 190)

ITEMS		FACTORS & FACTOR LOADINGS	
		1	2
SPORTIMP	1	.74	
	2	.60	
CONDIMP	1	.78	
	2		.55
BODYIMP	1		.72
	2		.75
STRENIMP	1	.73	
	2	.41	.46
Eigenvalue		2.92	1.16
% Variance		36.6	14.5
Cumulative % Variance		36.6	51.1

(only loadings >0.4 shown)

For the older girls there was also 2 factors with eignenvvalues greater than 1, although more of the variance in PIP scores was explained than for the younger girls (62.5%). The first of these factors accounted for the majority of the variance and contained all of the items except for one of the BODYIMP items. The two BODYIMP items loaded together on the second factor, although one did cross load on the first factor. See table 9.48.

Table 9.48

Factor Loadings for PIP Items for Girls Aged 14-18 Years (n = 106)

ITEMS		FACTORS & FACTOR LOADINGS	
		1	2
SPORTIMP	1	.83	
	2	.88	
CONDIMP	1	.64	
	2	.73	
BODYIMP	1		.77
	2	.52	.55
STRENIMP	1	.66	
	2	.69	
Eigenvalue		3.9	1.03
% Variance		49.5	12.9
Cumulative % Variance		49.5	62.5

(only loadings >0.4 shown)

The factor correlation matrices showed factor correlations of between .2 and .3. These correlations were on the borderline for criteria for choosing between orthogonal and non-orthogonal rotations (West, 1991) and hence either could be considered potentially acceptable. In order to establish whether a clearer factor structures could be produced, principal components analyses were conducted using varimax rotation. However, this was unsuccessful. The analyses for both boys and girls in the younger and older age groups produced similar patterns of factor loadings as with the oblique rotation. Even when four factors were forced in a subsequent analysis there was no clear structure produced.

Alpha reliability coefficients were calculated for the PIP items entered all together as a subscale. The reliability coefficient for the subscale (Cronbachs alpha) was .78 with all items contributing to the reliability of the subscale.

In sum, it appeared that PIP items and subscales have satisfactory content and predictive validity. However there is a poor internal consistency within PIP subscales. It is suggested that the participants in this sample have difficulty in distinguishing between subscales, although the older boys were most able doing this and older girls may appear to distinguish BODYIMP (importance of body attractiveness subscale) from the rest. In each of the factor analyses the first factor had a large eigenvalue and accounted for the vast majority of the variance. Overall, rather than there being clearly defined subscales of perceived importance there appears to be a general factor of importance, which is a valid and reliable construct in itself for this sample.

Following these analyses a further two-way analysis of variance was conducted to examine age and gender differences in perceived importance, using the general importance subscale with all PIP items combined into one scale. The 2-way analysis of variance confirmed a highly significant main effect for gender, $F(1, 540) = 17.082, p < 0.001$, with the mean score for boys higher than for girls, and a significant main effect for age, $F(5, 540) = 2.429, p < 0.05$. Post hoc comparisons using Tukey's HSD test revealed no significant differences between the age groups in boys, but significant differences between the oldest girls (aged 16-18 years), who had the lowest mean PIP score and the girls aged 11, 12 and 14 who had high PIP scores in relation to the other girls.

Fox (1990) has conceptualised PIP as a filter or screen between each of the self-perception subdomains and physical self-worth and general self-esteem. He provided a means of calculating discrepancy scores (between perceived importance and perceived competence) based on Harter's theorising and empirical work. Due to the relatively moderate same PIP subscale correlations and unclear factor structure with this sample of young people there was caution held in further using PIP subscale scores in this way. However, Whitehead (1995) also reported an undifferentiated factor analysis with PIP items in his sample of children, but went on to report discrepancy scores. Hence the recommended method of calculating discrepancy scores was also used for this sample.

Boys and girls were considered separately in the two broad age groups, younger (11-13 years) and older (14-18 years). Only the minority (i.e. relatively small proportions)

of pupils showed a discrepancy between importance and adequacy/competence; for younger boys ($\chi^2 = 12.27$, $df = 1$, $p < 0.001$) for older boys ($\chi^2 = 8.24$, $df = 1$, $p < 0.05$) and for older girls ($\chi^2 = 20.3$, $df = 1$, $p < 0.001$). The exception to this was the younger girls with no significant difference between the proportions with a discrepancy score and a positive balance ($\chi^2 = 2.5$, $df = 1$, $p = n/s$).

Fox (1990) hypothesised that high negative discrepancy scores relate to lower physical self-worth and global self-esteem. Table 9.49 shows the correlations between discrepancy scores, physical self-worth and global self-esteem for the subgroups in this sample.

Table 9.49

Correlations between Discrepancy Scores, Physical Self-Worth and Global Self-Esteem

DISCREPANCY SCORE		PHYSICAL SELF-WORTH	GLOBAL SELF-ESTEEM
BOYS	11-13 YEARS (n = 192)	-0.31*	-0.27*
	14-18 YEARS (n= 86)	-0.63**	-0.36*
GIRLS	11-13 YEARS (n = 190)	-0.39**	-0.34*
	14-18 YEARS (n = 106)	-0.15	-0.40*

* p<0.01
 ** p<0.001

Generally, these results show support for this hypothesis. As discrepancies between perceived competence/ adequacy and perceived importance (of competence) increases on the subscales, the more scores on physical self-worth and global self-esteem were decreased. An exception to this was with the older girls, for whom overall discrepancy scores and physical self-worth were not significantly correlated. As this section of the sample showed a meaningful distinction between general perceived importance and the importance of body attractiveness these discrepancy scores were analysed separately. Although, overall, only the minority of the older girl's scores showed a discrepancy between importance and competence, when the discrepancy between the perceived importance of body attractiveness and the perceived competence/adequacy on this subscale was calculated it showed that, in fact, 68.6% ($n = 72$) of the older girls had a negative discrepancy score ($\chi^2 = 14.48$, $df = 1$, $p < 0.001$). The correlation between the discrepancy scores on this factor and physical self-worth was .39 ($p < 0.01$) and with global self-esteem it was .48 ($p < 0.001$). This provided further evidence to suggest that when an individual is unable to discount the low competency/adequacy perceived physical self-worth and global self-esteem are jeopardised.

Perceived importance scores may independently predict physical activity participation (Fox, 1990) and hence these will be used in further regression analyses.

9.5 Sport socialisation.

9.51 Peer sport socialisation influences.

Descriptive statistics for the ten peer sport socialisation influence (PeSSI) items are shown in table 9.511 for boys and table 9.512 for girls. Item means tended to be around or slightly higher than the mathematical midpoint of 2.5. The most noticeable exceptions to this were the mean scores for PeSSI item 1 (‘play sports because that is what friends like to do’) and item 8 (‘most fun playing sports with friends than anything else’) in the older pupils, where mean scores were low. However, all the possible scores (from 1 to 4) were represented for all items across the sample.

Table 9.511

Means and Standard Deviations for Peer Socialisation Items (Boys)

AGE (Years)	PEER SOCIALISATION ITEMS																			
	1		2		3		4		5		6		7		8		9		10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n= 33)	3.0	1.05	3.06	1.13	3.24	0.94	2.66	1.15	2.50	1.24	2.94	1.11	2.91	1.18	3.0	1.02	2.94	1.19	3.0	1.03
12 (n = 55)	2.87	0.96	2.75	1.06	3.20	0.73	2.85	0.95	2.58	1.10	2.83	0.91	2.78	0.98	2.95	0.95	2.98	0.91	2.84	1.01
13 (n=104)	2.53	1.01	3.11	0.91	3.10	0.82	2.82	0.84	2.60	1.01	3.04	0.87	2.89	0.93	2.66	1.01	2.78	0.95	2.83	0.95
14 (n = 41)	2.71	1.03	3.12	0.98	3.10	0.80	2.59	0.87	2.63	1.02	3.12	0.87	2.83	0.74	2.83	0.89	2.88	0.87	2.93	0.96
15 (n = 34)	2.53	1.08	3.29	0.87	3.18	0.87	2.97	0.76	2.71	1.06	2.62	0.95	3.09	0.75	2.76	1.02	2.94	1.01	3.09	1.06
16-18 (n = 11)	2.09	0.94	3.27	1.01	2.73	0.65	2.73	0.79	2.45	1.04	2.45	1.13	3.0	0.77	1.91	0.70	2.73	1.01	2.55	1.29

Table 9.512

Means and Standard Deviations for Peer Socialisation Items (Girls)

AGE (Years)	PEER SOCIALISATION ITEMS																			
	1		2		3		4		5		6		7		8		9		10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 32)	2.55	1.15	3.03	1.07	2.63	1.07	2.33	1.03	2.37	1.03	3.13	0.91	2.66	0.94	2.59	1.13	2.87	0.91	3.03	0.95
12 (n = 51)	2.27	0.83	2.75	0.89	2.57	0.85	2.48	0.81	2.20	0.73	2.71	0.88	2.72	0.76	2.43	0.94	2.63	0.77	3.02	0.97
13 (n=107)	2.14	0.87	2.93	0.98	2.55	0.85	2.60	0.73	2.32	0.83	2.94	0.77	2.69	0.74	2.25	0.87	2.59	0.80	3.21	0.87
14 (n = 27)	2.15	0.86	3.52	0.64	2.74	0.94	2.85	0.77	2.33	1.14	2.59	1.19	3.07	0.83	2.0	0.96	2.48	0.98	3.22	0.80
15 (n = 18)	1.78	0.88	2.89	1.08	2.50	0.92	2.61	0.61	2.33	1.01	2.53	1.07	2.61	0.85	2.11	0.96	2.50	0.92	3.33	0.91
16-18 (n = 61)	1.54	0.74	3.46	0.72	2.66	0.81	2.57	0.74	1.82	0.79	2.72	1.02	2.84	0.71	1.64	0.88	2.38	0.82	3.34	0.77

Reliability analysis for the PeSSI scale was conducted using Cronbach’s alpha. This showed the reliability for the scale with all ten items to be .61. Indication was given that if items 2, 6, and 10 were deleted that alpha would improve. An examination of the content of these items suggested that they appear to measure peer feedback about appearance rather than peer influence on physical activity/sport participation. These items were hence deleted from the scale, giving a Cronbach’s alpha of .68. With these remaining 7 items the scale was considered to show satisfactory internally consistency.

Table 9.513

Means and Standard Deviations for Peer Sport Socialisation Scale

		PEER SOCIALISATION (COMPOSITE SCALE)	
		M	SD
BOYS	11-13 YEARS (n= 192)	19.78	3.72
	14-18 YEARS (n = 86)	19.56	3.80
GIRLS	11-13 YEARS (n = 190)	17.42	3.31
	14-18 YEARS (n = 106)	16.17	3.50

Table 9.513 shows the means and standard deviations for the PeSSI scale. The maximum possible score being of 28 and a the minimum possible score being of 7, with the mathematical midpoint of 17.5. Scores for the boys tended to be higher than the mathematical midpoint and scores for the girls were slightly lower but they were considered to be sufficiently spread around the mathematical mean to not indicate a 'floor' or 'ceiling' effect.

A 2-way analysis of variance was performed to examine gender and overall differences on the PeSSI scale. This showed a highly significant main effect for gender, $F(1,535) = 47.824$, $p < 0.001$, with a higher mean scores on this scale for boys than girls, and also significant main effects for age, $F(5,535) = 3.199$, $p < 0.01$, showing a tendency towards lower mean scores on this scale for the older pupils. There was no significant 2-way interaction effect. Post hoc comparisons using Tukey's HSD test showed that no two age groups of males had significantly different scores on this scale. With the females, post hoc comparisons showed significant differences between the females aged 16 to 18 years (with the lowest mean score) and the three youngest age groups.

Stepwise discriminant function analyses were conducted to further explore gender and age differences on the PeSSI scale. With regards to gender the analysis showed that these items could significantly discriminate between the boys and girls in this sample (Wilks' lambda = .82, $\chi^2 = 104.229$, $p < 0.0001$). The best predictors for distinguishing between boys and girls were item 3 ('popular with others when playing sport') item 1 ('play sports because that is what friends like to do'), item 8 ('most fun playing sports with friends than anything else') and item 5 ('friends do a lot of sport'). Altogether 66.79% of cases were correctly classified by gender.

With regards to age the analysis showed that these items could significantly discriminate between younger (ages 11-13 years) and older (ages 14 to 18 years) pupils (Wilks' lambda = .94, $\chi^2 = 33.266$, $p < 0.0001$). Specifically, the best predictors for distinguishing between younger and older pupils were item 1 ('play sports because that is what friends like to do'), item 8 ('most fun playing sports with friends than anything else') and item 7 ('asked by others to join in with sports'). Altogether 60% of cases were correctly classified as younger or older pupils.

Correlation coefficients examining the relationships between PeSSI and self perceptions subdomains are shown in table 9.514. The peer sport socialisation influence scores were correlated with each of the C-PSPP subdomains as well as physical self-worth and global self-esteem. There were stronger relationships between PeSSI and SPORT (sport and athletic competence subdomain) than the other C-PSPP subdomains across the sample (although PeSSI did however correlate significantly with all of the C-PSPP subdomains). As was hypothesised, PeSSI correlated more strongly with physical self-worth than it did for global self-esteem. Peer sport socialisation influence scores were also significantly related to PIP (perceived importance of competence/adequacy composite scale) across the sample.

Table 9.514

Correlations between Peer Socialisation and Self-Perception Subdomains

PEER SOCIALISATION		Sport	Physical Condition	Body Attractiveness	Physical Strength	Physical Self-Worth	Global Self-Esteem	PIP
BOYS	11-13 YEARS (n = 192)	0.54**	0.51**	0.50**	0.39**	0.50**	0.42**	0.52**
	14-18 YEARS (n = 86)	0.50**	0.32**	0.22**	0.27**	0.46**	0.38**	0.45**
GIRLS	11-13 YEARS (n = 190)	0.37**	0.33**	0.30**	0.28**	0.41**	0.40**	0.29**
	14-18 YEARS (n = 106)	0.64**	0.54**	0.30*	0.37**	0.55**	0.30*	0.53**
* p≤0.01 ** p≤0.001								

9.52 Parental sport socialisation influences.

In a parallel analysis to the ten peer sport socialisation influence items (PeSSI) the ten parental sport socialisation influence items (PaSSI) were examined. Descriptive statistics for these items are shown in table 9.521 for boys and table 9.522 for girls. Item means for the PaSSI items tended to be around the mathematical midpoint of 2.5. However, within the age group of the oldest boys for 7 out of 10 of these items the means were lower than the mathematical midpoint, with 5 of these 7 showing a mean value less than 2. This might be a reflection of the relatively small sample size of this group or the nature of the scale used.

For the PaSSI item 10, scores tended to be uniformly above the expected midpoint, indicating a ceiling effect. This item attempted to measure whether young people perceive that they get praised by their parents whether or not they do well at sports. The generally high scores might be due to an ambiguity in the phrasing of the item, where the pupils may have interpreted the two sentences as comparing success at sport in comparison with other activities rather than doing well or not at sport. There also tended to be high mean scores for PaSSI item 8 ('parents make you feel really good about appearance'). Throughout the sample all possible scores (from 1 to 4) were represented for all items, except for PaSSI item 10 for the oldest boys, for whom the minimum was only 3.

Table 9.521

Means and Standard Deviations for Parental Socialisation Items (Boys)

AGE (Years)	PARENTAL SOCIALISATION ITEMS																			
	1		2		3		4		5		6		7		8		9		10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 33)	2.50	1.16	2.73	1.21	3.09	0.95	2.73	1.07	3.15	0.83	3.00	1.09	2.13	1.09	3.10	0.98	3.36	0.60	3.21	1.02
12 (n = 55)	2.24	0.98	2.42	1.03	2.93	0.88	2.76	1.02	2.82	0.94	2.64	0.95	2.51	1.02	2.96	0.85	2.76	1.00	2.80	1.02
13 (n=104)	2.62	0.98	2.24	0.94	3.17	0.77	2.86	0.94	2.85	0.90	2.95	0.84	2.24	0.94	3.01	0.76	2.74	1.01	2.99	0.96
14 (n = 41)	2.37	0.99	2.24	1.16	3.10	0.86	2.63	0.86	2.61	0.86	2.61	0.89	2.15	0.88	2.77	0.89	2.73	0.90	3.05	0.89
15 (n = 34)	1.94	0.74	2.56	1.02	2.91	0.93	2.47	1.13	2.50	0.83	2.44	0.96	2.09	1.00	2.91	1.00	2.00	0.85	2.62	1.10
16-18 (n = 11)	1.55	0.69	1.64	0.67	2.64	0.50	2.27	1.10	1.91	0.83	2.36	0.81	1.91	0.70	3.00	0.89	1.73	0.79	3.18	0.40

Table 9.522

Means and Standard Deviations for Parental Socialisation Items (Girls)

AGE (Years)	PARENTAL SOCIALISATION ITEMS																			
	1		2		3		4		5		6		7		8		9		10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 32)	2.66	1.10	2.56	1.22	3.44	0.67	2.84	0.99	2.78	1.04	2.81	0.98	2.63	1.24	3.16	0.85	3.03	0.97	3.06	1.09
12 (n = 51)	2.39	0.85	2.02	0.93	2.78	0.76	2.67	0.84	2.72	0.93	2.74	0.94	2.10	0.88	3.12	0.82	2.76	0.87	3.06	0.84
13 (n=107)	2.64	0.91	2.09	0.95	3.14	0.64	2.90	0.92	2.78	0.80	2.65	0.78	2.00	0.76	3.11	0.75	2.60	0.83	3.23	0.77
14 (n = 27)	2.56	1.12	1.78	0.75	3.11	0.80	3.00	1.00	2.52	1.01	2.52	0.98	1.96	0.90	3.07	0.78	2.30	0.95	3.04	0.85
15 (n = 18)	2.17	0.99	1.44	0.86	3.11	0.83	3.00	1.03	2.17	1.15	2.44	1.10	2.00	0.77	3.11	0.58	2.22	1.06	3.22	0.73
16-18 (n = 61)	2.16	0.90	1.38	0.69	2.64	0.78	2.87	1.01	2.25	0.81	2.08	0.88	1.48	0.65	3.03	0.91	1.85	0.95	3.45	0.75

Reliability for the PaSSI scale was conducted using Cronbach’s alpha. Including all ten items this showed the reliability to be .63. As with the peer sport socialisation items two items (4 and 8) appeared to be measuring feedback about appearance rather than sport socialisation per se, so these items were deleted from the reliability analysis. Also, because of the possible ambiguity with PaSSI item 10 this was also deleted from the scale. With the remaining 7 items in the scale the reliability increased to .71, showing satisfactory internal consistency, slightly higher than the peer sport socialisation scale.

Table 9.523

Means and Standard Deviations for Parental Sport Socialisation Scale

		PARENTAL SOCIALISATION (COMPOSITE SCALE)	
		M	SD
BOYS	11-13 YEARS (n = 192)	18.84	3.68
	14-18 YEARS (n = 86)	16.74	3.92
GIRLS	11-13 YEARS (n = 190)	18.19	3.56
	14-18 YEARS (n = 106)	14.87	4.05

Table 9.523 shows the means and standard deviations for the PaSSI scale. The maximum possible score being 28 and the minimum possible score being of 7, with the mathematical midpoint of 17.5. Scores for the younger pupils tended to be slightly higher than the mathematical midpoint and score for the older pupils lower. All scores from 7 to 28 were represented throughout the sample grouped in this way.

A 2-way analysis of variance was performed to examine age and gender differences on the PaSSI scale. This showed a highly significant main effect for age, $F(5,547) = 16.745$, $p < 0.001$ with the younger pupils tending to score most highly on this scale, but no significant main effect for gender, $F(1,547) = 2.481$, $p = n/s$. There was also no significant interaction. Post hoc comparisons using Tukey's HSD test showed significant differences on this scale between the boys aged 16 to 18 years (with relatively low scores on this scale) and the boys aged 11, 12, 13, and 14 years. There were also honest significant differences between the boys aged 15 years (with a relatively low score on this scale) compared to the boys aged 11 and 13 years.

For the girls, post hoc comparisons also showed significant HSD on this scale between the oldest girls (with relatively low scores on this scale) and the girls aged 11, 12, 13 and 14 years. There were also significant HSD between the 14 and 15 year old girls (with relatively low scores on this scale) in comparison to the youngest girls, age 11 years.

Stepwise discriminant function analyses were conducted to further explore gender and age differences on the PaSSI scale. With regards to gender the analysis showed that

these items could significantly discriminate between the boys and girls in this sample (Wilks' lambda = .94, $\chi^2 = 33.724$, $p < 0.0001$). The best predictors for distinguishing between boys and girls were item 2 ('parents don't mind whether their children win or lose at sports'), item 6 ('parents really want them to get involved in sports'), and item 1 ('parents like to do a lot of sport and exercise'). Altogether 61.31% of cases were correctly classified by gender.

With regards to age the analysis showed that these items could significantly discriminate between the younger (ages 11 to 13 years) and older (ages 14 to 18 years) pupils with Wilks' lambda = .87, $\chi^2 = 73.993$, $p < 0.0001$. Specifically, the best predictors for distinguishing between the younger and older pupils were item 9 ('parents often play sports and games with them'), item 7 ('parents think it is important for their child to be one of the best at sport'), item 5 ('parents keep themselves physically fit') and item 6 ('parents really want them to get involved in sports'). Altogether 64.77% of cases were correctly classified as younger or older pupils.

Correlation coefficients examining the relationships between PaSSI and self-perception subdomains are shown in table 9.524.

Table 9.524

Correlations between Parental Socialisation and Self-Perception Subdomains

PARENTAL SOCIALISATION		Sport	Physical Condition	Body Attractiveness	Physical Strength	Physical Self-Worth	Global Self-Esteem	PIP
BOYS	11-13 YEARS (n = 192)	0.34**	0.32**	0.40**	0.32**	0.39**	0.28**	0.44**
	14-18 YEARS (n = 86)	0.19	0.09	0.23	0.19	0.13	0.20	0.21
GIRLS	11-13 YEARS (n = 190)	0.24*	0.32**	0.23*	0.28**	0.24*	0.17	0.36**
	14-18 YEARS (n = 106)	0.40**	0.31*	0.07	0.27	0.31**	0.07	0.38**

* p<0.01

** p<0.001

For the younger boys the parental sport socialisation influence scores were significantly correlated with each of the C-PSPP subdomains, as well as physical self-worth, global self-esteem and perceived importance (PIP composite scale). In particular there were high correlations between the body attractiveness subscale ($r = .40, p < 0.001$) and perceived importance ($r = .44, p < 0.001$). These results contrast sharply with the older boys for whom there were no significant correlations between parental sport socialisation influence scores and any of the aspects of self-perception. For the younger girls, PaSSI scores correlated significantly with all of the self-perception subdomains except for global self-esteem. The highest correlation was with perceived importance ($r = .36, p < 0.001$). For the older girls, PaSSI scores correlated significantly with two of the C-PSPP subdomains, sport and athletic competence and physical condition. There was a significant correlation with physical self-worth but not global self-esteem. As with the other subgroups of pupils, one of the highest correlations was with perceived importance.

9.6 Psychometric evaluation of the 'Body constancy' scale.

The six 'body constancy' items were derived from a previous factor analytic study (see appendix 2) and were designed to measure the disruption/inconvenience that may be perceived in association with physical activity participation. Low scores on these items related to greater perceived disruption/inconvenience or desire for 'body constancy'. Descriptive statistics are shown for these six items in table 9.61 for boys and table 9.62 for girls. Item means tended to be around or slightly higher than the mathematical midpoint of 2.5 for most items. The mean scores for 'body constancy' item 5 ('don't think that playing games and sports is a hassle') and 'body constancy' item 6 ('don't

mind changing out of everyday clothes when exercising') tended to be in the upper ranges giving some indication of a ceiling effect. Although the standard deviations for these items tended to be relatively small, for most of the items all possible scores (from 1 to 4) were represented. The exceptions to this were for 'body constancy' item 5 for the 11 year old boys and the 14 and 16 to 18 year old girls, for whom the very minimum possible score of 1 was not represented. Also the minimum possible score of 1 was not represented on 'body constancy' item 6 in the 14 year old girls.

Table 9.61

Means and Standard Deviations for ‘Body Constancy’ Items (Boys)

AGE (Years)	‘BODY CONSTANCY’ ITEMS											
	1		2		3		4		5		6	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 33)	2.88	1.17	2.58	1.15	3.52	0.87	2.76	1.20	3.42	0.71	2.94	1.06
12 (n = 55)	2.64	1.02	2.56	1.05	2.95	1.08	2.89	0.98	2.98	0.96	2.96	0.92
13 (n= 104)	2.79	1.09	2.74	1.08	3.25	0.81	3.24	0.82	3.25	0.86	3.25	0.86
14 (n = 41)	2.85	0.94	2.73	0.98	3.17	1.00	2.85	0.88	3.27	0.87	3.15	0.73
15 (n = 34)	3.06	0.95	2.88	0.98	3.32	0.84	3.12	0.81	3.24	0.92	3.29	0.97
16-18 (n = 11)	2.73	1.10	2.64	1.12	2.64	0.81	2.73	1.10	2.82	0.98	3.18	0.87

Table 9.62**Means and Standard Deviations for 'Body Constancy' Items (Girls)**

AGE (Years)	'BODY CONSTANCY' ITEMS											
	1		2		3		4		5		6	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
11 (n = 32)	2.41	1.21	2.34	0.97	3.41	0.67	3.03	1.09	3.09	1.09	3.09	1.09
12 (n = 51)	2.20	0.89	2.40	0.97	2.88	0.73	2.57	0.94	2.86	0.69	2.98	0.89
13 (n = 107)	2.45	1.01	2.27	0.97	3.09	0.80	3.04	0.88	2.93	0.80	3.18	0.79
14 (n = 27)	2.85	1.06	2.48	1.09	3.41	0.69	3.00	0.92	3.15	0.72	3.44	0.64
15 (n = 18)	2.56	0.92	2.33	0.91	3.11	0.68	2.78	1.11	3.06	0.80	3.44	0.86
16-18 (n = 61)	2.84	1.08	2.15	1.01	3.15	0.75	3.07	0.89	2.73	0.77	3.48	0.78

‘Body constancy’ items were subjected to an exploratory factor analysis using varimax rotation. This analysis was initially conducted separately for boys and girls in the younger (ages 11 to 13 years) and older (14 to 18 years) subgroups. In each case two factors with eigenvalues greater than 1 were extracted with similar factor loadings shown in each subgroup. Due to these similarities the analysis shown is for the whole sample (see table 9.63).

Table 9.63

Factor Loadings for ‘Body Constancy’ Items

ITEMS	FACTORS & FACTOR LOADINGS	
	1	2
1	.67	
2	.40	
3	.81	
4		.88
5	.80	
6		.69
Eigenvalue	2.30	1.05
% Variance	38.5	17.5
Cumulative % Variance	38.5	56.0

(only loadings >0.4 shown)

The first of these factors accounted for 38.5% of the variance and contained item 1 ('don't mind getting hot and sweaty'), item 2 ('would like to change body'), item 3 ('don't mind the effort you have to put in') and item 5 ('don't think that playing games and sports is a hassle'). The second factor accounted for 17.5% of the variance and contained item 4 ('don't mind showering and changing after playing games and sports') and item 6 ('don't mind changing out of everyday clothes when exercising'). Altogether these two factors accounted for 56% of the variance in 'body constancy'. The first of these factors seemed to relate generally to effort and the second factor specifically to changing clothes/showering.

Reliability analysis was conducted using Cronbach's alpha for the two factors 'effort' (4 items) and 'changing' (2 items). For the 'effort' factor the initial reliability coefficient was given as .63. Indication was given that if item 2 ('would like to change body') was deleted the alpha would improve. An examination of this item suggested that there were possible ambiguous interpretations of its meaning. This had been suggested during administration of the survey when some participants had asked for clarification of this item. It had been designed to measure body satisfaction but some participants were confused by the wording, perceiving the item to be asking whether they wanted to *exchange* their body rather than improve or modify it. Although this item loaded on the 'effort' factor the loading was only moderate(.40) and hence it was subsequently deleted from the subscale. With the remaining 3 items the scale showed satisfactory internal consistency with a Cronbach's alpha of .68.

For the ‘changing’ factor the reliability coefficient using Cronbach’s alpha was given as .48. Although this was relatively low it might have due to only having 2 items in the subscale. Exploratory factor analysis has shown that these items load together and an examination of the content suggests they do measure the same or similar constructs. These items grouped as a subscale were hence retained for further analysis.

Same subscale inter-item correlations were conducted. These correlations ranged from $r = .37$ to $r = .57$ ($p < 0.001$) for the ‘effort’ subscale and $r = .31$ ($p < 0.001$) for the ‘changing’ factor.

The means and standard deviations for the items in the ‘effort’ subscale are shown in table 9.64.

Table 9.64
Means and Standard Deviations for ‘Effort’ Subscale

AGE (Years)	BOYS			GIRLS		
	N	M	SD	N	M	SD
11	33	9.82	1.99	32	8.91	1.80
12	55	8.56	2.62	51	7.90	1.57
13	104	9.28	2.20	107	8.44	2.10
14	41	9.29	1.94	27	9.41	1.80
15	34	9.62	2.17	18	8.72	1.90
16-18	11	8.18	2.56	61	8.92	2.01

The maximum possible score for this subscale was 12 and the minimum possible score was 3. Actual mean scores were above the mathematical midpoint of 7.5 for both boys and girls across the age groups. These tend to suggest that generally most pupils felt that the effort involved in physical activity participation was worth it.

2-way analysis of variance was performed to examine any age or gender differences on the 'effort' subscale. There were no significant main effects for gender, $F(1,554) = 3.701$, $p = n/s$) but there significant main effects for age, $F(5,554) = 3.728$, $p < 0.01$. Post hoc comparisons using Tukey's HSD test showed that no two groups of males had significantly different scores on this subscale. With the females, the only significant difference was between the 14 year old girls (with the highest mean score) and the 12 year old girls (with the lowest mean score).

The means and standard deviations for the ‘changing’ subscale are shown in table 9.65. The minimum possible score for this subscale was 2 and the maximum possible score was 8.

Table 9.65

Means and Standard Deviations for ‘Changing’ Subscale

AGE (Years)	BOYS			GIRLS		
	N	M	SD	N	M	SD
11	33	5.70	1.72	32	6.13	1.96
12	55	5.85	1.51	51	5.58	1.46
13	104	6.49	1.34	107	6.22	1.44
14	41	6.00	1.18	27	6.44	1.22
15	34	6.41	1.52	18	6.22	1.40
16-18	11	5.91	1.64	61	6.54	1.92

Actual mean scores for this subscale were also all above the mathematical midpoint of 5, suggesting overall that pupils appeared not mind having to change clothes/shower as part of doing physical activities. 2-way analysis of variance was performed to examine age and gender effects on the ‘changing’ subscale. As with the previous subscale this

showed no significant main effects for gender, $F(1, 560) = .76$, $p = n/s$, but there were significant main effects for age, $F(5, 560) = 3.262$, $p < 0.01$. Post hoc comparisons using Tukey's HSD test showed that no two groups of males had significantly different scores on this subscale. With the females, the only significant difference was between the 16 to 18 year old girls (with the highest mean score) and the 12 year old girls (with the lowest mean score).

9.7 The prediction of activity levels.

9.71 Correlational analyses.

Correlation coefficients were calculated to examine the relationships between the self-reported frequency of participation and the various self-perception and socialisation variables. These were calculated separately for boys and girls in the two age groups of younger (ages 11 to 13 years) and older (14 to 18 years) pupils.

As with previous analyses the significance level for all relationships was determined as $p \leq$ at least 0.01.

Correlation coefficients examining the relationship between physical activity (frequency of participation amended composite score, see table 9.2215) and physical self-perceptions are shown in table 9.711. These are shown for each of the C-PSPP subdomains of sport and athletic competence (SPORT), physical condition

(CONDITION), body attractiveness (BODY) and physical strength (STRENGTH). The relationship between physical activity and the higher order domains of physical self-worth and global self-esteem are also shown.

Table 9.711

Correlations between Physical Activity (Frequency of Participation) and C-PSPP Subdomains, Physical Self-Worth, Global Self-Esteem and Perceived Importance (PIP)

SELF-PERCEPTION DOMAIN	PHYSICAL ACTIVITY PARTICIPATION			
	BOYS		GIRLS	
	11-13 YEARS (n = 192)	14-18 YEARS (n = 86)	11-13 YEARS (n = 190)	14-18 YEARS (n =106)
SPORT	0.40**	0.14	0.17*	0.33**
CONDITION	0.38**	0.33**	0.31**	0.28**
BODY	0.35**	0.16	0.09	0.24*
STRENGTH	0.36**	0.30*	0.10	0.34**
PHYSICAL SELF-WORTH	0.32**	0.16	0.14	0.33**
GLOBAL SELF-ESTEEM	0.30**	0.01	0.13	0.16
P I P	0.35**	0.25*	0.13	0.33**
* $p \leq 0.01$ ** $p \leq 0.001$				

With the younger boys all of the self-perception domains and physical self-perception subdomains were highly significantly correlated with physical activity participation rate. Correlation coefficients ranged from .30 (global self-esteem) to .40 (sport and

athletic competence), $p \leq 0.001$. For the older boys only two of the C-PSPP subdomains were significantly correlated with physical activity participation rate (physical condition, $r = .33$, $p < 0.001$ and physical strength, $r = .30$, $p < 0.01$). Participation rate also correlated significantly with PIP (perceived importance). There was no significant relationship between participation rate and either physical self-worth or global self-esteem amongst the older boys.

For the younger girls there were also only two of the C-PSPP subdomains which correlated significantly with physical activity participation rate, sport and athletic competence ($r = .17$, $p \leq 0.01$) and physical condition ($r = .31$, $p \leq 0.001$). Physical activity rate correlated weakly but not significantly with physical self-worth, global self-esteem and PIP(perceived importance). With the older girls physical activity rate correlated significantly with all of the self-perception variables except global self-esteem. Correlation coefficients ranged from .24 (body attractiveness) to .34 (physical strength).

Table 9.712 shows the correlations between physical activity participation rate and the peer and parental sport socialisation influence subdomains. For the younger boys there was a stronger relationship found between peer sport socialisation influence and physical activity participation rate than there was for parental sport socialisation influence. In fact, the later correlation was only very moderate and not significant at the $p \leq 0.01$ level. The converse was found with the older boys for whom parental sport socialisation influence was more strongly related to physical activity participation rate than was peer sport socialisation influence, although both correlations were statistically significant.

Table 9.712

Correlations between Physical Activity (Frequency of Participation) and Sport Socialisation Subdomains

SPORT SOCIALISATION SUBDOMAIN	PHYSICAL ACTIVITY PARTICIPATION			
	BOYS		GIRLS	
	11-13 YEARS (n = 192)	14-18 YEARS (n = 86)	11-13 YEARS (n = 190)	14-18 YEARS (n = 106)
PEERS (PeSSI)	0.31**	0.25*	0.18*	0.24*
PARENTS (PaSSI)	0.12	0.36**	0.19*	0.24*

*

p<0.01

**

p<0.001

Amongst the girls correlations between peer and parental sport socialisation influence and physical activity participation rate were similar in both age groups. For the

younger girls there were only moderate, albeit significant, relationships between participation and these socialisation influences with correlation coefficients of .18 (for PeSSI) and .19 (for PaSSI). For the older girls the correlation between peer and parental sport socialisation influence and physical activity participation rate was .24 in both cases.

Table 9.713 shows the correlations between physical activity participation rate and the two 'body constancy' subdomains of 'effort' and 'changing'

Table 9.713

Correlations between Physical Activity (Frequency of Participation) and ‘Body Constancy’ Subdomains

‘BODY CONSTANCY’ SUBDOMAIN	PHYSICAL ACTIVITY PARTICIPATION			
	BOYS		GIRLS	
	11-13 YEARS (n = 192)	14-18 YEARS (n = 86)	11-13 YEARS (n = 190)	14-18 YEARS (n = 106)
‘EFFORT’	0.16*	0.10	0.31**	0.24*
‘CHANGING’	0.24**	0.09	0.24**	-0.02

*

p<0.01

**

p<0.001

With the younger boys both of these were moderately and significantly related to participation rate, with a stronger relationship found for ‘changing’ and participation than for ‘effort’. For the older boys correlations were low and not significant between

these subdomains and participation rate. There were significant correlations between both 'effort' and 'changing' and participation rate in the younger girls, with a stronger relationship found for 'effort' and participation than for 'changing'. Amongst the older girls only the 'effort' subdomain was significantly related to participation rate with a moderate correlation of .24.

9.8 Multiple Regression analyses.

The final stage of the quantitative analysis was to use multiple regression techniques to examine the prediction of physical activity participation based on the self-perception and socialisation variables. In the first instance separate analyses were conducted for boys and girls in the younger (11 to 13 years) and older (14 to 18 years) categories. Hierarchical regression was used to determine if the addition of sport socialisation and 'body constancy' subdomain scores improved the prediction of physical activity participation beyond that which could be ascertained by self-perception scores. The recommended checklist of issues in multiple regression provided by Tabachnick and Fidell (1989) were considered for each analysis. In each case only the independent variables which significantly correlated with the dependent variable were added to the regression analysis (see tables 9.711/12/13). T values are given where significant.

9.81 The prediction of physical activity participation in younger boys.

All possible IV's were entered into the regression in blocks in order of hypothesised theoretical importance. Although PaSSI did not reach significance at $p<0.01$ when correlated with physical activity participation rate the correlation of .12 was significant at the 0.05 level and was hence included in this analysis.

Table 9.811 shows the unstandardised regression coefficients (B), the standardised regression coefficients (β), the semipartial correlations (sr^2) and R, R^2 and the adjusted R^2 after entry of all IVs for the younger boys.

Table 9.811

Hierarchical Regression of Self and Social Perception Variables on Frequency of Physical Activity Participation: Boys 11-13 Years (n = 196)

VARIABLES	B	β	t	Sr ² (incremental)
SPORT CONDITION BODY STRENGTH	0.32 0.14 0.12 0.16	0.21 0.10 0.08 0.10		0.19
PHYSICAL SELF-ESTEEM GLOBAL SELF-ESTEEM	-0.20 0.12	-0.12 0.07		0.01
P I P	0.27	0.21	2.05*	0.01
PESSI (PEERS) PASSI (PARENTS)	0.06 -0.20	0.04 -0.12		0.01
‘EFFORT’ ‘CHANGING’	-0.41 0.53	-0.16 0.13		0.04

R² = .26
(Adj.) R² = .20
R = .51

* p<0.05

After step 1, with the four C-PSPP subdomains in the equation $R^2 = .19$, $F(4, 146) = 9.025$, $p < 0.001$. After step 2 with physical self-worth and global self-esteem added together to the prediction, $R^2 = .20$, $F(6, 144) = 6.08$, $p < 0.001$. After step 3 with PIP (perceived importance) added to the prediction, $R^2 = .21$, $F(7, 143) = 5.76$, $p < 0.001$. In step 4 the peer and parental sport socialisation variables were added together to the prediction with $R^2 = .22$, $F(9, 141) = 6.08$, $p < 0.001$. After step 5 (when 'effort' and 'changing' were entered into the equation) with all IVs in the equation, $R = .51$, $F(11, 139) = 44.74$, $p < .001$. PIP (perceived importance) was the only IV to make an *independent* significant contribution to the prediction ($t = 2.05$, $p < 0.05$). Altogether 20% (adjusted) in the variability of physical activity participation rate was explained by scores on these subscales in young boys.

9.82 The prediction of physical activity participation in older boys.

All possible IV's were entered into the regression in blocks in order of hypothesised theoretical importance. Although physical self-worth did not reach significance at $p < 0.01$ when correlated with physical activity participation rate, the correlation of .16 was significant at the 0.05 level and was hence included in this analysis. Global self-esteem and the two 'body constancy' subdomains did not correlate significantly with the physical activity participation rate (DV) and were hence not included.

Table 9.821 shows the unstandardised regression coefficients (B), the standardised regression coefficients (β), the semipartial correlations (sr^2) and R , R^2 and the adjusted R^2 after entry of all IVs for the older boys.

Table 9.821

Hierarchical Regression of Self and Social Perception Variables on Frequency of Physical Activity Participation: Boys 14-18 Years (n = 86)

VARIABLES	B	β	t	Sr ² (incremental)
SPORT CONDITION BODY STRENGTH	-0.47 0.63 -0.34 0.52	-0.27 0.37 -0.21 0.31	2.99** 1.99*	0.17
PHYSICAL SELF-WORTH	0.02	0.01		0.0
P I P	0.10	0.07		0.01
PESSI (PEERS) PASSI (PARENTS)	0.003 0.49	0.001 0.32	2.94**	0.10

R² = .27
(Adj.) R² = .20
R = .52

* p<0.05
** p<0.01

After step 1, with the four C-PSPP subdomains in the equation R² = .17, F(4, 77) = 4.06, p<0.01. After step 2 with physical self-worth added to the prediction R² did not

increase significantly. After step 3 with PIP (perceived importance) added to the prediction, $R^2 = .18$, $F(6, 75) = 2.84$, $p = 0.01$. After step 4 (when the peer and parental sport socialisation variables were added together to the prediction) with all IVs in the equation, $R = .52$, $F(8, 73) = 3.54$, $p < .01$. In this analysis three IVs made *independent* significant contributions to the prediction of participation, CONDITION, ($t = 2.99$, $p < 0.01$), STRENGTH ($t = 1.99$, $p < 0.05$) and PaSSI ($t = 2.94$, $p < 0.01$). As with the younger boys, altogether 20% (adjusted) in the variability of physical activity participation rate was explained by scores on these subscales in older boys.

9.83 The prediction of physical activity participation in younger girls.

All possible IV's were entered into the regression in blocks in order of hypothesised theoretical importance. Only those IVs which correlated significantly with the physical activity participation rate (DV) were included in the equation.

Table 9.8311 shows the unstandardised regression coefficients (B), the standardised regression coefficients (β), the semipartial correlations (sr^2) and R , R^2 and the adjusted R^2 after entry of all IVs for the younger girls.

Table 9.831

Hierarchical Regression of Self and Social Perception Variables on Frequency of Physical Activity Participation: Girls 11-13 Years (n = 190)

VARIABLES	B	β	t	Sr ² (incremental)
SPORT CONDITION	-0.16 0.46	-0.12 0.34	3.3**	0.10
PeSSI (PEERS) PaSSI (PARENTS)	0.17 0.10	0.11 0.07		0.02
‘EFFORT’ ‘CHANGING’	0.11 -0.70	0.04 -0.21	-2.6**	0.04

R² = .16

(Adj.) R² = .12

R = .40

** p<0.01

After step 1, with the two C-PSPP subdomains of SPORT and CONDITION in the equation $R^2 = .10$, $F(2, 150) = 8.86$, $p<0.001$. After step 2 when the peer and parental sport socialisation variables were added together to the prediction, $R^2 = .12$, $F(4, 148) = 5.18$, $p = 0.01$. After step 3 (when the 'body constancy' subdomain variables were added together to the prediction) with all IVs in the equation, $R = .40$, $F(6, 146) = 4.73$, $p <.001$. In this analysis two IVs made independent significant contributions to

the prediction of participation, CONDITION, ($t = 3.35, p < 0.01$) and ‘changing’ ($t = -2.60, p < 0.01$). Altogether 12% (adjusted) in the variability of physical activity participation rate was explained by scores on these subscales in younger girls.

9.84 The prediction of physical activity participation in older girls.

All possible IV’s were entered into the regression in blocks in order of hypothesised theoretical importance. As with the previous analyses, only those IVs which correlated significantly with the physical activity participation rate (DV) were included in the prediction.

Table 9.841 shows the unstandardised regression coefficients (B), the standardised regression coefficients (β), the semipartial correlations (sr^2) and R, R^2 and the adjusted R^2 after entry of all IVs for the older girls.

Table 9.841

Hierarchical Regression of Self and Social Perception Variables on Frequency of Physical Activity Participation: Girls 14-18 Years (n = 106)

VARIABLES	B	β	Sr ² (incremental)
SPORT CONDITION BODY STRENGTH	0.07 -0.14 0.20 0.25	0.07 -0.13 0.19 0.20	0.18
PHYSICAL SELF-WORTH	0.06	0.06	0.01
P I P	0.13	0.15	0.01
PeSSI (PEERS) PaSSI (PARENTS)	-0.10 0.14	-0.08 0.13	0.01
‘EFFORT’	0.29	0.26	0.01

$R^2 = .22$
(Adj.) $R^2 = .15$
 $R = .47$

After step 1, with the four C-PSPP subdomains in the equation $R^2 = .18$, $F(4, 98) = 5.70$, $p < 0.01$. After step 2 with physical self-worth added to the prediction, $R^2 = .19$, $F(5,97) = 4.58$, $p < 0.001$. After step 3 with PIP (perceived importance) added to the

prediction, $R^2 = .20$, $F(6, 96) = 4.15$, $p < 0.01$. After step 4 when the peer and parental sport socialisation variables were added together to the prediction, $R^2 = .21$, $F(8, 94) = 3.28$, $p = 0.01$. After step 5 (when 'effort' was added to the prediction), with all IVs in the equation, $R = .47$, $F(9, 93) = 3.06$, $p < .01$. None of these IVs made an independent significant contribution to the prediction of participation. Altogether 15% (adjusted) in the variability of physical activity participation rate was explained by scores on these subscales in older girls.

9.85 The prediction of physical activity participation: the whole sample.

In this final hierarchical multiple regression the whole sample was included in one analysis. All possible IV's were entered into the regression in blocks in order of hypothesised theoretical importance starting with age and gender, this time entered as IVs. Table 9.851 shows the correlations between each of the IVs and the physical activity participation rate (DV). These correlations ranged from .18 ('effort') to .42 (CONDITION) and were all significant ($p < 0.01$). The 'body constancy' subdomain 'changing' variable was not significantly related to the DV when the whole sample was considered and was hence not included in the equation. Table 9.851 also shows the unstandardised regression coefficients (B), the standardised regression coefficients (β), the semipartial correlations (sr^2) and R , R^2 and the adjusted R^2 after entry of all IVs for the total sample.

Table 9.851

Hierarchical Regression of Self and Social Perception Variables on Frequency of Physical Activity Participation (Total Sample)

VARIABLES	FREQUENCY OF PARTICIPATION (DV)	B	β	t	Sr ² (incremental)
	AGE	-0.56	-0.14	-3.3**	0.16
	SEX	-2.11	-0.17	-3.9**	
Sport Condition	0.39	-0.007	-0.005	3.8** 1.9*	0.10
Body	0.42	0.35	0.23		
Strength	0.31	0.05	0.04		
	0.37	0.015	0.10		
Physical Self-Worth	0.34	-0.10	-0.07		0.001
Global Self-Esteem	0.26	0.03	0.02		
P I P	0.33	0.12	0.09		0.007
PeSSI (Peers)	0.35	0.07	0.64		0.01
PaSSI (Parents)	0.28	0.06	0.07		
‘Effort’	0.18	-0.14	-0.05		0.002

R² = .28
(Adj.) R² = .26
R = .53

* p<0.05
** p<0.01

R was significantly different from zero at the end of each step. After step 1, with the age and gender in the equation $R^2 = .16$, $F(2, 471) = 44.74$, $p < 0.001$. After step 2 with the four C-PSPP subdomains added to the prediction, $R^2 = .267$, $F(6, 467) = 28.43$ $p < 0.001$. After step 3 with physical self-worth and global self-esteem added to the prediction the incremental sr^2 was only very marginal but significantly contributed to the prediction, $R^2 = .268$, $F(8, 465) = 21.32$, $p < 0.001$. After step 4 when PIP (perceived importance) was added to the prediction again the incremental sr^2 was very minimal but also made a significant contribution, $R^2 = .275$, $F(9, 464) = 19.61$, $p = 0.001$. After step 5 when the peer and parental subdomains were added together to the prediction, $R^2 = .278$, $F(11, 464) = 16.19$, $p = 0.001$.

After the final step (when 'effort' was added to the prediction), with all IVs in the equation, $R = .53$, $F(12, 461) = 14.95$, $p < .001$. Both age and gender as predictors made *independent* significant contributions to the prediction of participation, age ($t = -3.3$, $p < 0.01$) and gender ($t = -3.9$, $p < 0.01$). There were also significant *independent* contributions made by the IVs CONDITION ($t = 3.8$, $p < 0.01$) and STRENGTH ($t = 1.9$, $p < 0.05$). Altogether 26% (adjusted) in the variability of physical activity participation rate was explained by scores on these subscales for the whole sample.

9.9 Free responses.

Participants were asked to respond freely to the statement “what do you feel about sport and exercise? Please use this space to write (or draw) how you think about yourself, your family and friends and sport”. The total number of pupils who provided a written response or drawing was calculated. There was an encouraging commitment to this stage of the survey whereby 119 boys (40% of boys) and 238 girls (77.7% of girls) provided a written response and a further 73 boys (24.5% of boys) and 17 girls (5.5% of girls) completed a drawing only or drawing with caption/written response. The remaining included total non-response ($n = 86$, 14.2% of total sample), drawings or written responses that were indecipherable or evidently not relevant ($n = 52$, 8.6% of total sample) and spoilt papers ($n = 19$, 3.15% of total sample).

It is beyond the current scope of this study to provide a fully rigorous analysis of the data provided from the free responses. However these responses made an important contribution to the quantitative data collection and will be used illustratively in the discussion. A preliminary descriptive account of the free responses, obtained from the young women in the sample, has been presented elsewhere (Bromnick, 1995). A copy of the summary of this paper is in appendix 4 (pg. 382).

Chapter 10

Discussion

10.1 Introduction.

Sport, in its various guises, is a pervasive part of most cultures, to escape entirely from it is virtually impossible. Young people become introduced to the world of sport at an early stage in their lifespan. Many become participants at some level through school sport or physical education programmes, as well as out of school or community projects. Co-participants may be friends or peers and much sport for young people is played with family members. Some parents may not play sport themselves, or even with their children but may vicariously enjoy sport through their children's activities. Young people not only participate in organised sporting activities. Many engage in leisure or recreational pursuits, often becoming a supporter or fan of different sporting teams. Some will chose to professionally enter the world of sport.

The need for this current study stemmed from the concern about physical fitness and activity levels in adolescence, with particular emphasis on the oft-reported decline in participation during this developmental transition. Attention moved away from promoting sport *per se* towards health-related physical activity. It is hoped here that methods and models from the field of Psychology have helped provide a further understanding of the current patterns of physical activity participation in British young people, as well as providing an insight into some of the factors which characterise or

contribute to individual differences in physical activity. From this, effective intervention can be planned, where necessary, to ensure that young people have a fit and healthy adolescence and sustain the skills and interest required to become active adults and parents.

There has been an acknowledged need to move away from purely descriptive accounts of the reasons for sport/ participation motivation, towards theoretically based and conceptually comprehensive methodologies (Rodgers and Brawley, 1991). This study has attempted to be both grounded in contemporary theories but also descriptively rich.

In this section an overview of the results from this study will be provided together with discussion of the main findings. Methodological limitations and theoretical considerations will be addressed. Implications from these findings for intervention and future research will be given. Throughout this section the contribution of this thesis will be evaluated and linked to work reviewed in earlier sections.

10.12 Overview of results.

The initial phase of the data analysis concentrated on examining participation patterns within the sample, from the 21 activities (plus 'others') listed on the self-report physical activity record. The patterns that were shown tended to fall along gendered lines. Larger proportions of girls than boys reporting taking part in only 4 of the listed

activities, namely netball, aerobics, dance and yoga. These could all be considered ‘feminine’ stereotypical activities. 6 of the activities were ‘gender neutral’ attracting equal proportion reporting participation namely volleyball, badminton, hockey, swimming and ice skating. Small and roughly equal proportions of boys and girls also reported weight/power lifting as one of their activities. Greater proportions of boys than girls reported having participated in the remaining 11 activities.

Some pupils did report participating in activities that weren’t typical for their gender. For example 22 girls (7.43%) reported taking part in rugby, which was not offered formally to girls at any of the schools in the sample and 17 (6.11%) boys reported taking part in dance, not offered formally to boys at any of the sample schools. The written statements from the qualitative phase of data collection revealed that some of the girls who reported high levels of participation, especially in non female stereotyped activities, were themselves aware of breaking social norms and expectations.

“I like taking part in sports, esp. football and basketball. I don’t play sports with my friends at school, I play with the people (who are the same age as me) who live in my street. We have a sort of league in football and basketball.

P.S. I support Liverpool and the London Monarchs, and don’t forget I’m a girl”.

Female, age 15.

“I’m sports crazy and my friends think I’m weird! They only do football if they really have to, but I like to play all the time, so I kick around with the boys. My mum says I am tomboy.”

Female, aged 14.

Popularity of each activity was considered for boys and girls in each age group, determined by the single highest percentages reporting taking part. Football led the way consistently for boys up until the sixth-form, reflecting the prevalent feature that this sporting activity has in most young men's lives. Many written statements from the boys attested to the importance of football. For example

"I feel sport is the best thing I do. It is my hobby. I play football with my brother everyday and I train with my team once a week on Fridays. I play a lot of cricket and sometimes golf but I'm not very good at it. My favourite sport is football. I play nearly every night for about 3 to 4 hours a day with my friends."

Male, aged 11.

"I wish there was more football in the school because every Wednesday I have football training and I really like it."

Male, aged 13.

The relatively small sample of sixth-form boys indicated that weight/training and exercises were the most popular activities for them. Only tentative conclusions can be drawn from such a small sample but it seemed that when the opportunity to play sports, such as football ceased, in line with school PE ceasing to be mandatory, older boys turned towards individual strength/muscle building activities.

The most popular physical activities for girls tended to be neither sporting activities nor even activities included within school sport programmes. Instead they tended toward stamina or fitness activities, such as swimming and cycling. This suggests that

although girls may play sport in school, unlike most of the boys, many do not chose these activities out of school. Ice skating was the somewhat surprising most popular physical activity for the very youngest girls, perhaps reflecting the local opportunity for this activity in the area from which the sample was drawn. Hendry et al. (1993) have described the lack of organised sport for young women outside school. In their important study of young people's leisure and lifestyle (YPLL, 1991) only one third of those young women who played competitive team games did so out of school. Hendry et al. (1993) did not view the sports activities in schools played by girls as necessarily a positive thing, describing this as reflecting "the coercion of females into male formulations of sport (competition and the 'team' game) within the school setting" (Hendry et al. 1993, pg. 62). Some young women in this sample expressed an active dislike of competitive team games played at school.

"I am not very fit at all. I have not got much stamina and I would like to be fitter and I'm thinking about doing swimming and running each week. I hate football, rugby etc. and I just don't have any motivation when it comes to kicking a ball around a field. What really puts me off is the attitude of some of the boys, especially in my class. When trying to play football for instance, well not really trying, these horrid pigs run around and screech at you if you miss the ball or something. If I'm not even trying I don't mind but when I am it really annoys me. But sports is supposed to be fun and I just don't enjoy it."

Female, age 13 years.

“I do not find any sport interesting (at least not competitive sports) but I do enjoy exercise. I prefer to work at my own pace rather than other people’s so I prefer aerobics and swimming etc. because it means I can do as much or as little as I like. It helps that a lot of my friends are not particularly interested in very competitive sports because it tends to make it easier and less of an effort when I’m with people I am relaxed with.”

Female, age 17 years.

When each of the 21 listed activities were considered separately, analyses showed that for none of the activities did the girls report a significantly greater mean frequency of participation than the boys. Overall, using a composite variable of frequency of participation (with the very highest scores statistically moderated), boys therefore also showed higher levels of participation. There was downward trend with age amongst both the sexes. With regards to the concern over participation levels in young people, the results from this study showed that the vast majority of *both* boys and girls throughout this sample *did* report taking part in at least one or more of the listed (or ‘other’) activities during the four weeks prior to testing. Even for the oldest pupils in this sample the mean frequency of participation was above the nationally recommended level for a healthy lifestyle of three times a week.

There were high correlations between reported frequency, intensity and duration of activity suggesting that most pupils in this sample took part in some form of sport or exercise at a level sufficient to accrue the health-related benefits associated with participation. The reason(s) behind non-participation for the small percentage (3.82%) of the sample who indicated that they had done no physical activity at all can not be

ascertained. It is proposed that this was due to illness or injury rather than a wilful abstinence.

The next stage of the data analysis was to provide an evaluation of the Physical Self Perception Profile (PSPP) provided by Fox (1990). Since the development of this instrument it has grown in use and has been validated in different contexts and subgroups (e.g. Page et al. 1993). Its use in exercise settings has been advocated not only by its author but also by other notable scholars in this area of research such as Sonstroem. Marsh et al. (1994) praised the psychometric development of the PSPP, suggesting that the rigorous research by Fox (1990) was exemplary, but at the same time stating disappointment that more validation work had not been published since the development of the instrument.

The theoretical underpinning of the PSPP suggested that the subdomains should relate to sport and exercise participation. In this study the C-PSPP (the children's version, amended for use by Whitehead, 1995) was adopted with three main objectives. Firstly, to explore the psychometric properties of the questionnaire on a British adolescent population; secondly as a tool for examining the changes that may occur in physical self-perceptions throughout adolescence, and thirdly to assess the contribution of the PSPP variables in the understanding of individual differences in physical activity participation in this sample of British young people.

Results from this section of the study will be discussed and compared with the findings from Whitehead (1995), Biddle et al. (1993) who used the C-PSPP with American and

British young people respectively; from Page et al. (1993) who attempted to cross-culturally validate the PSPP with a sample of British college students; as well as the original preliminary validation studies of Fox and Corbin (1989) and Fox (1990).

Whitehead (1995) produced results from the C-PSPP (in the USA) which generally replicated Fox and Corbin's (1989) original study and further support was gained by Page et al. (1993) with British college students. Biddle et al. (1993) were rather less convinced by their results from the C-PSPP with their sample of British adolescents, the sample which is most similar to the one tested in this study.

The results from *this* study do however lend further support to the use of the PSPP with a British adolescent population. The factor structures which were produced from the four C-PSPP subdomains, with this data set, were clearer than those produced from Biddle et al. (1993) (although the accumulative percentage variance accounted for was generally lower). There were minimal cross loadings of items for both boys and girls and high alpha reliability coefficients for each of the subscales. When four factors were forced, again a clearer factor solution was produced than Biddle et al. (1993) with both BODY (body attractiveness) and STRENGTH (physical strength) factors clearly confirmed in both boys and girls. However, as with Biddle et al. (1993), there was some overlap between the SPORT (sport and athletic competence) and CONDITION (physical condition) factors. The same conclusion can hence be suggested that

“.. adolescents find it difficult to differentiate sport from fitness and exercise, but may be thinking more in terms of sport in association with either participation (a ‘process’ orientation) or with physical fitness (a ‘product’ or ‘outcome’ orientation).

(Biddle et al. 1993, pp. 99-100)

This overlap between sport and athletic competence and physical condition was more pronounced with the boys than the girls in this sample. This suggests that girls were more able to differentiate sport from fitness/exercise and the process from the product of physical activity. This same concern about the overlap on the physical condition scale was also found in a study by Marsh et al. (1994) in a sample of Australian high school children. When compared to the Physical Self-Concept (PSC) scale (Richards, 1988) and the Physical Self-Description Questionnaire (Marsh and Redmayne, 1994) the PSPP was shown to have the weakest psychometric properties.

West (1991) advised that the table of correlations following oblique rotation in factor analysis should be examined and if they are below a suggested cut-off point of 0.2 then an orthogonal (varimax) rotation can be ‘safely’ conducted. Biddle et al. (1993) carried out factor analysis using oblique (oblimin) rotations in each case. From a theoretical and statistical point of view this was justified, as the factors were likely to have been correlated and were therefore not orthogonal. Whitehead (1991) did not distinguish between the boys and girls in his sample and chose a varimax rotation. This produced high loadings on the hypothesised factors. The analysis was repeated for this data set using a varimax rotation. This showed further support for the factor structure of the C-PSPP, with only one of the physical condition items cross loading on the sport and athletic competence factor.

Biddle et al. (1993) concluded that there was no support provided for the C-PSPP four subdomain structure of physical self-worth in British children and adolescents. Logical reasons were given for this such as the interaction between cultural (American versus British) and developmental factors, as well as the theoretically expected relatively poor differentiation of the 'self' in youth. Evidence here was somewhat to the contrary. It may be that discrete, yet important, differences between Whitehead (1995) and Biddle et al. (1993) in the type of factor rotation used, did in part account for the different factor structures reported. There may well be differences in the way young people in America and Britain view their physical selves. The cultural norms and expectations regarding sport, fitness and body image may differ as Biddle et al. (1993) have suggested, but it is important not to exaggerate differences based on national stereotypes. Page et al. (1993) did, in fact, manage to replicate the factor structure found with American students with British students. It is likely that there are as many differences within a cultural group, such as British young people, as there when compared to others.

As with other studies using the PSPP or C-PSPP, the proposed hierarchical structure of the physical self-perceptions was also generally supported in this study. Physical self-worth seems to act as an effective mediator between the subdomains and global self-esteem, with the exception of sport and athletic competence in the boys and body attractiveness in the younger girls. There were some additionally interesting findings upon examination of the subscale intercorrelations. Along gender stereotyped lines, for the boys, body attractiveness was highly related to physical strength ($r = .72$,

$p < 0.001$), but this was not a significant correlation for the girls. These findings lend empirical support to the work reviewed earlier, for example Davies and Cowles (1991), that the sociocultural pressure is on women to look thin and toned and for men to attempt to establish a mesomorphic 'ideal'. The following are two contrasting written comments, from a female and a male pupil both aged 13 years, to exemplify this point.

"I think I am good at most sport and I want to keep my body fit and lose weight, so I exercise every night. So I like some exercises and sport, so it's important to exercise so your body looks good and you feel good and you are confident to go out in tight things."

Female, age 13.

"I am too skinny and I would like to have more muscles and strength on my body. I am really good at running and reasonable at sport".

Male, age 13.

For some young people a negative self-appraisal of body attractiveness may be associated with a reluctance to be involved in optional physical activities. For other young people it may not be related at all. As thinness is the beauty ideal for women in this culture, they may choose dietary restraint rather than exercise to change their looks and physical self-perceptions. Some young people appeared to make a trade off between their eating and sporting behaviours.

“I like sports, they keep me fit and shaped up also. I love chips which I know aren’t good for me but the more sports I do the more the fatty foods wear off.”

Male, age 11.

The word ‘fit’ is used colloquially by this sample of young people as an adjective to describe another person’s physical attractiveness. The word is most commonly used by young men to describe young women who were thin and or looked toned. For a number of the older girls there was indication that a sense of body dissatisfaction may be a direct motivator to participate. The motivation was to *appear* fit rather than necessarily to *be* fit.

“I am not very fit at all really, but I do regular exercises such as sit-ups to keep (well try to keep) my body in shape. My friends say that I have a good figure and that I have nothing to worry about but I don’t like it- I want to be thinner”.

Female, age 17.

This is a similar suggestion to the findings from Sonstroem et al.’s (1994) study of adult women, for whom participation correlated significantly with a negative evaluation of their bodies. The processes may be quite different for males and females, as Davies and Cowles (1991) have shown that greater body satisfaction in young males was associated with an increased level of exercise participation and an increased body focus, a variable that was also associated with increased levels of exercise.

The results from both the quantitative and qualitative data suggested that there was no simple relationship between perceived body attractiveness and levels of physical activity involvement.

“I hate my body completely and desperately want to lose weight. I am not really fat. I am just too fat for my liking. I would do any sort of exercise which would improve my figure. I hate summer because I cannot wear a big coat to cover myself up. I used to do a very vigorous 35 minutes aerobic exercise video. I did this for about a year but then decided it made me too muscley and that made me look big. So now I do a callanetics video every day but usually only 5 times a week. My family do not exercise a great deal but my mum travels around quite a bit on her bike, so she isn't unfit. None of my friends really exercise but I have one or two who do and I go to aerobics with. All my friends have a paranoia about their bodies even the really thin ones but they do not exercise. They think that I am silly for thinking I am fat but I know I am so it doesn't matter what they say. I just wish I could find some exercise which would help me get a nice, fit body.”

Female, age 17.

Some of the sample participants wrote directly about the pressure they experienced to look good.

“My family is quite sporty but my friends and I only take part in things that are fun, e.g. aerobics. I think there is a lot less pressure on older teenagers to take part in sports than when we were at school. I do think however that there is enormous pressure to look good and have thin, toned bodies, and my friends and I are all very unhappy with our bodies. In some cases there is no reason at all.”

Female, age 16.

The intricacies of the relationship between perceived body attractiveness and sport and exercise participation may be different between boys and girls and also between the *type* rather than *frequency* of participation. The following statement is from a 13 year old boy. He shows a sense of body dissatisfaction. There are some activities that he avoids because of this, but he was nonetheless highly active.

“I don't think that I have a physically good looking body. I think it is very important to keep fit as possible. I like playing all sports. My favourite sports are cycling, rugby, badminton and cricket. My family don't really care about keeping fit. I weight train, sit-ups and row with a rowing machine and do press ups every day. I don't like going swimming because I get teased at what my body looks like.”

Male, age 13.

Although many of these findings have supported the stereotype of bodily concern in adolescence, some young people rejected this, challenging the author for conducting a survey which asked them to focus on their bodies and physical appearance.

“Yes, I know you're thanking me (for taking part in the study), but the first part of the questionnaire asked me about 15 times what I thought of my physical appearance.

.... I don't have the best figure, I'm a bit podgy. I like my face a lot. MY PHYSICAL APPEARANCE I CAN LIVE WITH. WHAT DO YOU THINK?”

Female, age 13.

The results also showed very high correlations between physical self-worth and body attractiveness, in particular for the older girls ($r = .74, p < 0.001$). When a multiple regression analysis was conducted using the four C-PSPP subdomains as IVs to

explain the variance in physical self-worth, body attractiveness alone accounted for 54% of the variance (out of a total 72.2% explained) with this section of the sample. These high correlations between the two variables were similar to Fox and Corbin (1989) who found correlations of .71 for females and .74 for males, although Biddle et al. (1993) showed slightly lower correlations of .68 (from sample mean age 12.2 years) and .62 (from sample mean age 14.88 years). Sonstroem et al. (1992) have also revealed this overlap for the scales of physical self-worth and body attractiveness in the PSPP, with their sample of older adults (mean age 44.1 years). They suggested some redundancy between these two constructs and recommended that future investigations may be advised not to employ both subscales together with adults over the age of 30 years. The same recommendation is appropriate for further research with older teenage girls.

With this sample, sport and athletic competence and body attractiveness were shown to be the important predictors of physical self-worth, less so for physical strength and physical condition. Although, as already shown there were some high inter subscale correlations which would have weakened the *independent* predictive effects of these subscales in multiple regression analyses. Biddle et al. (1993) on the other hand found physical self-worth could be predicted from all four C-PSPP subdomains in boys, with physical condition singly explaining the greater proportion of variance. For the girls in their sample, sport and athletic competence did not predict physical self-worth, whereas it was an important predictor for both older and younger girls (as well as boys) in this sample. This difference may be due in part to procedural differences within the methodology of the two studies, which will be discussed in section 10.3.

One of the aims of the current study was to assess possible gender differences in physical self-perceptions (that were thought to be related to physical activity participation) and to attempt to detect changes in these perceptions that may occur during the period of adolescence. The C-PSPP was also adopted for this purpose.

There were highly significant gender differences found for each of the four C-PSPP subdomains as well as physical self-worth and global self-esteem, with the mean scores from the boys consistently higher than the girls. This replicates other work in this area, reviewed earlier. For each of these the mean scores the girls tended to be lower than the mathematically expected midpoint whereas the mean scores for the boys tended to be above the expected midpoint. Although norms were not provided for comparison purposes, these mean scores for the girls were not so sufficiently low as to have created cause for concern over their mental well-being. These gender differences may have arisen because the young women based their self-perceptions of their physical competencies on traditionally 'masculine' criteria. The review of literature showed that when young women's perceived competence was ascertained from performance on a familiar, 'feminine' type task (in this case cheerleading) their self-confidence in their ability was higher than males (Clifton and Gill, 1994). This important work of Clifton and Gill (1994) is worthy of replication in a young British sample, perhaps using netball or synchronised swimming, although it may not be possible to find a physical activity with such a strong female stereotype as cheerleading from within the British culture.

There was no trend with age found with this sample, with the scores on each of the C-PSPP domains and subdomains remaining relatively constant across the sample ages. This again supports findings from other studies, e.g. Alsaker and Olweus (1992), which have shown the stability of self-perceptions in adolescence. Despite an emphasis in the current British PE curriculum on *developing* physical competence, the self-perceptions that these young people held about their physical competence did not appear to change, nor indeed improve, with age and experience in secondary school. It may be that this lack of *improved* perceived physical competence corresponds to the steady decline in sport and exercise participation rates during adolescence. It seems from this data that the gender differences that are apparent throughout adolescence are set in motion early in the lifespan, during primary school years or before.

There is little known work published that has used the Perceived Importance Profile (PIP), also developed by Fox (1990) to be used in conjunction with the PSPP. Hence this study contributes to the existing literature, following the administration of this instrument to a British adolescent sample. The PIP was originally based on the well-established work of Harter (1986), who suggested that the importance attached to competence would have bearing on an individual's self-esteem. Fox (1990) conceptualised the PIP scores to act as a filter or screen between the PSPP subdomains and the higher order domains of physical self-worth and global self-esteem.

In this sample the means and standard deviations for the PIP items showed adequate properties. However it was disappointing to find that some subscale items did not always highly correlate together and many items, whilst correlating significantly with

the same subscale 'partner' item, showed higher correlations with other subscale items. In the original work of Fox (1990), same subscale correlations ranged from .56 to .84. This was not replicated here. In particular there were poor same subscale correlations with the two CONDIMP (importance of physical condition) items.

Consequently, exploratory factor analysis was not able to produce the intended four factor solution for these 8 items established by Fox (1990). Although even in the original exploration of data the factor structure was unclear with males. Overall, there appeared to be a general importance factor rather than separate domain-specific factors. Whitehead (1995) used the PIP with his sample of American young people and found only one factor with an eigenvalue greater than one. There did however appear to be some differentiation made by the older girls in this sample, whereby the BODYIMP (importance of body attractiveness) items factored out separately. It has already been shown that body attractiveness is an important constituent of physical self-worth in these older teenage girls and it seems that they view the importance of body attractiveness as a construct separate from the more sport/fitness importance related constructs.

One general factor of perceived importance was constructed which revealed scores for boys to be higher than that for girls. Physical competency was shown from the C-PSPP subdomain mean scores to be higher for boys than girls, as indeed was the importance they placed on those competencies. These perceived importance scores remained consistently high for boys across the age groups in the sample, but showed a general downward trend with age for the girls. So for the girls, although their

perceived physical competence remained at consistent levels across the ages, the importance that they placed on that competence dwindled by age. This was shown, in part, to account for the pattern of decline in participation rate in girls.

Although there was some caution in separating out the PIP subscales to calculate discrepancies between competence and importance, this was done to replicate the work of Fox (1990) and Whitehead (1995). Overall, only the minority of pupils showed a discrepancy. The current study generally added further support for Harter's (1985) discounting hypothesis, with physical self-worth and global self-esteem lowered in those pupils who were unable to downrate the importance of competence. This was shown particularly with the older girls in the sample for whom the majority was unable to discount the importance of body attractiveness, which in turn related to a lowered sense of physical self-worth and global self-esteem. On average, the boys had higher perceived importance scores as well as higher adequacy/competence scores than the girls. Boys may be more able or willing to keep their importance-competence perceptions close together. This cognitive strategy may, in part, account for the finding that physical self-worth and global self-esteem of boys were higher on average than the girls.

The peer and parental sport socialisation influence scales were specially constructed for this study. The items were all theoretically driven and empirically based.

Cronbach's alpha for the parental sport socialisation influence scale was .71 and just above the desirable minimum alpha coefficient of .70 (Nunnally, 1978). For the peer sport socialisation scale the alpha was .68 and hence just below the desirable minimum.

3 items were deleted from each of the scales to maximise the alpha reliability and improve the internal consistency of the scales, leaving 7 items remaining in each. However, it was not intended that the items in the scales would measure a unitary construct. Rather the scales, with many items mirrored so comparisons could be made, included a composition of salient constructs such as encouragement, feedback and support for physical activity. Overall, the psychometric properties of the two scales were deemed satisfactory, providing an important original contribution to research in this area. These are recommended for further investigations and validation studies.

There were significant gender differences shown from scores on the peer sport socialisation influence scale. As with the C-PSPP subdomains, scores were, on average, higher for boys than for girls. With regards to peers/friends, the items that distinguished boys from girls were those that related to shared enjoyment of, and investment in, physical activity. The boys were also more likely than the girls to indicate that they played sports because that is what their friends like to do; that they have more fun playing sports with friends than anything else; and that they were asked by peers and friends to join with their sporting activities. For the boys there was no significant trend with age suggesting that the encouragement from friends to engage in sporting activities persists throughout adolescence and that it has a prominent place as a peer group activity. This was not the case for the girls, for whom peer sport socialisation influence was much lower in the older age groups. This is not to say that girls are not influenced by their friends and peers, even in late adolescence, but that the direction of group preferred activity shifted away from sports and games.

There was no difference found between the boys and girls reported mean levels of parental encouragement and influence on sporting activities. This is an interesting finding as the literature to date has suggested that boys experience higher levels of sport socialisation by parents than girls (e.g. Hendry et al. 1993). There are a number of possible interpretations that can be proffered to account for this. For example, that the public health message, which advertises the health-related side of physical activities, has been heard by parents and they have realised the benefits of encouraging participation in both male and female offspring. An alternative explanation may be that the growth in 'feminine' stereotype physical activities, such as aerobics, has led to more mothers participating and acting as role models for their female children.

There was however a significant trend, amongst both boys and girls, towards lower levels of reported parental sport socialisation influence across the adolescent years. The findings tended to support the notion that sport socialisation is a tripartite phenomena comprising of socialisation *into* sport, *within* sport and *out* of sport (Brustad, 1992a). The younger pupils were more likely to indicate that their parents often played sports and games with them; thought it was important for their child to be one of the best at sport; to get involved in sports, and their parents were themselves physically fit. This suggests that in the early stages of adolescence families may participate together in physical activities. Parents place importance on their children's participation and achievement during this time. This study produced an additionally interesting and novel finding. Most studies have tended to assume that parental support is for physical activities in school or outside the home, in the context of leisure

or recreation. Many of the free responses from the pupils indicated that their parents (mostly mothers) may support their child's exercise *within* the home.

"If I have any spare time I will usually do sit-ups and press-ups etc. at home."

Female, age 15.

"I will only do aerobics on my own... with my mum's Rosemary Conley workout video. I have to shut the living room curtains!".

Female, age 17.

"I do weights at home in my room, every night. My mum doesn't mind as long as I don't make too much noise".

Male, age 14.

A number of the younger pupils stated that they viewed sport and physical activity as an enjoyable activity to do with the family. In some cases this was seen not only for the health-related benefits, but that shared activities could promote togetherness in the family. It might be that the family that plays together, stays together.

"You need sport to keep you fit. Families need to do it also. Sport can get you more healthy and bring you closer to your family (if you do it with your family)."

Female, age 12.

As a young person moves through adolescence, activities that are seen as important by the young person and/or parent may turn away from those which are physical or

sporting. The younger pupils in this study also perceived their parents as being more physically fit than the older pupils did. This may be that the parent's own physical fitness is maintained when they play with their children during childhood and early adolescence and might reduce when that ceases. Further evidence that the value placed on physical activities is shifted onto other activities was found in the written statements. These suggested that a number of young people turn towards academic work for example, at the loss of their physical activity involvement, and that this may be encouraged or supported by parents.

"I think I should exercise more than I do but after school I always feel tired and at the weekends there is homework or other commitments".

Female, age 13.

"....My father is very interested in sport, likewise my brother is good at them, but my mother couldn't care less. I would like to do more sport, aerobics and yoga appeal to me, but I don't have the time any more for sport because I won't allow it to overtake my homework or more mind-orientated activities".

Female, age 14.

"Sport isn't everything and I don't think I am that good looking. I also think that keeping my mind in shape is just as important."

Male, age 13.

This findings offer support to the work of Tappe et al. (1990) and Eccles and Harold (1991) who also found that young women, in particular, often move away from

valuing activities in the physical domain. In this study, pupils indicated that it was not an easy choice to have made and often stated it with some regret.

“Because I am at 6th form college physical activities is optional so not essential. So I have opted out of physical activities and chosen a mental activity instead. This has made me lazy and I often regret this. It is a difference to me as in my secondary school physical activities were compulsory.”

Female, age 16.

The results showed that the peer sport socialisation influence was, on average, greater than parental sport socialisation influence in this sample, with the exception of the younger girls, for whom there was no significant perceived difference in the level of influence for either source.

A further scale was designed and used in this study to measure the disruption/inconvenience that may be associated with physical activity participation. The original conceptualisation of this factor was derived from the suggestion that some individuals do not welcome having to change clothes to exercise or to shower afterwards. Such individuals prefer to attempt to keep their body at an ‘equilibrium’ and don’t like getting hot and sweaty when exercising. Hence this factor was originally termed ‘body-constancy’. Evidence that these variables may mitigate against participation were supported by some empirical work, in particular with young women, such as Scraton (1989), Van Wersch et al. (1990) and Orme (1991).

The results from this study were only moderately successful in establishing a scale to empirically investigate this. Rather than there being one general factor of ‘body-

constancy', factor analytic explorations revealed two factors, which accounted for 56% of the variance in 'body-constancy'. Hence this proposed general factor was split into two factors labelled 'effort' and 'changing'. The first of these contained three items and related to the inconvenience and disruption associated with physical activity. The second related specifically to showering and changing clothes and contained two items. One of the original 'body-constancy' items, 'I would like to change my body' was excluded from further use due to possible ambiguity in the phrasing and interpretation of this item. The reliability of the 'effort' subscale was .68 (Cronbach's alpha) and just below the desirable minimum of .70 (Nunnally, 1978). The 'changing' subscale produced an alpha coefficient of only .48. This is less than satisfactory although it appears to have some content validity and was retained for further use. The small number of items in each subscale probably contributed to its instability (Tabachnick and Fidell, 1989).

Mean scores from both of the subscales tended to be above the expected mathematical midpoint and there was evidence of a 'ceiling' effect with some items. These items appeared to be worded such that generally high scores were obtained, which could be due to measurement error or be indicating that the effort and changing required for physical activity may not have been perceived as off-putting. Following this, these subscales were weaker than the others in discriminating between the pupils in this study. There were no clear patterns of differences either by gender or by age. There was however one particularly interesting result in that the 12 year old girls were most likely to report low scores on the two subscales, indicating higher levels of disturbance (or desire for 'body-constancy') associated with activity. It may that this is a critical

time for young women's psychosocial development, coinciding with the average age of the onset of puberty. They may be particularly embarrassed by changes to their body and by sensitive to the demands of compulsory physical activities and the PE environment.

"I am quite fat and I started doing aerobics for a while. I lost some weight but I could not continue for much longer. I want to lose weight but it is hard. I am embarrassed when we go swimming or do PE."

Female, age 12.

"I hate sports when you have to get changed, especially swimming, although I think my body's all right, I don't like to show it to people, so I need a changing room."

Female, age 13.

The final stage of the analysis of data provided a series of multiple regression analyses to attempt to predict physical activity participation. Because of the age and gender differences found throughout the sample the correlation and regression analyses were conducted for the boys and girls in the younger (11 to 13 years) and the older (14 to 18 years) age ranges. The analysis culminated in a hierarchical multiple regression, using both age and gender as IV predictors.

Criterion validity of the PSPP has been assessed in other studies using a variety of different dependent measures of actual or reported physical behaviours and a diversity of multivariate techniques. Hence only descriptive comparisons are afforded between studies. In the original validation of the PSPP, Fox (1990) was able to show that

PSPP subdomain scores could effectively discriminate between active and sedentary American college students, as well as successfully classifying the level of participation in the active subjects. Canonical function analysis by Fox (1990) also showed that the PSPP subdomain scores related to the students' degree of involvement in a variety of different types of physical activity. Sonstroem et al. (1992) included physical self-worth into the examination of criterion validity. Again the PSPP scores were able to accurately classify exercisers and non-exercisers in this sample of older adults, with the respective canonical correlation coefficients even larger than those reported by Fox (1990). Sonstroem et al. (1992) found that physical condition was the best predictor of exercise. As with Fox (1990), Sonstroem et al. (1992) showed that the PSPP subdomains were sensitive and sufficiently valid to also predict the degree of exercise involvement in their sample.

In a cross-cultural validation study of the PSPP with British college students Page et al. (1993) largely replicated the findings from the studies carried out with American participants. Hence they also showed the power of the PSPP to discriminate students who reported high or low exercise involvement. As with the American studies, physical condition subscale scores were the major contributor to the prediction of physical activity. In the only known other study to assess these constructs with British young people, Biddle et al. (1993) sampled a small group of 12 year old boys to assess criterion related validity of the C-PSPP. This was achieved by correlating the C-PSPP subdomain scores with performance from a 20 metre progressive shuttle run. Biddle et al. (1993) found that sport and athletic competence, physical condition and physical

self-worth were all significantly (and positively) related to the performance measure and offered their results as further evidence to attest to the validity of the profile.

In this study, the dependent measure of physical activity used for correlational and multiple regression analyses was a composite variable of the self-reported frequency of participation from 14 sports and stamina/fitness activities. Amongst the younger boys in this sample all of the C-PSPP subdomain scores, as well as physical self-worth and global self-esteem, were shown to be significantly (and positively) related to levels of participation. For the older boys, only physical condition and physical strength were significantly correlated with their participation rate. The older boys were less likely to participate in sporting activities than the younger boys. It appeared that their motivation to participate in physical activities was in part contingent on the desire to improve or maintain fitness rather than develop sporting competence *per se*.

Although, if muscular development was important for the older boys, it may have been expected that body attractiveness would have correlated with participation, but this was not the case.

For the younger girls the highest correlation with participation was the physical condition subscale. Otherwise, the only other self-perception variable to show a relationship with participation was the sport and athletic competence subdomain with a weak, albeit significant, positive correlation. Significant and positive correlations were shown between participation rate and the C-PSPP subdomains as well as physical self-worth in the older girls. This adds further support to the validity of the C-PSPP with this subsample.

It was only amongst the younger boys that global self-esteem was significantly related to physical activity participation. For the older boys and both age subgroups of girls there was no significant correlation between these two. Athletic status has consistently been shown to be an important determinant of peer group popularity in young adolescent boys (e.g. Weiss and Duncan, 1992). High levels of sport participation may have strongly contributed to their self-esteem. There was no significant trend towards lower global self-esteem in boys across the age groups, although the frequency of reported participation in sport and stamina/fitness activities did decline. Likewise for the girls, the decline in participation did not appear to correspond to any changes in global self-esteem, which, although was always at lower mean levels than that reported by boys, remained relatively constant across the ages. This further attests to complexities of self-esteem research, supporting the notion that global self-esteem is hierarchically organised and contingent upon competencies that are valued in different domains. There were no overall differences in the mean *level* of global self-esteem between the age groups but there appeared to be a change in the *composition* of self-esteem, which may well be different for boys and girls.

The results from the current study were also able to demonstrate significant relationships between peer and parental influences and frequency of participation rate. On the whole these were more moderate than the self-perception variables. It is likely that the influence from these socialising agents impacts at different or multiple levels. For example, the influence may be moderated indirectly through an individual's own physical self-perceptions or more directly, such as in shared or supported activity. For

the younger boys, there was a stronger relationship with peers than parents, further supporting the evidence that physical activity is an important peer group activity at this age and may in part be determined by fellow participants. The fact that they did not perceive their participation to be related to parental influence might reflect the drive towards perceived autonomy in adolescence and desire to create a 'youth culture' separate from adults.

The older boys represent an interesting subsample in this part of the discussion of results. Parental sport socialisation influence was not significantly correlated with the self-perception subdomains. However, when related directly to reported participation levels, the correlation between parental influence was higher than that from peers. This further attests to the complexities of these relationships and adds weight to the notion that the socialisation influences were not ubiquitous, but operated in different ways, at different levels, in different contexts. A possible explanation for these results may be that parents do not necessarily co-participate with older boys or offer the sort of encouragement that would relate directly to self-perceptions. Rather than the support given could be instrumental, such as financial contributions for participation in commercial leisure pursuits, 'ferrying' to events or the purchase of equipment/gear.

The results also showed the correlations between the two 'body-constancy' factors and frequency of participation. As would be predicted from the literature these were shown to be more saliently related to participation rate in girls rather than boys. In particular, the data from the younger girls suggested that, when the effort was seen as too great and the changing required was unwelcome, participation levels were lower.

For the older girls 'effort' was significantly correlated with participation, suggesting that this may differentiate high and low level participants. Having to change clothes or shower in association with physical activity was not related to participation in the older girls. As suggested earlier this might be due to them having overcome any potential embarrassment over changing and showering from early adolescence. Also, these feelings may be linked to the school PE environment. For girls in late adolescence, those that continue to be involved in physical activities may do this more in their leisure time and not shower or change as part of the activity, for example cycling to see a friend. Not liking changing or showering was also associated with participation levels in the younger boys as well, suggesting that those with lower levels of activity may also dislike this aspect of physical activity. As with the girls this was not a 'problem' in older adolescence.

Hierarchical multiple regression analyses were chosen as the appropriate multivariate data analyses for the attempts to predict participation levels with this sample. Other research in this area that have used the PSPP to predict physical activity has tended to use discriminant function analyses and reported canonical correlations (e.g Fox, 1990, Sonstroem et al. 1992, Page et al. 1993). However, the data from this study showed that even the lowest levels of reported participation were generally above minimally 'acceptable' levels. It was felt that it would be misleading to class pupils as 'low' or 'high' level participants for the purpose of statistical analysis.

Tabachnick and Fidell (1989) have advised that regression analysis is at its most powerful when a parsimonious set of IVs are used, so that each IV captures a

substantial and unique proportion of the variance in the DV scores. They also have suggested that ideally each IV should have a high correlation with the DV but should be uncorrelated with other IVs. This avoids the problems associated with multicollinearity (when inter-IV correlations are greater than .70). Theoretically it was expected, and statistically it was shown, that there were often strong relationships *between* the IVs used in this study. In many cases the correlations between IVs were greater than the individual IV correlations with the DV. Hence it was found that the independent segment of the variability in the frequency of participation (the DV in this case) ascribed to each IV was often low and the overall strength of the prediction was weakened because of this. The procedure recommended by Tabachnick and Fidell to remove suppressor variables was considered, but all IVs which correlated significantly with the participation DV were left in the equation. This was to allow for an optimum theoretical model to predict participation, even at the expense of the statistical solution.

Four hierarchical regression analyses were carried out for the boys and girls separately in the two age groups of younger (11 to 13 years) and older (14 to 18 years). For the two age groups of boys, in each case 20% (adjusted) of the variance in sport and fitness/stamina activity was predicted from scores on the self and social subdomain variables. The prediction was less strong for girls, the IVs predicting only 12% (adjusted) of the variance in younger girls and 15% (adjusted) in the older girls. However, gender tended to be an important discriminator between most the variables in this study, with scores from boys tending to be higher than girls throughout. This

may suggest that this analysis is ‘guilty’ of attempting to predict physical activity levels in girls based on male formulations of sport and exercise.

The final hierarchical regression analysis included the whole sample and used age and gender in this instance as IVs, along with the self and social perception variables. Age and gender both made significant *independent* contributions to the prediction of participation as well as two of the C-PSPP subdomains of physical condition and physical strength. Hierarchical techniques were selected so that the IVs could be entered in order of hypothesised theoretical (versus statistical) importance. Age and gender alone accounted for 16% of the variance in participation. In the next step the C-PSPP subdomains increased the amount of variance explained to slightly more than 26%. The remaining IVs all contributed significantly but very moderately to the percentage of variance that could be explained, assumed to be due to IV intercorrelations and shared variance. Although the socialisation scales contributed little more to the prediction than could be explained by ‘biological’ factors (e.g. age and sex) and the ‘psychological’ factors (e.g C-PSPP subdomain scores), these made an important contribution to the understanding of physical activity involvement from a theoretical and empirical viewpoint, even if that weight of that contribution was not fully ascertained statistically by this analysis. Altogether, 26% (adjusted) in the variability of sport and stamina/fitness activity participation rate was explained in this sample. This is satisfactory result offering further support to the use of the C-PSPP in British young people for predicting physical activity.

10.2 Discussion of main findings.

10.21 Reassessing the concern over physical activity levels during adolescence.

Adolescence can be thought of as a special developmental transition seeing a person through from dependency in childhood into autonomous adulthood and maturity. Part of the aim of 'successful' childhood and adolescence is to foster positive psychosocial and physical development in the individual so that holistic health is maximised in adulthood. In terms of lifestyle, the period of adolescence is a time when young people may be first introduced to alcohol, cigarettes, recreational drugs and sexual activity. Either the law or cultural/familial expectations try to act as a brake on these activities, so 'bad' or 'dangerous' habits are avoided, at least until the individual is viewed as being mature enough to take risks associated with lifestyle choices on their own. For many young people there is an increased tendency towards these behaviours during adolescence, coexisting with the adult-led attempts towards prohibition. Sport and exercise participation is also a lifestyle behaviour, but one which may have quite a different place in the life of an adolescent and negotiations with adults and 'society'. Here the tendency is to decline in involvement or drop out completely as an adolescent progresses towards adulthood (Stephens, 1987), this pattern of attrition from sport being especially marked in young women (Butcher, 1989). However, in both cases the move is towards adult norms. Sustained physical activity in adolescents is seen as desirable by adults who care for and about them, not only in promoting good psychosocial and physical health in young people, but ideally for inculcating a positive orientation towards maintaining habitual activity in adulthood.

Concerns have been raised over health-related fitness of young people, when attempts have been made to establish either the *process* (e.g. activity type and levels of involvement) or the *product* (e.g cardiovascular fitness) of their sport and exercise participation (e.g Armstrong, 1992). This study primarily focused on the process of participation rather than the product, following the review of literature which indicated that understanding the process was most important. It has been suggested that if the process is favourable, the products of physical activity will follow (e.g. Pangrazi, 1991).

The results from this study suggested that some redress to this concern may be warranted as absolute levels of self-reported participation were not excessively low in this sample of British young people. The mean figures for levels of participation for age group tended to be distributed normally, indicating that there were minorities of pupils at one end of distribution who were participating at very high levels and those at the other end whose participation was relatively lower. Although the trend towards lower levels of participation increased with age was replicated here, even the oldest pupils in the sample, on average, reported satisfactory minimal levels of involvement from a health-related perspective. The data indicated that the majority of pupils participated in some form of physical activity as part of their weekly routine. As PE was timetabled for approximately 2 hours per week in the sample schools, this participation was likely to be both as part of the school curriculum and also in leisure time. It is not known how encouraging the results from this study are in terms of promoting or maintaining health and a positive orientation towards activity, in

adolescence and beyond, as there is still further work to be done to ascertain the ideal minimum and maximum level and type of participation.

Biddle (1992a) may have underestimated younger children when he contested that they might not have the cognitive skills required to view health or fitness as goals for physical activity participation. It should hence be viewed as a very favourable finding that a number of participants in this study showed explicit awareness of the potential health benefits that are associated with physical activity and the importance of participating to promote health in adulthood. This was shown even in some of the very youngest pupils in this study.

“I think sport and exercise is very good. It is important to do exercise and sport, especially when you are a girl, your bones crumble, if you don’t do much. I want to be fit because I am afraid that my body would crumble”.

Female, age 11.

“PE is about keeping fit and it is important for when you grow older. You will have a happier life if you are fit. You will live a lot longer”.

Female, age 12.

“I think sport is very important in a young person’s life. To keep fit and healthy. It would help you through your life.”

Male, age 12.

Recently Roberts (1996) has provided a very important paper, independently reviewing the findings from three large scale surveys that looked at young people's involvement in sport and leisure in England in 1994. These studies were conducted by the Office of Population, Censuses and Surveys (OPSC) and have been reported by Mason (1995). The results from the current study on the frequency and diversity of participation were supported in large by the OPSC findings. Roberts (1996) suggested that the evidence from the recent OPSC investigations "disarms fears and forecasts of school sport in England being in decline" (Roberts, 1996, pg. 48). Nearly all of the pupils in the OPSC studies played sport in their leisure time. They reported participation in a wide range of physical and sporting activities, introduced during PE and played whilst at school. As with the current study, popular sports played outside of school were cycling and swimming for both boys and girls. The popularity of football for boys was also confirmed by the analysis by Roberts (1996) with over 55% of the 11 to 16 year old boys in the OPSC study playing regularly outside of school lessons.

Roberts (1996) reported that 35% of the young people (age 11 to 16 years) played sport out of school lesson times on five or more occasions per week during the school term time, 20% played for at least ten hours per week during term time and 33% had played for more than ten hours per week in the summer holidays. This adds further weight to Biddle's (1992) methodological recommendation that research needs to be conducted outside of the school term and environment. The concern over activity levels should not totally disappear with these encouraging results from OPSC. Roberts (1996) also reported that a minority were highly inactive, both relative to the norm of the sample and absolutely. There were over 4000 young people participating in the

OPSC research, but the size or percentage of these sedentary youth were regrettably not reported. From the OPSC studies, American reviews (e.g. Freedson and Rowland, 1992) and the current research, it seems that the concern about inactivity needs to be directed at a minority and not the majority of young people, as previously feared.

Roberts (1996) compared the OPSC results to data from previous participation records of previous years. Although the method for achieving this was not reported, his conclusion was very similar to that of the analysis of Corbin and Pangrazi (1992), discussed earlier, who presented evidence contrary to the suggestion that fitness and activity levels of American youth has declined over the years. Roberts (1996) stated that

“The past Golden Age when the mass of young people were heavily involved in physically active recreation is pure myth. In the 1990s, young people in Britain are playing more sport than at any time within living memory”. (Roberts, 1996, pg. 52).

Roberts (1996) suggested that the opportunity to play sport at locally provided sports centres, attributed in part to stemming the flow of drop out rate in the immediate post school years.

The OPSC surveys also revealed gender differences in patterns that support the current findings. Although the OPSC results showed a predominance of boys over girls in the numbers reporting playing football only, this gender difference was more stark in the current study, with greater proportions of boys than girls reporting participation in 11

of the 21 listed activities. Roberts (1996) reported that the gender difference in sport participation was most pronounced out of school, where the boys were much more likely to chose to participate in a physical or sporting activity than the girls. He suggested that attacks on school sport for instilling male values (Scruton, 1987) was not warranted and that schools should not bear the responsibility for the female's lower rates of out of school participation. Although there were gender differences in the way the PE environment was viewed, Roberts (1996) reported that girls were playing sport in equal amounts and variety in school lessons as the boys, but that they often chose to do other things out of school. As discussed, the free responses from the current study lend weight to this finding.

However, even if there are equal opportunities within the school curriculum, the differences in the experiences and perceptions of boys and girls may put some onus of the responsibility back onto schools, for girls liking sport less than boys on average and participating less when given the choice. Perhaps the tide is turning, but adult women in particular, often retrospectively report tremendously unpleasant experiences from school PE, which they report as having put them off sustaining involvement into adulthood (Drew, 1995).

Roberts (1996) contested that policy makers and schools are not blamed in the same way for children and adolescence turning away from Shakespeare and religion after leaving school, despite these subject's promotion in school. From a health-related perspective this is a weak line of argument. Sport and exercise can be seen as a vital component of preventing or modifying ill-health and diseases of adulthood.

Participation may occur in a leisure environment but the implications for a young person's health and development is far more important than the context. Health-related fitness is now a part of the PE curriculum, and that being the case, schools must have a responsibility to help avoid exposing pupils to negative experiences during PE. Part of any level of education is towards 'transferable skills', so that pupils take their learning with them into their next stage of learning or into life itself beyond school. This is particularly relevant in this context of sport and exercise, and schools should help ensure that young people have the skills and interest to participate thereafter. This is not to suggest that the onus of responsibility should be placed totally on the schools. Parents too have a responsibility, as do the young people themselves. Further research could be useful to examine at what point young people appear to take responsibility for their own health and development.

10.22 Measuring the importance of importance.

A theme running through this thesis has been that competencies that are valued, and hence are seen as important, may determine effort or motivation to participate in activities specific to that competency domain. When the perceived competency is low or absent attention is focused on other activities. The suggestion is that an individual chooses to do what they are good at and is good at what they chose to do, and that this may contribute to the individual's overall sense of self-worth or self-esteem. In the current study perceived importance of competence of four physical self-perception subdomains were measured, utilising Fox's (1990) Perceived Importance Profile (PIP), for the first time with a sample of British adolescents.

Recently Marsh (1994) has provided an empirical critique of theoretical models which aim to explain the relationships between specific components of physical self-concept, global physical self-concept and global self-esteem, including the work and theorising of Fox (1990) used as a basis for this study.

Marsh (1994) described how much the work in self-concept research has been based on the original ideas of William James (1890/1963). James was one of the first to posit that overall evaluations of the self may reflect appropriately weighted averages of self-perceptions in different domains. Negative feelings about the self were seen as being associated with not being able to downrate low competence in a domain thought to be important by an individual.

Marsh (1994) described how this approach, whereby self-perceptions are aggregated to form an overall evaluation of self-esteem, informed the seminal work of Rosenberg (1965) and Harter (1986), as well as some of Marsh's own earlier work (Marsh, 1990). This work in turn informed the test construction of Fox (1990).

Fox (1990) advocated what Marsh (1994) termed as an 'importance weighted average' model, with perceived importance acting as a filter in the hierarchical organisation between physical self-perception subdomains (for example, sport and athletic competence) and physical self-worth, and also between physical self-worth and global self-esteem.

Marsh (1994) was critical of Fox (1990) and Harter's (1986) theorising stating that the proposed discrepancy model was not consistent with the examples given by Fox (1990) himself. He suggested that Fox (1990) was influenced, in fact, by two models, the importance weighted average model as well as the actual/importance discrepancy model. Marsh (1994) proceeded with an empirical evaluation of this self-concept research to attempt to provide a clearer understanding of the processes involved. He found that the Harter/Fox model of actual-importance discrepancies was poorer than the simple unweighted average approach in predicting global physical self-concept. Marsh (1994) concluded that there was no strong evidence found to suggest using importance and perceived discrepancies, as the simple mean of the self-concept ratings were shown to have more explanatory power than discrepancy scores. He found no clear evidence to support the role of importance in Fox's (1990) hierarchical model. Some evidence for Marsh's (1994) theorising was supported in the current study. Post-hoc descriptive comparisons indicated that the relationships between the C-PSPP self-perception subdomain mean scores and physical self-worth/global self-esteem were generally stronger than the competence-importance discrepancy scores and the global self-constructs.

In the current study, as with Whitehead (1995), there was some evidence to support the filter system and data to support Harter's (1985) discounting hypothesis. However in both this study and the preliminary work of Whitehead (1995) the perceived importance items did not factor out into four separate subscales that could be related to each of the C-PSPP competence subdomains. The only real differentiation that participants could make was the older girls who differentiated the importance of body

attractiveness from the other importance subdomains. There was evidence here to support Fox (1990) and Harter (1985), as when these pupils were unable to discount the influence of low (body attractiveness) competence, physical self-worth was lowered. As there was generally only one factor of perceived importance that could be determined, it was not possible in the current study to explore fully the effect of individual weighted averages, or the notion that importance-competence discrepancies may be aggregated.

Marsh (1994) stated that the implications of these findings may be limited as studies in this area have not routinely incorporated importance ratings when using the PSPP. This study makes some advancement to the findings of research in this area by using the PIP with the PSPP in assessing self-perceptions in British young people. The notion that high self-esteem may be characterised by the individual's ability to downrate areas of low competence and value areas of high competence still holds intuitive appeal and may be used to interpret the results from other studies. For example, Covey and Feltz (1991) found that physical activity in adolescence was associated positively with aspects of psychological well-being, but that a decrease in physical activity during the transition of adolescence did not result in psychological distress for adolescent women. They leave this result open to interpretation. An explanation could be offered that the process of discounting low physical competence and dismissing the importance of physical activity could have buffered these young women's self-esteem.

Pelham and Swann (1989) found further evidence for a Jamesian model of self-worth. They were also able to show that the relationship between differential importance and self-esteem was significantly stronger for those reporting relatively negative overall views of themselves, in comparison to those who viewed themselves more favourably. Marsh (1993) was critical of these findings, putting forward statistical and methodological objections to this approach. Pelham (1995a) was able to respond to Marsh (1993) with further research and analysis. Pelham (1995a) continued with his allegiance to the theorising of William James but took on board Marsh's (1993) most serious methodological concerns. Pelham (1995a) was able to empirically confirm the Jamesian contention that some self-views take on a particular prominence in an individual's strive for self-worth. However, some of William James's assertions were refined. Pelham (1995a) found that both societal norms and the individual's own personal views about the importance of different self-views contributed towards global feelings of self-worth. Pelham (1995a) also confirmed in this study that the Jamesian notion of discounting low competence by ascribing low importance to that domain was particularly marked in those who feel that they do not possess many talents. It is inferred from these findings that an individual who generally possesses favourable self-views can afford to place importance on some low competence domains, if overall feelings of self-worth average out as positive. There may be a greater psychological impact of importance/competence discrepancies for those who regards themselves negatively overall.

Marsh (1995) responded to Pelham (1995a) reasserting his suggestions that better measurement and more sophisticated methodology would result in stronger support for

the Jamesian perspective. In this paper Marsh (1995) provided a further analysis of Pelham's data (Pelham and Swann, 1989, Pelham, 1995a). In contrast to those findings, Marsh (1995) stated that the support for the Jamesian model remained weak. He suggested that it may be limited to specific traits or subgroups only. Based on other research (e.g. Marsh and Sonstroem, 1995), Marsh (1995) suggested that the critical problem may be the way that importance is inferred by simplistic importance ratings and that future research should look at ways of inferring importance, without the assumption that individuals can explicitly articulate the implicit measures of importance they use in integrating specific self-views into global perspectives of self-esteem. Pelham (1995b) responded to Marsh (1995), defending his case more strongly on this occasion. He concluded that there was now convincing empirical evidence for James's hypothesis about self-investment and self-esteem.

The results from this study showed that the global PIP scale scores correlated significantly and positively with the frequency of physical activity participation variable, as hypothesised by Fox (1990). This indicated that those who valued their physical competencies showed higher levels of participation. These findings have important implications for intervention for those with low levels of participation. It suggests that attention needs to be paid to simultaneously improving both perceived physical competence and the importance placed on that competence. This would minimise the chance of a negative discrepancy between the two which may jeopardise a young person's overall sense of self-esteem. Further empirical work is still needed to establish importance scores that relate to each hypothesised physical competence to establish the most efficacious theoretical model of global components of physical self-

concept. It should also be possible to experimentally manipulate these variables, as Thompson (1993) has successfully achieved in showing the existence of self-worth protective behaviours in the academic domain. Further work is also needed to explore the causal ordering of effects in the discounting hypothesis. In Harter's conceptualisation, discounting the importance of low competence is seen to occur after the acknowledgement of low competence by the individual, which may be a post-hoc justification. On the other hand, discounting the importance of competence may lead to reduced effort or inclination to improve competence, resulting in low perceived competence by the individual.

This issue was raised in recent work by Eccles and Wigfield (1995). They assessed the dimensionality of and relations between adolescents' achievement-related beliefs and self-perceptions, focusing on subjective valuing of achievement. Confirmatory factor analyses indicated that achievement-related beliefs separated into three task value factors (interest, perceived importance and perceived utility), one expectancy/ability factor (comprising beliefs about one's competence, expectancies for success and performance perceptions, and two task difficulty factors (perceptions of effort required to do well). Task values and ability perceptions were positively related to each other and negatively correlated to perceptions of task difficulty, although the direction of causality in these complex relationships could not be ascertained. Eccles and Wigfield (1995) suggested that this issue needs to be examined in studies with young children, when achievement self-perceptions are becoming established.

10.23 The relative influence of peers and parents on sport participation.

Traditional research in adolescence viewed peers and parents as dichotomous influences with the young person striving to adhere to the peer group norms at the expense of parental values and expectations. As was reviewed earlier, adolescents typically experience squabbles with parents but most move on to adulthood without any major breakdown in relationships (Fogelman, 1976). The peer group are no longer seen as necessarily a negative influence (Brown 1980) and peer and parents often agree on major issues (Hartup, 1983).

Belsky et al. (1984) pointed out young people may perceive that their parents are less influential than they really are, which may have accounted for higher reported levels of peer sport socialisation influence than parental in this study. The evidence here suggested that the two influences are far from dichotomous. Parents may, in fact, help directly to determine the nature of the peer group, such as by choice of school, neighbourhood, support for out of school sporting activities and approval over choice of friends. Parents may also provide values that influence friendship formation.

Although it was shown that some young people see joint sport participation as a way in which families can stay close, other adolescents like to state allegiance with their friends and peer group and to appear distinct from their parent's generation.

"I think PE is good and it is a little important to be fit. People should have exercise as sport is good. Me and my friends go skating and swimming together and have a right laugh. It doesn't matter to me if my family doesn't do any sport, after all it's their life."

Female, age 13.

On the whole the results from the current study lend support to the findings of Hendry et al. (1993), from the 1991 analysis of the YPLL data (Young People's Leisure and Lifestyles). They also found that young people are more likely to report playing sport with friends as compared to parents and showed how friends can promote sport involvement by being fellow participants. Likewise with the YPLL, the influence of friends on participation remained high during the adolescent transition, which contrasted with a decline in parental influence on participation. Hendry et al. (1993) account for their findings using focal theories of adolescent development (Coleman and Hendry, 1990) which attest to the growing important influence of peers during adolescence.

The results from this study support the YPLL data from the 1989 survey (reported in Hendry et al. 1993) which also found that older adolescents reported not having the time to participate in physical activities, loss of interest and that other activities were often preferred. Hendry et al. (1993) discussed these results as well in terms of focal theory, suggesting a progressive move from adult organised activities to casual and then commercial leisure interests. In this study the young people did not tend to state greater interest in commercial leisure interests as the rationale for their diminished sport participation levels. As mentioned before, when an alternative was given, their focus often appeared to shift towards concentrating on academic work, which is still an activity promoted by adults.

Harter (1988) proposed that high self-esteem may be the product of unconditional support from others such as parents, as well as resulting from favourable self-perceptions of competence. Leading on from this work and others, Fox (1990) offered a heuristic research model which included parental influence as a possible antecedent of physical self-perceptions, which in turn could interact with physical activity involvement. This current study provided a further contribution to research in this area by showing significant correlations between peer and parental sport socialisation influences and the physical self-perception subdomains provided by Fox (1990), in this sample of young people. Important findings were the strong relationships generally found between peer and parental sport socialisation influence and perceived importance scores as well as competency/adequacy scores. This adds further evidence to the suggestion that the development of physical competence and the importance placed on competence does not happen within a social vacuum.

Although in Fox's (1990) model, parental influence was seen as a theoretical antecedent to physical self-perceptions, as the design of this study was essentially correlational, it was not possible to determine the direction of causality or the exact nature of these relationships. For example, parents may place importance on their child's physical activity involvement and provide opportunities for them to develop physical competence, which may be supported by peers or friends acting as co-participants. This, in turn, may lead to a high self-perception of physical competence. Another possible explanation is that the young person gains physical competence through their physical activity involvement (for example through the school) and this is in turn supported by parents and/or friends. Causality hence might be in either

direction and it is likely that these relationships both interactive, transactional and dynamic. This notion of a bi-directional effect, or 'reverse' socialisation has already been mooted in the seminal work of Snyder and Purdy (1982). These suggestions are all empirical questions that are ideally open for future investigation. The appropriate intervention would be one that focuses on this dynamic.

It is worth pointing out that, with the older boys, parental sport socialisation influence scores were not significantly associated with any of the self-perception variables, although they were with the peer sport socialisation scores. In particular, peer influence related strongly to perceived sport and athletic competence. This suggests that older adolescent boys become more reliant on their peer group rather than parents for feedback and encouragement on their physical competencies and feelings of self-worth. Overall, there tended to be stronger associations between peer sport socialisation, than parental, on the aspects of self-perception. These results too are what could be predicted from sound adolescent developmental theories, for example focal theory of Coleman and Hendry (1990).

10.3 Methodological limitations and theoretical implications.

A cross-sectional design was used in this study for pragmatic reasons, as with many others before it. Hence one of the main methodological limitations of the study was that the findings could not afford causal conclusions. Developmental processes have only been inferred by the examination of trends. In order for causal relationships between the variables studied here to be ascertained, more research is need within longitudinal designs. Alternatively, statistical analysis of data in psychological research has become more sophisticated in recently than has been reflected here, allowing for predictive models to be created within cross-sectional designs. The application of recent advances in covariance structural analysis and path analysis (using programmes such as LISREL) may be useful with data such as this, so that more complex models can be established and causal relationships between inter-correlating variables can be determined. An example of the use of structural equation modelling in this context can be found in a recent study by Cury et al. (1996), who developed a model to assess the influence of individual and contextual factors on adolescent girls' interest in school PE.

With any survey it is worth considering the sample composition to assess representation, before conclusions can be extrapolated to a wider population. In this study there were just over 600 young people from two schools and two sixth-form colleges, thought to be representative of 'typical' institutions in England. Access to older pupils (15 years plus) was difficult due to the pupils' study commitments elsewhere and the schools' reluctance to release them for the research. Only a relatively small proportion of the total sample was from these older age groups.

Nonetheless, the sample size was considered large enough to afford the appropriate statistical analyses of the data collected. All of the four schools/colleges were non-fee paying, coeducational and situated in urban residential areas. Hence the sample was reflective of these types of schools, but the perceptions and behaviours from pupils in other schools (e.g from the private sector, rural communities etc.) may differ from the findings from this study, should this work be replicated.

Access to the pupils in years 7 to 11 (ages 11 to 15/16 years) was obtained through two school PE teachers, one of whom was head of department. Both of these teachers were very keen for their pupils to participate in the study and for their department and school to be actively involved in the research process. They were interested in the author's review of the literature and theories of participation motivation in young people. Both schools had comprehensive programmes running out of lesson times. The enthusiasm and commitment of these teachers meant that both schools appeared to have promoted a very positive environment and ethos for physical education. This may have affected the sample representation and have led to higher than national average levels of participation being reported from the sample.

The two main schools in this study were, however, from different geographical locations. As mentioned, the schools were broadly similar in type, but one was from the north of England and the from the south. Preliminary statistical analysis (not reported) between gender and age matched pupils showed no significant differences in overall frequency of participation or in mean scores from the items and subscales used in this study. Socio-economic class was not considered and this may be an additional

factor to account for within sample individual differences in sport and exercise participation. There is currently no conclusive evidence on the relationship between physical activity in young people and socio-economic background. Hendry et al. (1993) attempted to describe different patterns of leisure in young people by class and found higher levels of sports participation in the adolescents from middle class backgrounds. However, they also reported differences in lifestyles within social class divisions. Roberts (1996) suggested that current social, economic and demographic changes have led to a greater blurring in leisure practices, yet still suggested that the *frequency* of participation between classes may be similar, although the *type* of activities chosen may be different. Further research on young people's physical activity may wish to control for or measure socio-economic class differences. In the qualitative section of the current study, many young people revealed interesting differences in their family environment, where class could only be inferred, but which attested to this being a fruitful avenue of further research. For example

"We do lots of sports together in my family, as well as doing things on our own or with our friends. Mum and dad help me and my brother to keep fit. Sometimes at the weekend we go for a picnic or to a restaurant, but we always go for a walk as well. Dad likes golf the best, mum likes tennis (but she only does it in summer) and my brother likes all sports."

Female, age 14.

"I think sport is very important for me to keep fit and stay in good shape and my family and friends help me to keep in good shape and fit and I help them to do the same. Plus I do Thai kickboxing which helps me to keep fit and I have a basketball court in my back garden and that helps a lot."

Male, age 13.

“I am not thin nor fat, I’m medium. I hate games, I don’t like it all but I am not lazy, I’m not unfit or very fit. Frankly, I hate PE. My mum is very ill so she doesn’t do much. I have to help out a lot after school doing stuff around the house and looking after my little brother. My dad works in the pit so he doesn’t have much time to do anything else, he comes in, has something to eat and goes to bed.”

Female, age 13.

A self-report measure of physical activity was used in the current study.

Questionnaires have been advocated for such research and have found to be superior to other measures (e.g. Biddle, Armstrong and Mitchell, 1992). The other main methods that are usually considered are direct observation and electronic monitoring. Paffenberger et al. (1983) reviewed these different approaches to the measurement of physical activity and also advocated self-report measures over other methods suggesting these were often problematic due to being too intrusive, too imprecise or suitable only for very small samples. Hence a self-report measure was justified in the current study but consideration needs to be given to the validity and reliability of the instrument used.

Sallis (1991) reviewed studies of the validity and reliability of children and adolescent’s physical activity self-reports. He compared the techniques of self-administered recall, such as the activity record in this study, with interview-administered recall, diary records and by proxy reports (e.g. from parents or teachers). Sallis (1991) found that children as young as eight years, in his analysis, were found to be able to report their physical activity with a degree of accuracy, depending on the type of measure used.

However the results of his analysis suggested that self-reported physical activity correlated only moderately with objective measures. He suggested that all self-report physical activity records were open to a substantial degree of error and should be considered only as approximations to true physical activity.

Participation levels reported by the young people in this study were generally high which may have been a genuine reflection of the behaviour of these adolescents. As mentioned, this finding has been supported by other current research (e.g. Roberts, 1996). However the measures used in this study and the context of the research process may have lead to some degree of over reporting of participation. The spread of scores were normally distributed around quite a high mean. Some pupils reported exceptionally high frequency of participation scores, such that it was probably impossible for them in real terms to have done that much in any one week.

Approximately 5% of the sample were considered to be in this group and their frequency of participation score was statistically moderated and replaced with the mean for their gender/age group. It is unknown as to why exactly this occurred. It was not thought the scripts were wasted nor that there were deliberate attempts by these pupils to subvert the research process. Rather these young people may have misunderstood what was asked of them and given a measure of what they would like to do or be willing to do and not what they had actually done. Hence for them it could have been a measure of their attitude towards physical activities and not their behaviour. Nonetheless the qualitative data collected as part of the study attested to the high levels of participation of some of the pupils, with these pupils providing often extensive lists or pictorial representation of their weekly physical activities.

Ferguson et al. (1989) concluded from their investigations that research participants are likely to respond in the desired manner when asked about exercise behaviour and attitudes at the same time. This is an intrinsic problem of any research of this type, regardless of the context. In this study, self-perceptions and the physical activity record were administered in one testing session to the pupils. Unfortunately, study constraints, in particular problems of gaining access to schools, did not permit a separate assessment. Attempts were made to overcome this problem by not introducing the physical activity record at the start of the testing period, such that pupils only completed this after they had completed the main questionnaire. Some of the differences between the findings from this study and that of Biddle et al. (1993) may have arisen due to the context of administering the C-PSPP. For example in this study, sport and athletic competence was a major predictor of physical self-worth in both boys and girls, whereas Biddle et al. (1993) did not find this to be so in their sample of girls. In this study it may be that the testing environment encouraged the pupils to think more about their physical self-worth within the context of sport and exercise, than if the record of physical activity had been obtained on a separate occasion.

There were high correlations found between the self-reported frequency, intensity and duration of activity scores. So, for example, if a pupil reported that they had played football 3 times a week, they were likely to rate the intensity as a 3 ('moderate' intensity) and also the duration as 3 ('15 to 25 minutes'). Sallis (1991), in his review of different physical activity measurement instruments, suggested that young children

may be ill-equipped to estimate intensity and duration of physical activity, with this task beyond the cognitive development of some young participants. It seems that some pupils in this study may have been unable to distinguish between these constructs leading to a congruent response. Even if the frequency data can be considered to genuinely reflect the physical activity-related behaviour of the young people in this study, it could still be questioned as to whether the intensity and duration of their activity were accurately reported. If it was exaggerated it may be such that activity was still not sufficient to produce health benefits. However, the results from even the oldest pupils in the study showed high correlations between frequency, intensity and duration of self-reported activity. Other findings from the study suggested quite sophisticated understanding and response patterns. Hence these high correlations may have in fact been a reflection of difficulties in using the response format of the activity record used rather than the task requiring to great a level of cognitive development from the pupils.

The self-report measure of physical activity participation was assessed with a small sample prior to testing in the main study. One of the reasons this was done was to check that the instrument was appropriate for use with young people and to pilot the 21 activities listed to establish an inclusive set. Nonetheless many pupils in the main study reported participating in 'other' activities not listed on the activity record. Some of these were formal, organised sporting activities played at school, such as Danish long ball and net-wall, which were part of the PE curriculum at one of the sample schools. The list also inadvertently omitted cricket which was played by some pupils at their school. The written statements provided by the pupils also confirmed that

cricket was popular with some boys during their breaks from lessons at school and in their out of school leisure time. Other non-listed activities were traditional activities but not ones introduced at school, such as horse riding. Further other non-listed activities included those played out of school lesson times and assumed to be played in informal, non-organised, recreational settings such as 'skatch' (a bat and ball game). The pupils showed a broad conceptualisation of their definition of physical activities, which included many different activities and games.

"We do gardening 5 times a week and me and my friends play tiggy and you have to run around a lot."

Male, age 12.

On the other hand, some of the activities listed, such as yoga, were not participated in by many pupils in the sample. Although Sallis (1991) recommended choosing a self-report measure from those he reviewed that were already in existence, the evidence here suggests the need for very carefully constructed, locally derived, season sensitive choice of activities if they are to be listed in a self-report measure. It is recommended that further use of self-report measures of physical activities are generated from the sample to be studied, rather than imposed upon them.

The review of literature showed that mothers and fathers may exert differential sport socialisation influences on their children (e.g Brown et al. 1989). The current study only asked about perceived parental influence as a unitary influence and was limited in this way. There were however justified reasons for developing only a global parental

influence scale. The final version of the 'Young People and Sport Questionnaire' which was used in this study consisted of 72 items, excluding the physical activity record and the free response sheet. It took the young people approximately 40 to 90 minutes to complete, depending on age and reading/comprehension ability. On a pragmatic level it was considered that addition of more items, that would have been necessary to separately measure the influences of mother and fathers, would have put an excessive burden on the time, effort and concentration of the pupils in the sample.

Furthermore, during the early stages of the item and scale development, a head teacher was consulted with regards to the author's concern that some pupils may not live with both or either parent. It was thought that these pupils might be uncomfortable or find it hard to respond to items about their 'parents'. Single parenthood has become increasingly common, as have divorce and reconstituted families (Hill, 1993). The head teacher thought that asking about parents in a general way was in fact the most diplomatic and that the participants should be asked to consider this as meaning their parents or the adult/s with whom they lived. This was hence explained to the pupils during their introduction to the study and the section was titled 'me and my family'. Only one pupil positively omitted all the items about parents, commenting on the questionnaire that she was not prepared to answer those questions.

The tradition in developmental research is to examine the influences of peer and/or friends on adolescents, with the implicit assumption that there is one reference group for the young person to consider. The items in the peer sport socialisation influence scale, constructed for this study, were, however, worded such that the pupils could

consider different groups of their peers and friends. The evidence from the qualitative responses suggested that the pupils may move within different circles of friends and focus on different activities within each group. Some young people pointed to a distinction to friends at school and friends out of school with whom activities participated in may differ.

“.... I have one group of friends that really like sport and are always doing sports after school. And another group of friends that are not so into sports and like to do other things in and out of school. I am in the middle. If there is a sport I like I will join in. If not I like doing different things out of school. I especially like dance and swimming.”

Female, age 13.

The notion of there being *one* peer group that influences and is influenced by any individual needs to be challenged. The implication from the written statement given above is that this young woman had one group of friends with whom she participated in sporting activities and another with whom she did other activities. The decision of which to spend time with appeared to come from her own attraction to the specific activities of the group, rather than ‘peer pressure’.

Other young people specifically mentioned that their boy or girl friend, who may have impacted on their physical self perceptions, acted as an encouraging influence to participate or indeed may have been a fellow participant.

“I am very sexy and I look after my body. Because my girlfriend doesn’t like unfit blokes. So I keep in trim for her. I have a tattoo on my chest. It’s a red devil and I had it done when I was a young lad.”

Male, Age 16.

“My boyfriend does a lot of sports such as football, karate and because I do football with him, he does jogging with me. He inspired me a lot to do exercise and now I am used to it.”

Female, age 17.

Further research may wish to examine the way that young people move between circles of friends and the effect of multiple peer and friendship groups on young people’s sport participation levels or other lifestyle behaviours. If questionnaires are to be used, item design and response format needs to allow pupils to consider different groups of friends/peers and different contexts. Recent advances have been made by research in other contexts, which has shown the increasingly differentiated peer-related self-concept during adolescence, into three factors relating to the general peer group, close friendships and romantic relationships (Connolly and Konarski, 1994).

Another possible limitation of the current study was that there was no measure of important others beyond peers/friends and parents. Hendry et al. (1993) found in the 1991 YPLL sample of 13 to 16 year olds that high participation, especially in

competitive sports, was associated with support from teachers and other adults beyond the family. Other studies, mostly from America, have attested to the important role and influence that comes from the 'coach' in sustaining young people's involvement in sports (e.g Smith, Zane, Smoll and Coppel, 1983). Feedback from the coach has been shown to act as a significant predictor of the degree in which a young person reports enjoying their sport (Scanlan and Lewthwaite, 1986). It is reasonable to suggest that more of the variance in participation levels could have been explained if the influence from other adults had been considered. However, British youth sports coaches do not appear to have quite the same status in sport, or the wider society, as their American counterparts. Whilst the young people in this study were not prompted to consider adults other than their family members, they were rarely mentioned in the written statements. The only exception to this was the occasional comment about a PE teacher (both positive and negative).

The young people in this sample did, however, quite frequently mention their siblings. Sometimes this was to describe different levels or types of sport and exercise involvement, but often it was to report on co-participation.

"Well, I feel good and I sometimes go jogging with my little brother. We go for about 1 hour and me and my brother go jogging about for 1.5 miles. We go swimming together as well."

Female, age 12.

There is no research known to the author that has examined the interactive effect of brothers and or sisters on an individual or family's level and type of physical activity

involvement. Further research may wish to examine the relationship between gender mix in the family and sports involvement as well as family size. For example, a young woman may be active out of school if she has an active brother(s) as suggested here. Family size could be hypothesised to have a negative or positive effect on an individual young person's sporting involvement. An individual in a large family might have a greater resource of co-participants. On the other hand, those in a larger family might experience less availability of parental support (financial or otherwise) for sporting leisure pursuits or they may have their leisure time reduced by sharing responsibility out of school for the welfare of other sibs.

In sum, this study extended the usual paradigm of research to incorporate the perceived influences of peer/friends and parents on self-perceptions and sport and exercise participation in young people's lives. However, it was limited by not directly considering the relative importance of mothers and fathers, other socialising agents such non-parent adults, different groups of friends, dating partners and siblings all of whom may exert an effect.

Chronological age was the only measure of development in this study, biological or maturational differences in young people were not considered. Early research on adolescence focused on psychological and psychosocial responses to the biological changes associated with puberty. The period of adolescence was in fact defined in this way. Recently, the biopsychosocial approach has experienced a resurgence of research interest, as techniques to study biological growth have become more sophisticated. Both theoretical and empirical directions for research have expanded to include, for

example, advanced reductionist methodologies to investigate the link with puberty and complex behaviours in adolescence, such as early initiation of intercourse (Meschke et al. 1996) and teenage parenthood (Cairns and Cairns, 1996). The understanding of pubertal changes that relate to behaviour in adolescence has been advanced by the identification of adrenarche¹ as well as menarche (Dorn, 1996).

Boys and girls have been shown to differ in response to their changes in physical development. Rodriguez-Tome et al. (1993) found that boys seem to show an enhanced sense of physical self-worth and body attractiveness in line with these changes, as maturation brings them closer to a mesomorphic ideal. The associated growth appeared to give the boys in their study greater strength, athletic ability and social prestige. For the girls, the relationships were more complex with no clear effect of physical changes on feelings of attractiveness, although the slowest maturing girls had the least positive view of themselves. The results from the current research confirmed higher physical self-perceptions in boys than girls, but that these differences showed no trend for improvement or decline with age, which might have been thought to be linked with physical changes.

Armstrong et al. (1990) provided a thorough examination of the association between pubertal development and patterns of physical activity. They found that pubertal development was not a sensitive indicator of physical activity in either girls or boys. Malina (1990) discussed the major physical changes associated with puberty in terms of the growth in strength and physical capacity. He measured the differential growth in

¹ Adrenarche has been identified by Dorn (1996) and associates, and is referred to as the awakening of adrenal glands, in 6 to 9 year olds, which may link to later behaviour.

strength by gender, showing the growth of muscles of boys to increase by a factor of 14 between the ages of 5 and 16 years and only a tenfold increase for girls. Although it should be noted that Malina (1990) was keen to point out that there was much overlap between the sexes in terms of physical capabilities.

Malina (1990) described how the early physical maturation for boys often lead to high status amongst peers, often achieved through involvement in sporting activities. The increases in height, weight and musculature of boys were perceived as attractive by others. On the other hand, late maturation may be an advantage for girls with regards to sport participation. Not only would they be less likely to be embarrassed by changes such as breast development (Rodriguez- Tome et al. 1993) but the retention of a prepubescent, slender and androgynous figure could contribute to success in traditionally female stereotyped physical activities, such as gymnastics and ballet. In a classic study of dancers by Brooks-Gunn and Warren (1985) it was found that girls who matured early had poorer emotional health, body image and more eating problems than did the late maturing dancers.

There are a number of possible avenues for further research to take and more sophistication is needed in methodology and theoretical pathways. It is likely that such research could significantly enhance the theoretical perspective on sports participation, although the practical significance may be limited. It may be that biological factors could contribute towards the prediction of physical activity during adolescence but that the related psychosocial factors are easier to moderate.

10.4 Thoughts for the future: A chance for sport?

Hardy (1989) contested that sport psychology can be seen as a microcosm for the whole of psychology. In a similar vein, Simmons and Wade (1984) suggested that all the important features of human development are exhibited and magnified during the transition of adolescence. This research exemplifies these two points. Not only has sport been shown to be a context for development, it has also acted as an arena which has reflected normative developmental processes. The evidence from this study has shown a complex set of behaviours and perceptions. It is no longer meaningful to consider 'youth sport participation' as referring to any one thing. No other activity has quite the unique place in the lives of young people. It is simultaneously a compulsory school curriculum activity (until age 16 years), an oft-chosen leisure or recreational activity, as well as an activity with the potential to afford substantial health gains. In terms of improving participation levels, where necessary, no one intervention is going to be appropriate. Because of the importance of regular physical activity for a healthy lifestyle, it is suggested here that a starting place could be in elevating the status of physical activity, above a school subject or a leisure pursuit such that is perceived to be important in quite a separate way. Even within schools, PE is not always taken seriously as a subject and it often deprioritised, especially for older pupils.

"For the last few months I haven't done any regular exercise because I have been unable to take part in PE lessons due to conflicting lessons. I used to be very active."

Female, age 16 years.

Ideally physical activity of some sort should become an integral part of a young person's culture and activities of daily living. Rather than being pitted against studying mathematics or going to the cinema, for example, it needs to become a habit akin to brushing of the teeth, in the behavioural repertoire of young people. If this does not happen then the personal, developmental and cultural milieu, especially for girls, are likely to mitigate against sustained involvement in exercise for health during or beyond adolescence, with other activities chosen in preference. The degree of fun may be highly related to activity choice and there has been an acknowledged need to investigate the motivating effects of exercise enjoyment (Biddle and Mutrie, 1991). Models of commitment have been investigated which have examined enjoyment, dropout and burnout in young elite competitors (Schmidt and Stein, 1991). But it is suggested here that sport and exercise participation needs to be viewed in context of young people's lives as a whole. It seems unlikely that, for most young people, the fun of health-related physical activity would be greater than the fun of other pursuits. General studies of young people have shown that choice of leisure activity correlates significantly with level of interest. Physical activities are not desperately unpopular choices, but the tendency is towards passive, social activities such as listening to music (Fitzgerald et al., 1995). Having fun at sports is not enough to sustain participation.

"I never took PE at school seriously, like some people- it was just basically a good laugh with your friends. When doing dancing, aerobics etc... I'm not that confident at all, as I feel people are watching me and laughing - 'oooh, look at that stiffy' I don't do hardly any exercise at all these days."

Female, age 17 years.

People do not brush their teeth because it is fun, they do so because they appreciate the process, which affords some short term outcomes (e.g. a fresh breath) as well as minimising problems in the long term (e.g. tooth decay). It becomes a habit. Health-related physical activity should be introduced to young people such that the experience is fun, but this should be seen as an important bonus rather than being the goal itself. The review of literature highlighted the debate over the product-process distinction and sided with those such as Corbin and Pangrazi (1992), who advocated the process, as a necessarily important facet of participation if product aims are to be met. It is suggested from this study that all young people need to have an appreciation and awareness of the products (e.g. cardio-vascular fitness) of at least some of their physical activity. If the emphasis is totally product-orientated, such as the largely unsuccessful intervention programme of Cohen et al. (1992), it is likely to fail to produce a lasting orientation towards physical activity. As Biddle (1992) has commented "physical outcomes alone are unlikely to be strong motivators" (pg. 82). Well-being and enjoyment may be more important to maintaining activity than concerns about health (Dishman, Sallis and Orenstein, 1985) but if the orientation is totally focused on the process i.e. geared towards creating a fun and supportive atmosphere and leading to a maximisation of actual and perceived physical skills, it may also fail if the skills gained are not valued and reinforced. In reply to Pangrazi (1991), the evidence from this study has suggested that both the process and product count.

Godin et al. (1991) also advocated the importance of the process, with their suggestion that intervention should concentrate on improving the frequency of people's

participation so that it became a habitual activity. The young people in this sample showed adequate levels of participation. The focus for the future should be on ensuring that at least some of their sessions of activity are of adequate intensity and duration so that the health-related benefits can be achieved. Studies of adult participation motivation that were reviewed here (e.g. Gauvin, 1990) have shown that adults frequently cite their reason for non or low participation as 'not having the time'. This was also stated as a factor impeding participation by some of the older adolescents in the current study. It is not the actual time that young people have that is important but their perceived time. The amount of time spent on chosen activities relates to the importance placed on that activity, as well as the support, motivation and opportunity. The evidence from this study suggests that the average hours per week spent on some sort of physical activity was already sufficient for potential health benefits. In other words, young people may not have to find more time to participate any more frequently than they are doing already, but if in addition they have a product orientation, which leads to purposeful physical activity, they can appreciate the actual or potential health-related gains.

Sport and exercise participation has generally been considered throughout as being a 'good thing'. The emphasis has been enhancing or maximising levels of participation. Problems associated with excessively high levels of participation have not considered. Intervention for the future needs to be sensitively planned. The young people in this study were quite body conscious and many girls in particular were dissatisfied with their looks. There was some indication that 'looking good/fit' was more important to them than 'unseen' fitness such as a healthy heart and bones. Empirical evidence has

shown the importance that young people place on physical attractiveness and its social role, such as in determining peer popularity. It is important that when sport and exercise is promoted it does not send young people further down a continuum of bodily concern. Whilst it may be healthy to care for one's body, there may be a threshold beyond which an individual becomes narcissistically involved. This may not be so healthy, either physically, psychologically or socially. This study examined sport and exercise participation in isolation from other health-related or health risk activities. It is unknown whether high sport participation, which is positively related to peer group acceptance and health, correlates with other less desirable behaviours such as smoking or alcohol use in young people. To promote one may be to promote the others.

It is suggested that future research with young people considers the apparent changing nature of the adolescent transition. Whilst the current research is entrenched within mainstream psychology, psychosocial perceptions and behavioural patterns cannot be studied separately from secular trends and shifts in society as a whole. As the 1990s progress, there may be a case for suggesting that the period of adolescence is getting longer. In this study it was considered to be confined within the secondary school years of ages 11 to 18 years. If biological definitions of adolescence are used, the trend is towards an increasingly younger age for the onset of puberty. If social or behavioural definitions are used it appears that the traditional concerns of adolescents are now becoming the concerns of younger children too. Children as young as 8 or 9 years (who may or may not have reached puberty) may be preoccupied with issues of body image/attractiveness, dietary restraint and dating for example. The gender

differentiation that may be thought previously to have occurred in mid-adolescence may be happening earlier. In this study the data were collected in the Autumn term of the school year. There were already clear distinctions in the self and social perceptions of the boys and girls who had just entered year 7 (age 11 years). There was also in place marked differences in their preferred sport and exercise type and levels of participation. The patterns shown in this study of higher levels of participation in boys than girls and a downward trend with age, would have been set into motion during a transition prior to the first age considered here. Hence primary intervention may be most effective if it is instigated early in life and recognises that important developmental changes, normally associated with the teenage years, may in fact increasingly be in operation for many children at primary school.

At the other end of the transition, true adolescence may be finishing later in years than in previous generations. The stereotype of a young person leaving school or college, finding a job with a career path for life and marrying, is no longer the norm. Although compulsory schooling is still set at 16, increasing numbers of young people are staying on until 18 years. Since the late 1980s there has been a boom in the proportions going on to higher education, paralleled with youth unemployment and restricted job opportunities, even for university graduates. The effect that this may be having on adolescence is to prolong the transition. One of the traditionally seen aims of successful adolescence is the development of autonomy. Yet the majority of young people are remaining in full time education, with a system that demands more parental contributions and fierce competition for seasonal or casual work. This has resulted in many young people remaining at least financially dependent on their parents, until their

mid twenties. The uncertainty of the job market and high house prices means that many young people return to their family home when they have graduated and might not leave and become settled for some years. These possibly negatively considered events could have a positive knock on effect for sport and exercise participation at the end of adolescence.

This study showed a downward trend in participation levels, but did not record the precipitous drop in levels at the end of compulsory schooling (age 16 years) that other work has shown. It might be that if this drop is going to dwindle to a worrying level, such as the adult participation rates shown by the Allied Dunbar National Fitness Survey (1992), that it may not happen until the end of full time education at 21 years plus. Older adolescents and young adults might be still be continuing to participate in sporting and leisure activities more traditionally associated with 'youth' rather than adulthood. The theoretical significance for research with young people is that it will become increasingly unrealistic to view adolescence as one transition. It may be more pragmatic to view adolescence as a continuum having at least three transitional phases, each uniquely characterised. There may be an early transition from childhood into a pre, during and immediate post puberty stage. This may be followed by a 'classical' period of adolescence with the growth in the role of the peer group and sexual decision making for example. The last phase may be a long transition which is associated with the young person having one foot in the adolescence camp, such as with parental support and 'popular culture'. The other foot may be in adult society such as with job-hunting, relationships and leisure interests. In terms of sport and exercise participation, this later period may be a time for sustained involvement for some.

Leisure time, which could include the opportunity for sport participation, would not necessarily be something done in 'precious' time outside of working hours, but could be engaged in during the preparation or search for work. These activities may be not be adult organised or even sanctioned, but may enhance identity and peer relations, such as in the dance culture.

Young people can be typically resistant to dictates from adults about lifestyle issues e.g smoking and alcohol use, especially when adults themselves are 'guilty' over questionable lifestyle choices. Adults should not uniformly criticise young people for their physical activity participation. As this study has demonstrated, it is only the minority of young people who are sedentary, whereas it may be true of the majority of adults. The promotion of sport and exercise participation differs from other lifestyle advice, which tends to be centred on persuading an individual to give up or restrict something seen by the individual as pleasurable or relaxing. It may be that tobacco and alcohol use remain more of a worry and a challenge to those concerned with and about health in adolescents. Brustad (1991) advocated that measures used on children and young people should be appropriate for use with them. Yet there is still a need to develop the paradigm further by gaining an understanding of young people's own health concerns and meanings attributed to physical activity. It has been hoped that the written statements used in this discussion have allowed for the 'voice' of young people to be included.

Motives, beliefs and sport related behaviour have been shown to relate to the individual's self-perceptions, which in turn interact with social norms and expectations. A full understanding of young people's sport participation can only be gained with a blurring of the distinction between academic disciplines such as psychology, sociology and education. Psychologically-based interventions to improve levels of young people's physical activity and fitness will only be successful if placed within the wider social context.

'Postmodernism' has become a buzz word amongst commentators and researchers of contemporary society and has now begun to permeate discussions over the future for youth sport. Hendry et al. (1993) highlighted both the positive and negative roles of sport for young people in a post-modern society. They have also discussed how the prominence of materialism and consumer-led cultural values may impact on young people's well-being and the health for society as a whole (Hendry et al. 1995). Tinning and Fitzclarence (1992) have argued that the success in the future of school based physical education lies with rethinking the nature of PE, such that it is informed by the nature of the postmodern world and the place of education, schooling and physical activity in it. They foresaw a crisis in school PE (in Australia) and expressed some doubt that PE will be seen as relevant and engaging for postmodern youth.

There has been a renewed interest in sport's provision and participation in the UK.

The current British government is attempting to reclaim sports grounds and to nurture future champions, such as with their 1995 policy statement 'Sport: Raising the Game' (Department of National Heritage, 1995). If the goal within society is to foster a lasting healthy lifestyle, by maximising participation during adolescence and sustaining continuation beyond adolescence, evidence from the current research suggests that these policies are unlikely to impact on the sporting needs, motivation or interests of the majority of young people. As Petlichkoff (1993) contended, everyone who wants to participate in sports should, but not everyone needs to desire to be an athlete.

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APPENDIX 1:

Physical Activity self-report measure.

PHYSICAL ACTIVITY RECORD

This part of the questionnaire is designed to assess
the type and amount of physical activity that you
were taking part in

THE LAST FOUR WEEKS.

Physical activity includes exercise, sports and
movement sessions such as dance, that you chose
to take part in as part of your **weekly** routine.
Common activities are included in the chart and there
is space for the addition of others.

If you feel that you did not take part in regular activity
during the last four weeks, tick this box ☐

Now go on to the next section of the questionnaire
over the page

If you did not tick the box, fill in the chart opposite
using the frequency, intensity and time scales at the
top of the page.

Each session can only count as one type of activity
try your best to be as accurate as possible. There
are no wrong or right answers as people differ a lot in
the type and amount of physical activity that they do.

For QUANTITY of activity select the appropriate numbers from this chart and insert them in the columns below.

FREQUENCY (how often)		INTENSITY (how hard)	TIME (each session)	
6 or more times/week	6	very vigorous	6	more than 45 minutes
5 times/week	5	vigorous	5	35-45 minutes
4 times/week	4	moderate to vigorous	4	25-35 minutes
3 times/week	3	moderate	3	15-25 minutes
2 times/week	2	light to moderate	2	5-15 minutes
once a week	1	light	1	less than 10 minutes

PHYSICAL ACTIVITY RECORD	FREQ	INT	TIME
Sports activities			
Rugby			
Football			
Basketball			
Volleyball			
Badminton			
Hockey			
Netball			
Any other?			
Stamina and fitness activities			
Aerobics			
Jogging			
Running			
Swimming			
Cycling			
Any other?			
Strength & muscular activities			
Weight-training			
Exercises only (sit-ups etc.)			
Bodybuilding			
Weight/Powerlifting			
Any other?			
Other activities			
Combat sports			
Martial arts			
Dance			
Yoga			
Ice skating			
Any other?			

APPENDIX 2:

Preliminary study establishing measures of 'body-constancy'.

Participation motivation: A factor analytic study.

In this investigation 212 undergraduate students (mean age 20.92 years, sd 3.57) at the University of Hull completed a 32 item questionnaire designed to measure barriers to physical activity. These items were selected based on factors which most frequently appeared in the empirical literature, in particular those suggested by the work of Dishman et al. (1985), Johnson et al. (1990) and Sechrist et al. (1987). The aim was to have an extensive item pool from which general underlying factors could be derived. Each of the items were phrased as possible barriers to physical activity and the participants were asked to consider how important each one was to them, responding on a 1-5 Likert type scale. The data were collected during January and February 1992.

A principal components analysis was conducted. The number of factors extracted was determined by selecting those with an eigenvalue greater than 1 and an examination of the scree plot. Oblique rotations were performed and factor correlations examined. Following the criterion suggested by West (1991), as factor correlations were less than ± 0.20 , a varimax rotation was appropriate. Scales were then constructed with the criteria 1) suitable factor loadings (>0.30) on an appropriate, single factor and 2) maximising coefficient alpha reliability. Secondary factor analysis of the derived scales was then carried out, and oblique rotation performed with factor correlations examined prior to varimax rotation.

3 factors were extracted accounting for 37.8% of the variance. The first of these factors consisted of 6 items (eigenvalue = 3.15, accounting for 16.6% of the variance,

alpha = 0.70). This factor was labelled 'body constancy'. It appeared to describe a general feeling that exercise in some way temporarily disturbs the natural or desired composure of an individual. Participants in this study who did not exercise regularly¹ indicated that changes in their body and daily routine, that are intrinsically part of exercise behaviour, were not welcomed. The item 'I don't like getting hot and sweaty' loaded most highly on this factor. Regular exercisers were less likely to respond that this item was an important barrier to their participation when compared to non-exercisers (including drop-outs) although this was just below significance ($t = 1.93$, $df = 210$, $p = 0.056$).

It was subsequently found that the 'I don't like getting hot and sweaty' item was also included in the study by Brustad (1992) of children's attraction to physical activity. Here it was statistically grouped with other items in a factor of 'fun of physical exertion', which significantly correlated with Brustad's measure of perceived competence.

From this analysis the 6 'body-constancy' items were selected for inclusion in the current study.

¹ Participants in this study were asked to classify themselves as

1) a 'regular exerciser' (described as individuals who engage in planned physical activity on a regular basis, e.g. on average once a week or more).

2) a 'non-exerciser' (described as individuals who rarely participate in planned physical activity)

3) an 'exercise drop-out' (described as individuals who have been engaged in exercise or sport on a regular basis, who have ceased participating and who have not resumed regular physical activity).

Of the 212 participants in the study 115 (54.2%) classified themselves as being a 'regular exerciser'; 34 (16.03%) classified themselves as being a 'non-exerciser' and 63 (29.7%) as being an 'exercise drop-out'.

APPENDIX 3:
Young People and Sport Questionnaire

YOUNG PEOPLE AND SPORT QUESTIONNAIRE

Name of school/college _____

School year _____

Age _____

Male ☐ Female ☐ (please tick)

WHAT AM I LIKE?

Starting on the next page are sentences which will allow you to describe yourself.

There are no wrong or right answers since people differ a lot.

First, decide which one of the two sentences best describes you.

Then, go to that side of the sentence and tick if it is just “sort of true” or “really true” **FOR YOU**.

Remember to tick only **ONE** of the four boxes and answer all the questions.

All your answers will be confidential - there is no need to write your name.

WHAT I AM LIKE

SAMPLE SENTENCE

	Really True for me	Sort of True for me					Sort of True for me	Really True for me
(a)	☐	☐	Some young people would rather play outdoors in their spare time	BUT	Other young people would rather watch T.V.	☐	☐	
1.	☐	☐	Some young people do very well at all kinds of sports	BUT	Other young people don't feel that they are very good when it comes to sports.	☐	☐	
2.	☐	☐	Some young people feel <i>uneasy</i> when it comes to doing vigorous physical exercise	BUT	Other young people feel <i>confident</i> when it comes to doing vigorous physical exercise.	☐	☐	
3.	☐	☐	Some young people feel that they have a good-looking (fit looking) body compared to other young people	BUT	Other young people feel that compared to most, their body <i>doesn't</i> look so good.	☐	☐	
4.	☐	☐	Some young people feel that they <i>lack</i> strength compared to other young people their age	BUT	Other young people feel that they are stronger than other young people their age.	☐	☐	
5.	☐	☐	Some young people are <i>proud</i> of themselves physically	BUT	Other young people <i>don't</i> have much to be proud of physically.	☐	☐	
6.	☐	☐	Some young people are often <i>unhappy</i> with themselves	BUT	Other young people are pretty <i>pleased</i> with themselves.	☐	☐	
7.	☐	☐	Some young people wish they could be a lot better at sports	BUT	Other young people feel that they are good enough at sports.	☐	☐	
8.	☐	☐	Some young people have a lot of stamina for vigorous physical exercise	BUT	Other young people get out of breath and have to slow down or quit.	☐	☐	
9.	☐	☐	Some young people find it <i>difficult</i> to keep their bodies looking good physically	BUT	Other young people find it <i>easy</i> to keep their bodies looking good physically.	☐	☐	
10.	☐	☐	Some young people think that they have stronger muscles than other young people their age	BUT	Other young people feel that they have weaker muscles than other young people their age.	☐	☐	

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
1.	☐	☐	Some young people <i>don't</i> feel very confident about themselves physically	BUT	Other young people really feel good about themselves physically.	☐	☐
2.	☐	☐	Some young people are <i>happy</i> with themselves as a person	BUT	Other young people are often <i>not</i> happy with themselves.	☐	☐
3.	☐	☐	Some young people think they could do well at just about any new sports activity they haven't tried before	BUT	Other young people are afraid they might <i>not</i> do well at sports they haven't ever tried.	☐	☐
4.	☐	☐	Some young people <i>don't</i> have much stamina and fitness	BUT	Other young people have <i>lots</i> of stamina and fitness.	☐	☐
5.	☐	☐	Some young people are <i>pleased</i> with the appearance of their bodies	BUT	Other young wish their bodies looked in better shape physically.	☐	☐
6.	☐	☐	Some young people <i>lack</i> confidence when it comes to strength activities	BUT	Other young people are very confident when it comes to strength activities	☐	☐
7.	☐	☐	Some young people are very <i>satisfied</i> with themselves physically	BUT	Other young people are often <i>dissatisfied</i> with themselves physically.	☐	☐
8.	☐	☐	Some young people <i>don't</i> like the way they are leading their life.	BUT	other young people <i>do</i> like the way they are leading their life.	☐	☐
9.	☐	☐	In games and sports some young people usually <i>watch</i> instead of play	BUT	Other young people usually <i>play</i> rather than watch.	☐	☐
10.	☐	☐	Some young people try to take part in energetic physical exercise whenever they can	BUT	Other young people try to <i>avoid</i> doing energetic exercise if they can.	☐	☐
11.	☐	☐	Some young people think that their bodies <i>don't</i> look so good in just shorts and a T-shirt	BUT	Other young people feel that their bodies look fine dressed in just shorts and a T-shirt.	☐	☐
12.	☐	☐	When strong muscles are needed, some young people are the <i>first</i> to step forward	BUT	Other young people are the <i>last</i> to step forward when strong muscles are needed.	☐	☐
13.	☐	☐	Some young people are <i>unhappy</i> with how they are and what they can do physically	BUT	Other young people are <i>happy</i> with how they are and what they can do physically.	☐	☐
14.	☐	☐	Some young people <i>like</i> the kind of person they are	BUT	Other young people often wish they were someone else.	☐	☐

	Really True for me	Sort of True for me			Sort of True for me	Really True for me	
5.	☐	☐	Some young people feel that they are <i>better</i> than others their age at sports	BUT	Other young people <i>don't</i> feel they can play as well.	☐	☐
6.	☐	☐	Some young people soon have to quit running and exercising because they get tired	BUT	Other young people can run and do exercises for a long time without getting tired.	☐	☐
7.	☐	☐	Some young people feel that they are <i>often</i> admired for their good-looking bodies	BUT	Other young people feel that they are <i>seldom</i> admired for the way their bodies look.	☐	☐
8.	☐	☐	Some young people feel that they are <i>not</i> as good as others when physical strength is needed	BUT	Other young people feel that they are among the <i>best</i> when physical strength is needed.	☐	☐
9.	☐	☐	Some young people have a positive feeling about themselves physically	BUT	Other young people feel somewhat negative about themselves physically.	☐	☐
10.	☐	☐	Some young people think that compared to others their bodies <i>don't</i> look in good shape physically	BUT	Other young people feel that their bodies look in great shape compared to others.	☐	☐
11.	☐	☐	Some young people are very <i>happy</i> being the way they are	BUT	Other young people wish they were <i>different</i> .	☐	☐
12.	☐	☐	Some young people <i>don't</i> do well at new outdoor games	BUT	Other young people are <i>good</i> at new games right away.	☐	☐
13.	☐	☐	When it comes to activities like running, some young people are able to keep on going	BUT	Other young people soon have to quit to take a rest.	☐	☐
14.	☐	☐	Some young people <i>don't</i> like how their bodies look physically	BUT	Other young people are <i>pleased</i> with how their bodies look physically.	☐	☐
15.	☐	☐	Some young people think that they are strong, and have good muscles compared to others their age	BUT	Other young people think that they are weaker, and <i>don't</i> have such good muscles as other young people their age.	☐	☐
16.	☐	☐	Some young people wish that they could feel better about themselves physically	BUT	Other young people <i>always</i> seem to feel good about themselves physically.	☐	☐
17.	☐	☐	Some young people are <i>confident</i> about how their bodies look physically	BUT	Other young people feel <i>uneasy</i> about how their bodies look physically.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
38.	☐	☐	Some young people are not very happy with the way they do a lot of things	BUT	Other young people think the way they do things is <i>fine</i> .	☐	☐

HOW IMPORTANT ARE THINGS TO YOU ?

39.	☐	☐	Some young people feel that being good at sports is very important to them	BUT	Others feel that being good at sports is not so important to them	☐	☐
40.	☐	☐	Some young people do not feel that having a high level of physical fitness and stamina is very important to them	BUT	Others feel that having a high level of physical fitness and stamina is extremely important to them.	☐	☐
41.	☐	☐	Some young people believe that having a good-looking body is very important to them	BUT	Others believe that having a good-looking body is not all that important in their lives.	☐	☐
42.	☐	☐	Some young people believe that being physically strong is not so important to them	BUT	Others feel that it is extremely important to them to be physically strong.	☐	☐
43.	☐	☐	Some young people feel that having very good sports ability and skill is not so important to them	BUT	Others feel that having a high level of sports ability is really important to them.	☐	☐
44.	☐	☐	Some young people feel that doing regular vigorous exercise is very important to them	BUT	Others feel that keeping up regular vigorous exercise is not of major importance to them	☐	☐
45.	☐	☐	Some young people do not feel it so important for them to spend a lot of time and effort maintaining a good-looking body	BUT	Others think that it is very important to spend time and effort maintaining a good-looking body.	☐	☐
46.	☐	☐	Some young people feel that being strong and having well developed muscles is very important to them	BUT	Others feel that being strong and having well developed muscles is not so important to them.	☐	☐

ME AND MY FRIENDS

47.	☐	☐	Some young people like playing games and sports because that is what their friends like to do	BUT	Other young people have friends who like to do other things	☐	☐
48.	☐	☐	Some young people are teased by others about being overweight when they exercise or play sports	BUT	Other young people are not teased about being overweight	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
9.	☐	☐	Some young people are popular with others when they play games and sports	BUT	Other young people are not popular with others when they play games and sports	☐	☐
0.	☐	☐	Some young people get told by others that they aren't very good at games and sports	BUT	Other young people get told that they are good at games and sport.	☐	☐
1.	☐	☐	Some young people have friends who don't do much sport or exercise	BUT	Other young people have friends who do a lot of sport and exercise	☐	☐
2.	☐	☐	Some young people have friends who think that good looks are very important	BUT	Other young people have friends who do not think that good looks are important	☐	☐
3.	☐	☐	Some young people are never asked by others to join in with games and sports	BUT	Other young people are always being asked by others to join to join in with games and sports	☐	☐
4.	☐	☐	Some young people have friends who they have more fun playing games and sports with than anything else	BUT	Other young people have friends who they have more fun doing other things with	☐	☐
5.	☐	☐	Some young people have friends who think that keeping fit is very important	BUT	Other young people have friends who don't think that keeping fit is important	☐	☐
6.	☐	☐	Some young people have friends who don't care about clothes and the way they look	BUT	Other young people have friends who care a lot about clothes and the way they look.	☐	☐

ME AND MY FAMILY

7.	☐	☐	Some young people have parents who <i>don't</i> like to do much sport or exercise	BUT	Other young people have parents who like to do a lot of sport and exercise.	☐	☐
8.	☐	☐	Some young people have parents who think it is very important for their children to win at sports	BUT	Other young people have parents who don't mind whether their children win or lose at sports.	☐	☐
9.	☐	☐	Some young people have parents who think it is very important for their children to get a lot of exercise	BUT	Other young people have parents who <i>don't</i> think it is so important for their children to exercise.	☐	☐
0.	☐	☐	Some young people have parents who say their children look good however they are dressed	BUT	Other young people have parents who are very critical about the way their children are dressed.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Real True for n
61.	☐	☐	Some young people have parents who keep themselves physically fit	BUT	Other young people have parents who don't keep themselves physically fit.	☐	☐
62.	☐	☐	Some young people have parents who don't care if they get involved in sports	BUT	Other young people have parents who really want them to get involved in sports.	☐	☐
63.	☐	☐	Some young people have parents who don't mind whether their children are one of the best sport	BUT	Other young people have parents who think it is very important for their children to be one of the best at sport.	☐	☐
64.	☐	☐	Some young people have parents who <i>don't</i> make them feel good about the way they look	BUT	Other young people have parents who make them feel really good about the way they look.	☐	☐
65.	☐	☐	Some young people have parents who often play games and sports with them	BUT	Other young people have parents who rarely play games of sports with them.	☐	☐
66.	☐	☐	Some young people only get praised by their parents if they do very well at sport	BUT	Other young people get praised by their parents whether they do well or not.	☐	☐
67.	☐	☐	Some young people don't like getting hot and sweaty when they exercise	BUT	Other young people don't mind getting hot and sweaty when they exercise.	☐	☐
68.	☐	☐	Some young people would like to change their body	BUT	Other young people like their body the way it is.	☐	☐
69.	☐	☐	Some young people think that playing games and sports is not worth the effort	BUT	Other young people don't mind the effort you have to put in.	☐	☐
70.	☐	☐	Some young people don't mind showering and changing after playing games and sports	BUT	Other young people don't like showering and changing after playing games and sports.	☐	☐
71.	☐	☐	Some young people think that playing games and sports is too much of a hassle	BUT	Other young people do not think that playing games and sports is a hassle.	☐	☐
72.	☐	☐	Some young people don't mind changing out of their everyday clothes when they exercise	BUT	Other young people do not like having to change clothes.	☐	☐

What do you feel about sport and exercise? Please use this page to write (or draw) How you think about yourself, your family and friends, and **sport**.

Thank you for taking part in this study

APPENDIX 4:

Bromnick, R. (1995). Barriers to sport and exercise participation in young women.
Paper presented at the Annual Conference of the British Psychological Society,
University of Warwick, 1-4 April, 1995. (Summary).

Barriers to sport and exercise participation in young women.

Summary

In recent years the focus of youth sport has moved away from the traditional emphasis on the social benefits of sport participation towards the health related outcomes of regular physical activity. Evidence suggests that physical activity is inversely and causally related to the incidence of major sources of morbidity and mortality, such as coronary heart disease and that risk factors can be identified as early as in the first decade of life (Cohen *et al.* 1991). Not only can regular physical activity help prevent the onset of diseases in adulthood, but it can also contribute significantly to well-being in young people (Norris *et al.* 1992). Hence current concern centres on children and adolescents out of the need to ensure sustained sport and exercise participation during school years and beyond.

In this study attention is drawn to issues surrounding sport participation in young women, with an attempt to provide a psychosocial perspective of their experiences in sport throughout the adolescent transition. As Covey and Feltz (1991) point out, evidence has been documented since at least the 1940's, showing the decline in physical activity, physical fitness and motor ability in female adolescence. Women's rate of involvement in sport has always lagged behind men's, and despite an apparent fitness boom in the 1980's, they continue to be underrepresented within sport at all levels (Scruton, 1986). Hendry *et al.* (1993) report that young women are as positive as young men about sport and its benefits and yet they are less likely to be participants. The authors conclude that the opportunities for young women are more limited and that male formulations predominate.

Although empirical studies have debunked the myth that active sport participation does not allow for expressions of femininity (Jackson and Marsh, 1986), many young

women still report a preoccupation with stereotypical feminine concerns, such as hair and cosmetics, and the disturbance of these by physical activity is not always welcomed (Orme, 1991). Individuals who are able to transcend the conflicting norms of masculine and feminine stereotypes are more likely to participate, have a positive self image and be healthier (Covey and Feltz, 1991).

Research in this area has tended to be conducted, almost exclusively, using quantitative methods. In this study qualitative data was collected as part of a larger empirical study, to gain a deeper knowledge and understanding into the factors that young women see as motivators for and barriers against their sport and exercise participation. Data were collected from 306 female pupils aged 11 to 18 (mean 13.44 years, sd 1.61) from schools and colleges in North Humberside, South Yorkshire and London. The institutions selected were all local authority run, coeducational and non-uniformed.

238 of these young women (77.8%) provided written statements in response to the question "What do you feel about sport and exercise? Please write (or draw) how you think about yourself, your family and friends and SPORT". The statements were analysed using a method, suggested by the work of Simmons and Wade (1984), in which emergent categories can be determined, but also allows for the young women to speak for themselves, thus preserving clarity and richness of expression.

These responses were matched to the pupil's self-reported measure of physical activity. The results confirmed a significant decrease in sport and exercise participation across age. The 11 year old girls were more than twice as active, on average, than the sixth-formers. There was also a qualitative change in preferred activity choice, away from competitive team games, such as hockey and netball, towards activities performed individually, either in public, such as swimming or cycling, or in private, such as workouts to exercise videos.

Emergent categories that were associated with high and low levels of physical activity were determined. With high levels of activity the key factors, as reported by the young women were 1) Enjoyment 2) Peer and parental support 3) Opportunity. Whereas the key factors associated with low levels of activity were 1) Social physique anxiety 2) Gender role proscriptions 3) Importance placed on other activities.

The statements are presented intact, with no corrections for spelling or grammar, as an example from one or more of these categories, sorted by age to give a developmental perspective. Person-environment reciprocal interactions are highlighted at each level.

Common throughout the sample was the expressed desire and/or pressure to look good and to have the appearance of fitness. For many young women it is *thinness* and not necessarily *health*, that is the desired state and that these young women are more likely to report that they are engaged in the culturally sanctioned, but unhealthy, option of dieting.

Although most of the young women reported taking part in at least some physical activity during an average week, from age 16 years this was only minimal. Hence, when P.E in school ceases to be mandatory young women experience numerous barriers to participation, seeing their involvement as optional and not as specifically as a health-related behaviour. The data indicates that young women do not make a simple choice between activity and inactivity, but chose to spend their time in activities they enjoy, value and are supported in. Despite promising changes made to the P.E curriculum, the results from this study suggests that little progress as been made since Scruton's (1987) attack on P.E for failing to provide meaningful experiences for many adolescent girls.

Recently the Government has made bids to reclaim sports grounds and increase the focus on competitive team games. This is unlikely to have a significant impact on the

sporting competence, interest or career for the majority of young women. Suggestions are made for a future research paradigm in this area, so that causal pathways can be determined and effective intervention planned. Until that happens young women will continue to be lost to the world of sport and the substantial health benefits that can be gained through active participation.

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