

Understanding Participation In Sport:
A Systematic Review – September 2005

Understanding Participation in Sport – a Systematic Review Sport England, March 2005

A study on behalf of Sport England by the University of Oxford British Heart Foundation
Health Promotion Research Group

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Foreword

In 2002 the Government's strategy for achieving its sport and physical activity objectives (Game Plan) set out a clear aim to increase levels of participation in sport. Sport England has since set a challenging target in the Framework for Sport of increasing participation in sport by 1% a year. This aim will not be achieved unless we have a more sophisticated understanding of the motivations and barriers to taking part in sport and the likely interventions that will achieve behaviour change.

This study carried out by the University of Oxford British Heart Foundation Health Promotion Research Group on behalf of Sport England is a systematic review of the evidence about children's and adult's reasons for participation and non-participation in sport. It does not include any new primary research but does provide important new perspectives and insights of relevance to policy and practice. The work has enabled the development of an evidence-informed model for behaviour change in sport and this represents an important step forward towards understanding participation and providing a holistic model, which we can test.

The Oxford Review demonstrated that there is insufficient high quality research evidence about the reasons why adults and young people do and do not participate. The research available to date has been fragmented, often taking the form of relatively simplistic attitude scales built into large scale survey questionnaires or at the other end of the spectrum academically driven without strong connections to policy and practice.

Sport England is taking the Oxford recommendations seriously to apply improved systematic thinking and collect improved evidence of what works to shape the design and implementation of investment into sport. We are determined that future investment will be spent in ways that provide the best possible chance to increase and widen the base of participation to enable England to become the most active and successful sporting nation in the world. We are also determined to share what we learn to help make the case for greater public investment into sport and to influence and assist all those across the country who share our objective. Our commitment is to move the nation from one of what Oxford call 'chronic contemplators' to one of sustained participants.

This review by Oxford forms the foundation of continuing work to better understand the reasons why people do and do not participate and points the way towards a better theoretical understanding of behaviour change in terms of sport and exercise. As a result of this review Sport England is commissioning a programme of primary research focusing on those groups in the population where drop out is at its highest and participation rates are low.

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March 2005

Contents

Executive Summary	4
Main recommendations for Sport England	6
Research recommendations to Sport England	7
Introduction	9
Background	9
Project aim	10
Methods and results 1	12
A review of psychological and ecological models of behaviour relevant to physical activity and sport adoption	12
Common theories and models used in physical activity interventions	12
Theory of reasoned action	15
Theory of planned behaviour	17
Social Cognitive Theory	17
Transtheoretical/Stages of Change Model	21
Wider determinants of physical activity	23
Summary of models of health behaviour	25
Methods and results 2	26
A descriptive review of recent UK published quantitative surveys on attitudes to sport and physical activity	26
Methods	26
Results	26
Adult studies	27
Children and young people	30
Summary of quantitative surveys	31
Methods and results 3	33
A review of UK published and unpublished qualitative research studies which have examined children's and adults' reasons for participation and non-participation in sport	33
Methods	33
Results	34
Reasons for participation in sport and physical activity	36
Barriers to participation in sport and physical activity	36
Implications for sport and physical activity promotion policies	38
Recommendations for future research into determinants of sport and physical activity	42
Key research questions	44
References	46
Appendices	54
Appendix 1 Characteristics of quantitative surveys	55
Appendix 2 Key national sport and physical activity policies: a brief analysis	65
Appendix 3 Qualitative review schema	70
Appendix 4 Characteristics of qualitative studies	71

Executive Summary

Background and Project Aim

Little is known about how children and adults start, stop or maintain sport and physical activity throughout their lives.

This report presents the results of the “Understanding Participation in Sport – a systematic review” research project. This project was commissioned by Sport England and led and managed by staff and consultants at the British Heart Foundation Health Promotion Research Group, based at the University of Oxford.

The aim of the project was:

- To examine systematically UK published and unpublished qualitative research studies which have examined children's and adults' reasons for participation and non-participation in sport¹.

Two additional reviews were also conducted in order to place the results of a qualitative review within a theoretical framework and compare these findings with UK quantitative surveys.

The aims of these additional reviews were:

- To conduct a review of psychological and ecological models of behaviour relevant to physical activity and sport adoption;
- To conduct a descriptive review of recent UK published quantitative surveys on attitudes to sport and physical activity.

The research used different review methods to examine two main data sources, published academic literature and published or unpublished reports from national sports and public health agencies.

¹ Where the term “sport” is used in this proposal it is based on the definition of sport agreed by the Council of Europe: “Sport means all forms of physical activity which, through casual participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.” (Council of Europe, European Sports Charter, 1993)

Main findings

Reasons for participation in sport and physical activity

Participants generally recognised there were health benefits of physical activity. Weight management, social interaction and enjoyment of exercise were also common reasons for participation.

Concerns about body shape were the main reasons for the participation of young girls. A number of studies reported pressure to conform to popular ideals of beauty as important reasons for teenage girls being physically active. Girls were also more likely to participate if the activity emphasised fun and enjoyment and provided the opportunity for social interaction with friends.

Along with general health benefits, older people identified the importance of physical activity in

staving off the effects of ageing. Social dancing was successful in maintaining participation in older people. Participants described dance as challenging traditional expectations of older people being physically infirm. As people aged and became less physically able, graduated levels of dancing meant continued participation was possible. Participation was also maintained across other major life events such as bereavement because other participants at dances provided a support network.

Barriers to participation in sport and physical activity

Challenges to identity such as having to show others an unfit body, appearing incompetent at core skills and, for women, appearing overly masculine were identified as barriers to participation. Participation was also hampered by difficulty in accessing, and the poor state of, facilities. A number of studies reported participant concerns with the cost of joining sporting clubs and fitness gyms.

A number of authors concluded that an emphasis on the enjoyment and social benefits of physical activity was a good way to promote participation. A move away from authoritarian and prescriptive statements about the health benefits of exercise was another common recommendation. Many

studies showed that people could not identify with the models of perfection used to promote physical activity and that 'real life' role models would be more effective. This finding held true in studies of older people, those from diverse ethnic backgrounds and teenagers.

More variation in the types of physical activity offered was seen as a way of increasing interest among school children. During adolescence, flexibility in PE uniform, privacy in changing rooms and greater variation in the activities offered was important. Girls PE kit was described as uncomfortable and embarrassing by most teenage girls. A better understanding of pressures to manage changing identity and new body images was particularly relevant for teenage girls. A further problem was the dominance of boys in competitive PE classes and the lack of support for girls from teachers.

Changes in stage of life such as leaving school, having children, children leaving home, retirement and losing a spouse were all identified as crucial points in the maintenance of physical activity. At each stage a shift in social network occurs along with a shift in identity. These stages are recognised in a number of studies as time where drop-out is most likely.

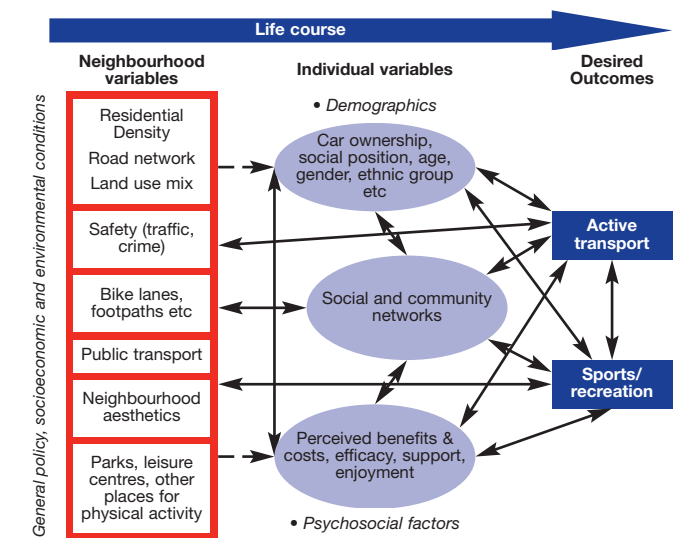
The implications for policy makers are clear:

- There is an urgent need for well-conducted qualitative research into attitudes to physical activity. This should investigate in depth the social and psychological barriers to taking part in sport and physical activity across the lifespan.
- Such research should be used to inform national policy-making on sport and physical activity, to inform the 'culture shifts' to which almost all government documents refer.
- In the absence of such evidence-based policy-making we are likely to continue to see well-meaning policy statements from government that are not rooted in the realities of people's lives.

Recommendations to Sport England

Based on the results of the theoretical, quantitative and qualitative reviews, future work of Sport England should:

- Underpin its intervention and sports promotion programmes and campaigns with a basic theoretical framework. This framework should emphasise the role of the organisation in increasing expectancy values (the extent to which people believe



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becoming more active will benefit them) building confidence for physical activity, increasing opportunities and reducing obstacles. We propose that the evidence informed model of the potential determinants of sport and physical activity should be the basis for such development.

- Advocate that physical activity counselling becomes part of normal healthcare in the prevention, treatment and management of chronic diseases for all health professionals. The role of sport and exercise would be part of the choices for those participating in such programmes.
- Advocate and provide a supportive environment for physical activity by increasing opportunities to be active.

Sport England's role would be one of the protection, promotion and provision of supportive environments e.g. via protection – support legislation to protect green space, de-regulate play space; via promotion – create information networks and local resources about opportunities to be active, promote and reward active workplace travel modes: via provision – see that services are best placed to serve the most needy.

- Advocate that fiscal policies are used to reduce the cost and increase access to physical activity e.g. review fiscal options for Active Travel, VAT and personal tax; public transport and congestion charges; VAT status on physical activity related goods and services.
- Use mass media images that show people being successful with a whole range of physical activities including active transport and play. One of the key elements of building confidence is observing someone like you successfully performing the intended behaviour. A range of images would be required covering different population groups and activities. People find it difficult to identify with the models of perfection used to promote physical activity and that 'real life' role models would be more effective.

Research recommendations to Sport England

- Research is needed into the reasons why people do and do not participate in physical activity and the relationship between their levels of participation and different stages in their lives. This work should adopt a mix of quantitative and qualitative methods to identify and understand changes to sport and physical activity at critical transitional phases during childhood, adolescence and adult life. Ideally this work should have comparison studies in other countries. This body of work should look to develop the evidence informed model of the potential determinants of sport and physical activity (Figure 8 – page 43).
- Research into examining the relationship between past and present social circumstances and participation in sport and physical activity combined with further qualitative research (as outlined previously). This would help Sport England in developing interventions that understand social and environmental circumstances and work appropriately to encourage greater participation amongst those who have the greatest social needs.
- Research should be stratified by three different categories of participation in physical activity across the life course

(1) *the always participates* - people who participate in high levels of sports and leisure time physical activities throughout their lives (2) *the never participates* – people who never participate in sports and leisure time physical activities throughout their lives, and (3) *the sometimes participates* – people whose participation changes across their lives (e.g. never active to a little active and back to never active).

- Qualitative research should focus upon children, adolescents and young adults, and older people. For children, adolescents and young people four key life stages should be examined, (1) pre-school, (2) primary school, (3) secondary school and (4) school leavers/1st job. Further qualitative research should capture children's experiences of physical activity and sport, as well as reflecting changes in activity levels across childhood and adolescence. The impact of leaving school or higher education and starting employment upon physical activity and sports participation is unknown.
- Qualitative research for older adults should examine experiences of physical activity and sport from within the three identified groups. The research should draw upon the experiences of older people from different socio-economic groups, and from older

adults with chronic diseases, commonly found and correlated with physical activity and sports participation.

1. Introduction

1.1 Background

Despite the best efforts of national and local agencies to promote physical activity, trend data for the UK shows an increase in the proportion of adults who are in the least active activity group (Petersen et al, 2004). The increase in the least active (less than 30 minutes or more of physical activity per week) is consistent for both genders and all age groups between 1994 and 1998.

Game Plan set a national target for sport and physical activity, “70% (currently 30%) of the population to be reasonably active (for example 30 minutes of moderate exercise five times a week) by 2020” (p 15, DCMS/Strategy Unit, 2002). This requires a significant annual increase from present levels of approximately 30% and a reversal of present trends of physical activity (DCMS/Strategy Unit, 2002). Between 1987-1996 the only age group which increased participation in sport was the 60-69 years age group. It stagnated or fell in all other age groups from 16 to 70+ (Sport England, 2003). Participation in sport is socially patterned by gender, poverty, social class and ethnicity and within different types of sports differences in the rates of participation related to these socio-demographic variables are even greater (Sport England, 2003).

Such ambitious new national targets, in conjunction with the funding of Local Exercise Action Pilots (LEAP) have now defined physical activity as having an important political and policy presence. Such a presence also carries a risk. This risk is that it increases the pressure on national sporting and public health agencies to develop and deliver new population approaches in tackling the rise of sedentary behaviour.

Common sense would dictate that any such new initiatives should be based upon a combination of research evidence of the determinants of physical inactivity, effective intervention studies and then finally well-evaluated projects delivering these programmes in real world settings, i.e. an evidence-base. The Framework for Sport in England (Sport England, 2004) has identified the need to improve sport’s evidence-base, focusing particularly on the evidence which helps explore the reasons for participation and non-participation in sport.

This type of evidence is most usefully achieved by using qualitative research methods. These methods seek to understand the meaning of an experience to participants and focus on exploring views and context. Historically research into determinants of sports and physical activity participation has

tended to adopt quantitative methods. These most typically use cross-sectional survey data to examine responses to pre-determined questions, for example individual’s attitudes and beliefs about sport. These studies can successfully describe the most prevalent responses found within different groups, and can assess the direction and strength of barriers associated with sport. Quantitative studies can identify how important some reasons are (i.e. take apart and examine individual or groups of reasons for participation in sport), but they are unable to probe deeper into an explanation or understanding of these reasons.

More effective evidence-based interventions for sport and physical activity will emerge only from a better understanding of how children and adults adopt, stop or maintain sport and physical activity throughout their lives.

1.2 Project aim

This report presents the results of the “Understanding Participation in Sport - a systematic review” research project. This project was commissioned by Sport England and led and managed by staff and consultants at the British Heart Foundation Health Promotion Research Group, based at the University of Oxford.

The aim of the research was:

- To examine systematically UK published and unpublished qualitative research studies which have examined children’s and adults’ reasons for participation and non-participation in sport².

Two additional reviews were also conducted in order to place the results of a qualitative review within a theoretical framework and compare these findings with UK quantitative surveys. The aims of these additional reviews were:

- To conduct a review of psychological and ecological models of behaviour relevant to physical activity and sport adoption;
- To conduct a descriptive review of recent UK published quantitative surveys on attitudes to sport and physical activity

The research used different review methods to examine two main data sources, published academic literature and published or unpublished reports from national sports and public health agencies. The report presents the results of the review of theoretical models first, moves onto the results of the quantitative surveys and concludes with the results of the qualitative review.

² Where the term “sport” is used in this proposal it is based on the definition of sport agreed by the Council of Europe: “Sport means all forms of physical activity which, through casual participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.” (Council of Europe, European Sports Charter, 1993)

Recommendations for further research that will contribute to the value of sport evidence base are presented to Sport England. In the final section of the report the overall findings of each review are discussed in the light of present policies for sport and physical activity promotion.

2. Methods & Results 1

2.1 Review of psychological and ecological models of behaviour relevant to physical activity and sport adoption

This section of the report presents the results of a review of four common models and theories used in the promotion of physical activity and sport. The review examines previous reviews of this area, presents and discusses each model in turn and concludes with a discussion of the broader theoretical determinants and their application to physical activity and sport promotion.

Background

The ability of physical activity interventions to improve peoples' health is dependent upon a willingness to adopt and maintain a physically active lifestyle over many years. To date, reviews of physical activity interventions highlight how difficult this is to achieve. This difficulty is not restricted to physical activity interventions. It has been observed that adherence to professional advice is typically poor when self-directed behaviour change is required (Clark & Becker, 1998). As recently as 1988 it was proposed that little was known about who would exercise, why and for how long (Sonstroem, 1988).

Psychological theories of behaviour change along with data on behavioural epidemiology

can help our understanding of the predictors of behaviour change and maintenance, guide the development of physical activity interventions and provide a basis for evaluation.

One of the first extensive reviews of the determinants of physical activity, conducted in 1988, noted that few physical activity intervention or adherence studies were based on any theoretical framework. It was suggested that the lack of a theoretical approach may, in part, explain the low level of exercise adherence achieved in these studies (Dishman, 1990). However, a repeat of this review 4 years later found that there had been a distinct improvement in the use of theories in studies and that some studies had even started to compare different theories against each other (Dishman & Sallis, 1994)

2.2 Common theories and models used in physical activity interventions

In recent years, published studies of the effectiveness of physical activity interventions employed at least one behaviour modification strategy which most generally included stimulus control, reinforcement and self-monitoring. These evolved from the operant conditioning theories of Skinner (1953) who proposed that behaviours such as physical activity can be determined by manipulating

their antecedents and consequences.

Line A in Figure 1 represents a simple conceptualisation of the theory.

Antecedents are environmental and physical stimuli that increase the intention to change behaviour. They can be anything from a poster campaign promoting physical activity to receiving advice to exercise from a doctor following a heart attack. Operant conditioning theory posits that the immediate consequences of behaviour increase the likelihood of it being performed again. Positive consequences increase the likelihood of the behaviour being performed again while negative consequences reduce the likelihood. Line B in Figure 1 shows the intervention techniques used to manipulate the antecedents and consequences of the target behaviour.

Stimulus control

Stimulus control is the process of manipulating the antecedents of a behaviour,

such as physical activity, by increasing the cues and prompts for it and reducing them for physical inactivity. The intention is to prompt the initiation of the target behaviour. A common example of this in nutrition is the positioning of sweets and chocolates at checkouts in supermarkets where adults and children are forced to wait temporarily. The classic example of this in an exercise setting is the use of a poster promoting the benefits of using the stairs at the bottom of a busy escalator in a train station. During the weeks the poster was there stair use increased. When the poster was removed stair use reduced (Brownell et al, 1980; Blamey et al, 1995). Unfortunately, in today's automated society the environment is flooded with cues for being sedentary.

The most common application of this principle in physical activity interventions is telephone follow-up. The frequency of telephone reminder calls has been shown to be associated with increased physical activity (Lombard et al, 1995).

Reinforcement

If the immediate consequences of a behaviour leads to an increased probability that the behaviour will be performed again they are regarded as reinforcing. Reinforcement can be both positive and negative. Positive reinforcement is when the person finds the consequences of a behaviour rewarding. For exercise this might include feeling refreshed, having more energy, or receiving praise and encouragement from others. Negative reinforcement also leads to an increase in behaviour but does so by reducing or eliminating a negative state or aversive stimuli. For example many people use exercise to reduce stress or feelings of lethargy. Negative reinforcement should not be confused with punishment which uses negative consequences to reduce the frequency of a particular behaviour. Common punishments associated with physical activity that may reduce its frequency are boredom and muscle soreness.

Reinforcement management involves attempts to manipulate the consequences of the target behaviour to increase the probability that they are reinforcing. In physical activity interventions, reinforcement management mainly involved external rewards such as free lottery tickets, badges, T-shirts, reviews of

progress and praise from practitioners.

Reinforcement can also be internal in terms of feeling a sense of mastery for successfully completing the behaviour, enjoying the exercise process itself and generally feeling good about one-self. It has been suggested that internal reinforcement might have a longer lasting effect than external reinforcement (Deci and Ryan, 1987).

The antecedents and consequences of physical activity that promote change will vary for each individual. Part of the self-management of physical activity is learning what these are for one-self. To achieve this, many studies ask subjects to self-monitor their physical activity. This normally involves keeping a logbook or diary of physical activity each day for a specified time period, often a week. The idea is that individuals establish their own system of cues, prompts and reinforcers. One study (King et al, 1988) found that the frequency of self-monitoring was associated with a higher frequency of physical activity. Another (Reid and Morgan, 1979) found that self-monitoring was only completed by those successfully adhering to the physical activity programme. The use of pedometers is a kind of self-monitoring which provides feedback about current movement prompting personal reflection of behaviour. Self-monitoring alone is

Figure 1: Operant Conditioning



insufficient for producing long term changes in behaviour. As already mentioned, only those people who experience success changing behaviour tend to continue with self-monitoring. So even if every person in a population had a pedometer, it is highly unlikely that it would lead to sustainable increases in physical activity beyond 2-3 months.

The review of physical activity determinants and interventions by Dishman and Sallis (1994), found that the use of at least one behaviour change method was better than none at all. They were unable to determine whether one was better than another because they were often part of multi-factor interventions. King et al (1992) found that behaviour modification techniques, such as those described above, lead to increases in the frequency of physical activity 10%-75% greater than no treatment control groups.

Some studies have educated participants about the importance of social support and encouraged them to actively seek it from friends, neighbours and family. Support from these sources can involve encouragement and praise or more direct support such as exercising together. This kind of support has been shown to be associated with changes in physical activity over 2 years (Sallis et al,

1992). As well as acting as prompts for physical activity, telephone calls from health/fitness professionals can also be a means of providing support. A number of studies in the US have found that telephone support can help with the maintenance of physical activity changes over time (Green et al, 2002).

Since the early review of Dishman (1990) a number of theories of behaviour change have been used to guide the design and implementation of physical activity interventions. Theories of behaviour make explicit assumptions about a behaviour and specify relationships between key variables that are associated with and expected to predict behaviour. Four main theories have been cited by the majority of studies as the basis of their intervention. They are:

- Theory of reasoned action
- Theory of planned behaviour
- Social cognitive theory
- Transtheoretical model (stages of change)

2.3 Theory of reasoned action

The Theory of Reasoned Action (Fishbein and Ajzen, 1975) posits that the most important determinant of behaviour is a person's

behavioural intention and that intention is determined by the person's attitude towards the behaviour plus the influence of social factors. The theory is presented diagrammatically in Figure 2.

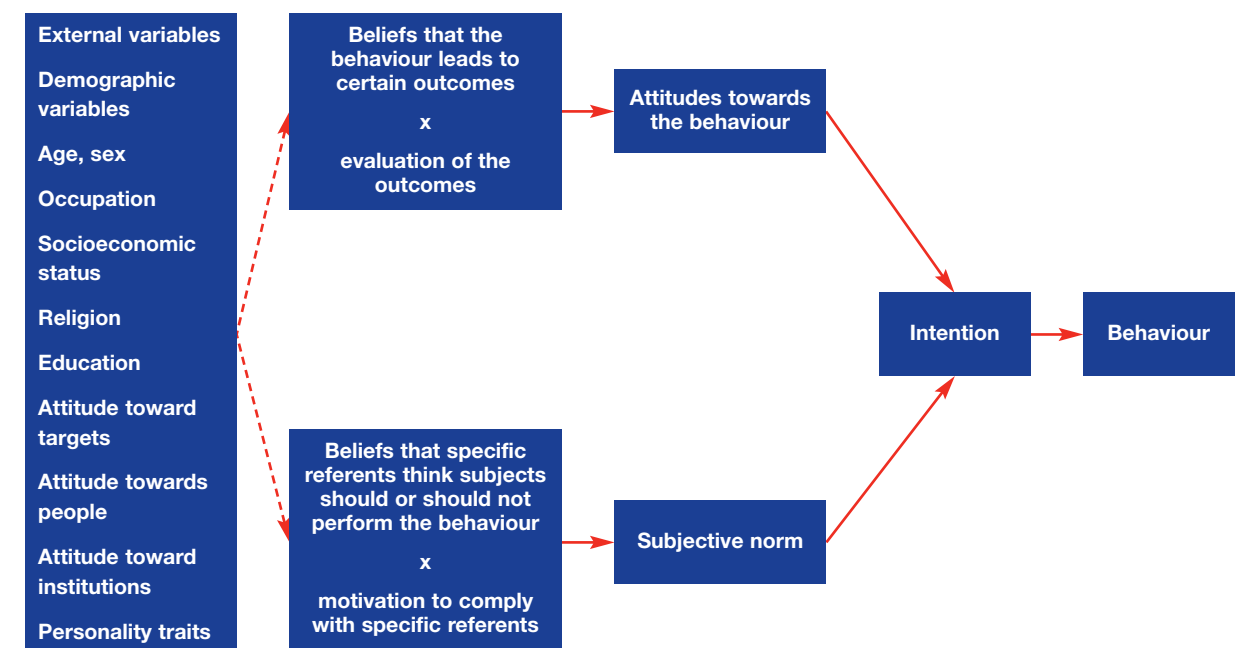
Attitude is a function of personal beliefs about the perceived consequences of engaging in a behaviour and an evaluation of those consequences. If the person believed that taking part in regular physical activity would lead to valuable consequences they would be expected to have a positive attitude towards physical activity. Attitude is hypothesised to be composed of an evaluation of the level of perceived enjoyment and the level of benefit or discomfort associated with the behaviour.

Subjective norm is a function of the views of important others in the person's life regarding the target behaviour, weighted by how motivated the person is to act on their views. In other words it represents the social pressure to engage or avoid particular behaviours. More recently, it is also hypothesised to include a component which represents the extent to which one's social network performs the behaviour (Rhodes and Courneya, 2003).

The Theory of Reasoned Action suggests that the probability of engaging in physical activity would be increased if:

- a person predicts that physical activity will be enjoyable;

Figure 2: Theory of Reasoned Action



- physical activity will lead to only valued positive outcomes and minimal discomfort or harm;
- a person's social network will want them to be physically active;
- a person's social network is physically active.

2.4 Theory of planned behaviour

The Theory of Planned Behaviour is identical to the Theory of Reasoned Action with the addition of a third construct, perceived behavioural control. This was added to the model to account for those elements of physical activity that are not under volitional control (Ajzen, 1985). Ajzen argued that the greater the control a person perceives they have over behaviour the more effort they will put into performing it. More recently, perceived behavioural control has been described as two sub-components, one representing an individual's perception of the ease/difficulty of performing the behaviour (confidence) and the other representing the person's appraisal of how much they believe performing the behaviour is determined by external factors such as opportunities and resources (Rhodes and Courneya, 2003). So in addition to the bullet points above, if a person perceived that becoming more active would be reasonably easy and they were confident they could it,

plus they perceived there were plenty of opportunities to be active, the model would predict they would have high intentions to be active.

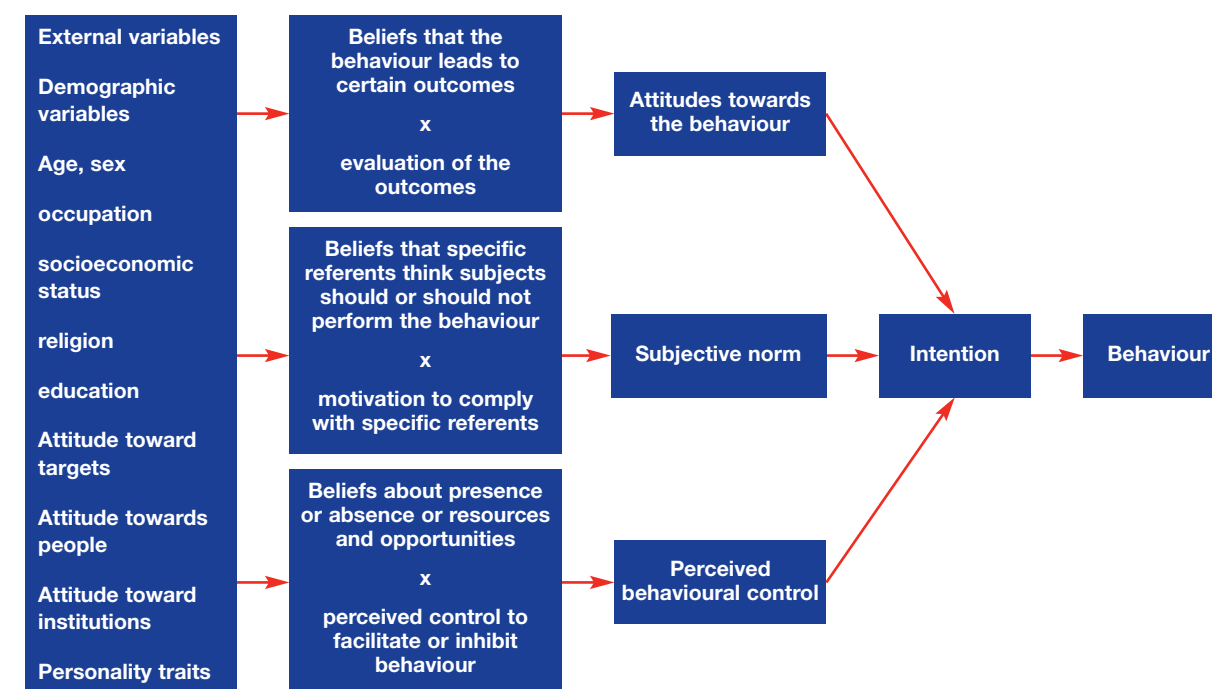
A review of physical activity studies of intention found that the mean correlation between intention to exercise and exercise behaviour was 0.55, explaining 30% of the variability in exercise (Godin, 1994).

2.5 Social Cognitive Theory

Social Cognitive Theory (Bandura, 1986) developed from Social Learning Theory (Bandura, 1977) and posits that behavioural, personal and environmental factors are reciprocal, interacting determinants of each other. The theory refers to this as reciprocal determinism, meaning that behaviour is not simply the result of the environment and the person, just as the environment is not simply the result of the person and the behaviour. Instead, the three components are constantly interacting. A change in one has implications for the other.

Two kinds of expectations are central to Social Cognitive Theory: outcome expectations and efficacy expectations. Outcome expectations are beliefs about whether a given behaviour is likely to lead to certain outcomes and is

Figure 3: Theory of Planned Behaviour



similar to the attitude construct in the Theory of Reasoned Action. Bandura (2004) has described three aspects of outcome expectations. The first relates to the personal anticipation of gains and losses such as pleasure and discomfort and any accompanying material gains and losses. In physical activity, this might include weighing up the benefits of improved fitness and a lower weight against the immediate discomfort of, for example, riding a stationary bike in a gym. The second is the perception of social responses to change in behaviour. How will other people respond if I become more active? Social approval or disapproval is clearly an important determinant of behaviour. Finally, it is proposed that an appraisal of how

changing behaviour fits with wider personal values such as self-satisfaction and self-worth leads to self-regulation. Motivation is expected to be higher if there is consistency between personal beliefs and values and actions. When there is a discrepancy between current behaviour and strongly held values, people are expected to change their behaviour to resolve the discrepancy. If I believe that health is something I value and yet see that my personal behaviour is inconsistent with this value, a self-regulatory reaction is provoked which leads to a change in behaviour. An example of an attempt to manipulate this kind of expectancy can be seen on the front of the recent Chief Medical Officers Report (Department of Health, 2004). It showed an

image of a cigarette butt being put out in a pot of face cream. The idea of this mass media campaign was to provoke a reaction in young, smoking women which aimed to create a discrepancy in their mind between the value they place on avoiding wrinkled skin and their current smoking behaviour. The desired outcome is an increase in motivation to quit smoking by helping these young women to see that quitting is in their self-interest.

Social Cognitive Theory acknowledges that personal behaviour is not simply a matter of personal regulation but is in part determined by the environment in the form of facilitators and obstacles. Even the most motivated individual will have difficulty in becoming active if there are chronic competing time demands and opportunities for physical activity are low.

A central focus of Social Cognitive Theory is self-efficacy. This refers to a person's perception of how capable they are of performing the behaviour that will lead to desirable outcomes. Self-efficacy is often evaluated independently of the theory's other constructs and is influenced by a) previous experience of the behaviour; b) vicarious experience, which means learning the behaviour by observing it being performed by

someone similar to the observer; c) verbal persuasion in the form of encouragement from others and d) physiological arousal, which refers to the extent to which we interpret sweating, increased respiration and heart rate as signs of vulnerability (Clark and Becker, 1998). Self-efficacy influences a person's outcome expectancies, how they view the environment, as well as the goals they set for themselves, another important construct of this theory. People with high efficacy expectations are more likely to predict desirable outcomes from changing their behaviour and see obstacles as surmountable by developing some new skills along with increased effort and perseverance. People with high self-efficacy also set themselves more challenging goals and make stronger commitments to them. Low efficacy people tend to believe that changing behaviour will lead to undesirable outcomes and predict that they don't have the resources to overcome obstacles to change. They also tend to set much lower goals, exert less effort to change and quickly quit trying in the face of difficulties. Of course, reducing environmental barriers to change and increasing accessibility are likely to increase efficacy beliefs, reflecting the reciprocal nature of the constructs in this model.

Table 1: Elements of a programme based on Social Cognitive Theory

Programme design
Written description of the benefits of exercise
Assessment of exercise expectations
Review of expectations to make them realistic
Assessment of self-efficacy and skills training to enhance it
Videotape instruction on exercising safely
Identification of enjoyable exercise settings
Self-monitoring through diaries and heart rate monitors
Reinforcement through staff phone calls, fitness evaluations and T-shirts
Development of a plan to cope with interruptions to exercise

Self-efficacy has been shown to be predictive of physical activity participation (Garcia and King, 1991) and manipulating the components of self-efficacy can lead to changes in physical activity (McAuley et al, 1994).

When applied to health behaviour, Social Cognitive Theory also highlights knowledge of health risks as a determinant of behaviour change. The theory suggests that if people are

unaware of how their lifestyle affects their health, they will have little motivation to change. Table 1 shows how one study translated the theory into practice (adapted from Barr Taylor, 1998).

Clearly, motives for changing physical activity are much broader than health outcomes alone. This is especially true when short term goals and the immediate consequences of behaviour drive current behaviour more so than distal goals and outcomes. It used a whole range of strategies based on the various principles of the theory. At two years intervention subjects were performing significantly more physical activity than controls (King et al, 1991).

The three 'psychosocial models' described above have many overlapping determinants even though they may be given names. Table 2 shows the overlapping elements of each.

Table 2: Common components of different theoretical models of behaviour change

Psychosocial determinants of physical activity/sport behaviour

	Self-efficacy	Outcome expectations			Goals		Perceived facilitators & obstacles	
		Physical	Social	Self evaluative	Proximal	Distal	Intra/Interpersonal	Environmental
Social cognitive theory	✓	✓	✓	✓	✓	✓	✓	✓
Health Belief Model		✓	✓				✓	✓
Theory of reasoned action	✓	✓	✓		✓			
Theory of planned behaviour	✓	✓	✓		✓			

In summary, these models hypothesise that behaviour change is more likely when:

- the perceived benefits of physical activity outweigh the perceived costs;
- becoming more physically active will lead to social approval, not disapproval;
- being more active will lead to self-satisfaction and is consistent with highly valued, broader life goals;
- desirable outcomes are within one's personal control and are achievable through one's own actions;
- there are few obstacles/barriers to achieving desirable outcomes;
- opportunities and access to physical activity is high.

2.6 Transtheoretical/Stages of Change Model

In the last decade the Transtheoretical or Stages of Change Model has received a great deal of attention (Prochaska, et al, 1992; Marcus and Simkin, 1994). It is grounded in social cognitive principles. The model was developed to help understand more about the determinants of smoking. One of the major themes of this model is that behaviour change involves movement through a series of stages before change is achieved. These stages

appear to exist for both self-changers and those attending a treatment programme. The entry point to the change process is the precontemplation stage. At this point the subject is not considering the possibility of change at all. The next stage is contemplation, when subjects start to consider the need for change. This stage is characterised by ambivalence where the subject simultaneously thinks about reasons for change and the amount of effort, energy and loss that may be required to achieve change. After considering all of the pros and cons of change, subjects will make a commitment to change and move to the preparation stage. Subjects at this stage are seriously intending to change their behaviour in the very near future and are seeking a change strategy that is acceptable, accessible, appropriate and effective. When individuals begin to modify their behaviour they are said to be in the action stage. The action stage continues for up to six months after which subjects move into the maintenance stage. During this stage subjects have successfully modified their behaviour for a period of time and are working to prevent relapse. Relapse is the rule rather than the exception in behaviour change and most people will travel around the stages of change

Table 3: Processes of change that mediate progression between the stages of change

Precontemplation	Contemplation	Preparation	Action	Maintenance
	Consciousness raising			
	Dramatic relief			
	Environmental re-evaluation			
	Self re-evaluation			
		Self liberation		
			Counter conditioning	
			Helping relationships	
			Reinforcement management	
			Stimulus control	

a number of times before achieving permanent change.

One of the most important lessons to be learnt from research into this model is that different processes or strategies are required at the different stages. The model argues that matching the right processes to each stage facilitates change, while mismatching processes and stages will hamper change. Table 3 shows the matching of processes to stages proposed by the model. A number of the processes are similar constructs to those already described for other models.

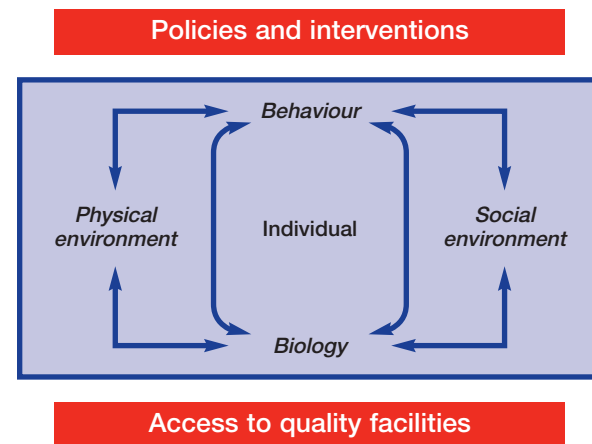
Although this model is intuitively appealing and has received much support from practitioners, the research evidence supporting a stage-based approach over a non-stage-based one is equivocal. While there is no doubt that stage membership is associated with levels of physical activity,

there is less evidence that interventions tailored to stages lead to greater changes in physical activity than interventions based on non stage-matched interventions (Marshall and Biddle, 2001; Riesma et al, 2002).

2.7 Wider determinants of physical activity

A state of the evidence review of the influences on physical activity called for a 'transdisciplinary' model of physical activity encompassing personal, social and environmental constructs (King et al, 2002). A useful framework for considering such an integrative approach to the determinants of physical activity can be adapted from one first proposed for understanding the determinants of health (US Department of Health and Human Services, 2000). The array of physical activity determinants is shown in Figure 4 (overleaf).

Figure 4: Determinants of sport/physical activity



Individual determinants are those referred to in the section above and include attitudes, beliefs, knowledge and skills. They are shaped by the physical and social environment as well as previous and current physical activity behaviour. Previous success with physical activity and the immediate consequences of current behaviour inevitably shape these intra-personal determinants.

Biology refers to the individual's genetic makeup at birth. Certain physiological dispositions may make physical activity more or less likely. It also refers to the family history, which can influence the risk for disease, as well as the physical and mental health problems acquired during life. Physical activity across the life course can influence various indicators of health, fitness and physical function, thereby changing the biology for the individual.

Behaviours reflect how individuals respond to internal stimuli (such as described in the section on psychosocial models) and external conditions. Behaviours have a bi-directional relationship with biology, with each reacting to the other. Physical activity can increase endurance capacity, strength and functional capacity making a wider range of physical activities less physically demanding and thereby more attractive. Similarly, a family history that includes obesity, diabetes or heart disease (biology) may motivate an individual to adopt a physically active lifestyle to prevent such diseases (biology). Further, poor maternal and child health and restricted early development, may lead to a physiological disadvantage for participants in certain sports and leisure time activities.

The social environment reflects interactions with family, friends, work colleagues, and other people in the community. It also includes institutions, such as the police, the workplace, churches, community centres and schools. Housing, transport and public safety are also aspects of the social environment that may influence physical activity. The social environment encompasses cultural diversity and religious and personal beliefs. The social environment can affect personal and

community levels of physical activity directly and at the same time, individuals and their physical activity can contribute to the quality of the social environment. For example, a greater prevalence of walking and cycling for transport and less car dependency would be expected to decrease concerns about public safety and increase social interaction.

A person's social position whether measured by household income, education, occupational grade, or neighbourhood deprivation reveals variation in physical activity, with those in less advantaged positions generally reporting less physical activity. How social position mediates physical activity is not clearly understood. Nevertheless, attitudes and beliefs towards physical activity, the number of obstacles and level of social support, opportunities for physical activity, the provision of leisure services and the cost of the services have all been shown to vary with social position (Wardle and Steptoe, 2003, Estabrooks et al, 2003, Parks et al, 2003). These factors will also vary according to ethnic group, gender and life-stage (older adult, adolescence, childhood etc) (King et al, 2000)).

The physical environment predominantly refers to the built environment but might also include other aspects of the environment such as

pollution. The physical environment can also promote physical activity by providing clean and safe places for people to be active. This might include cleaner and safer roads and pavements for cycling and walking for transport, as well as the protection of pleasant open and green spaces for physical activity for leisure. Living and working environments can also influence physical activity. Easy access to attractive stair wells rather than lifts/escalators, access to a garden, car-free shopping areas, showers and changing rooms at work, safe areas for bicycle storage, degree of automation/energy saving devices (remote controls, computer games, televisions etc) are all examples.

The prevalence of physical activity in part will depend on access to quality leisure provision, including sport/leisure centres, swimming pools and public parks. Expanding access to quality leisure services is an important aspect of reducing social variance in physical activity. Evidence from the US shows that in some areas the provision of leisure services is greater in high socioeconomic areas as is the proportion of that provision that is free at the point of delivery (Estabrooks et al, 2003). Leisure provision is not restricted to buildings and physical space but also incorporates information about services and how to access them.

3. Methods & Results 2

3.1 Review of Quantitative Studies

This section of the report presents the results of a descriptive review of recent UK published quantitative surveys on attitudes to sport and physical activity.

Background

There are significant limitations to the use of quantitative methodologies in the investigation of attitudes to any subject. The limitations of space on a questionnaire, and the need for pre-coded multiple-choice style answers mean that it is very difficult to investigate responses in depth. However, surveys are useful as they give a clear indication of the prevalence of a particular attitude.

By including surveys with representative samples, we were able to explore how common specific attitudes within this review are in the population. This provides a valuable foundation for the more detailed investigation of attitudes through qualitative research.

3.2 Methods

Search strategy

We conducted a search on PubMed to identify appropriate studies, supplemented with reviews of personal files. We contacted leads in health promotion agencies in each country

and leading researchers in the area, along with individuals in key government departments and national agencies.

Inclusion criteria

Studies were included if they were cross-sectional surveys which used large random samples and included questions on attitudes to sport and physical activity. In all cases except one the surveys described their sample as nationally representative. One non-representative survey was included (Schools Health Education Unit, 2004) as it used a very large sample and provided some very useful analysis. Other criteria were: (i) the survey also had to have been conducted in England, Wales, Scotland or Northern Ireland since 1990; (ii) the survey had to have been published either in the peer reviewed literature or as a report in the 'grey' literature.

3.3 Results

Studies identified

We found 12 quantitative studies carried out among adults, and 12 studies among children. After reviewing each study and applying the selection criteria, 10 adult studies and 5 studies of children were included. The main reason for exclusion was that the studies did not include attitudinal measures.

2.8 Summary of models of health behaviour

Although these models go some way in helping us understand physical activity behaviour, and have influenced interventions, no one model can explain a high percentage of the variance in physical activity. This might be expected as the models focus on personal level factors and give less attention to environmental ones (King et al, 2002). The main criticisms have been that the individual level theories assume that humans behave rationally and generally seek to maximise their welfare, and that behaviour is predominantly under volitional control. These assumptions discount the role played by culture and the environment. More research is required to help us understand the complex relationship between the determinants of physical activity. In particular, we need to understand more about social-ecological models. They refer to the interaction between people and their social and physical environments (Stokols et al, 1996). In practice this means that environmental and policy variables would be expected to add to the explanatory power of just intrapersonal and interpersonal variables. It has been argued that such variables hold the most promise in understanding physical activity (Sallis and Owen, 1999).

Details of included and excluded studies are in Tables 1-4 in Appendix 1.

The surveys used random samples from the 'general population', as well as people with a disability, and ethnic minority groups. Attitudes to sport and physical activity were typically only a minor component of the surveys, which tend to focus principally on assessing participation levels in physical activity and sport.

Studies of children and young people have been carried out in most UK countries but these often do not include attitudinal measures. As a result, only studies from England and Northern Ireland were included. Due to the small number of studies using random samples of children and young people we therefore included additional data from a large non-representative sample, and from some studies carried out in the European Union.

3.4 Adult studies

Attitudes to physical activity

A small number of studies introduced the topic of physical activity by asking questions about general attitudes to physical activity and sport. It appears that the majority of people in these surveys held very positive general attitudes to physical activity. For example, the

National Fitness Survey (Sports Council and Health Education Authority, 1992) showed that physical activity was ranked fourth overall in people's list of factors that they thought to be important, behind 'getting out and about'; controlling their weight; and smoking. In the HEA Panel Survey (Hillsdon et al, 2001) 56% of the sample agreed with the statement that 'exercise is important for health'. Attitudes were also consistently positive among samples from black and minority ethnic groups: in the HEA survey (Rudat, 1994) two-thirds of ethnic minority males and around half of the females agreed that 'exercise is one of the most important things to improve health'.

It is interesting to note how these generally positive attitudes to physical activity compared to other countries. In a survey of adults (aged 15+) carried out in 15 member states of the European Union (Kafatos et al, 1999), 25% of the UK sample agreed with the statement that 'physical activity is among the most important influences on health'. This was higher than the EU average (18%) but lower than Finland, where 44% of people agreed with the statement. Finland is often hailed as a case study of a country with a strong ethos for physical activity, and this is reflected in the response to this question.

Knowledge

There are two main areas of knowledge which were assessed in physical activity surveys: knowledge of 'general' health benefits, and more detailed knowledge of specific issues, particularly the recommended amount and type of physical activity.

Few surveys measured knowledge of the 'general' benefits of physical activity, but those that did found that the level of knowledge was generally quite high. For example, in the HEA survey of black and ethnic minority groups (Rudat, 1994) around 4 in 10 of respondents from ethnic minorities said that physical activity could help in preventing being overweight. However, knowledge of specific recommendations on physical activity was generally poor. In the HEA Panel Survey (Hillsdon et al, 2001) only 15% of the sample could correctly identify the 'correct' recommendation for physical activity (at least five sessions of at least 30 minutes of at least moderate intensity physical activity per week) when asked separately about each element of the recommendation. In Scotland (HEBS, 2000) 34% of the sample chose the correct recommendation from a list of prompts.

There is clearly a potential role here for campaigns and other communication activity,

as levels of detailed knowledge are low and could potentially be improved through communication. However, the extent to which any changes in knowledge would lead to behaviour change is uncertain. This is a potentially fruitful area for future research.

Barriers

Questions about what stopped people from being active – barriers – were common in the surveys reviewed. Most surveys used a list of common barriers as prompts, asking people which ones applied to them.

Lack of time was the most common barrier in all the surveys carried out among representative population samples. For example in the National Fitness Survey (Sports Council and Health Education Authority, 1992) 43% said this was the main barrier, in the HEA panel survey (Hillsdon et al, 2001) it was 36%, and in the HEA survey of black and minority ethnic groups (Rudat, 1994) it was identified by 20%. In all of these cases, time was seen as the most important barrier, ahead of others such as not being sporty, or not having a place to go or people to be active with. The only exception to this was with disabled people: in the Sport England survey (Gatward and Burrell, 2002) 60% of the sample said that they were limited by 'health' with only 6% saying 'time'.

Beneath this initial response that lack of time stops people from exercising, there are a number of more complex barriers. In the National Fitness Survey (Sports Council and Health Education Authority, 1992) 38% of women said that being ‘not the sporty type’ put them off physical activity. This was the 2nd reason (behind time) but was much higher among women than among men: 24% of men said they were not the sporty type.

Interestingly, a low proportion of people from black and minority ethnic groups identified not being the sporty type as a barrier (Rudat, 1994) between 10-17% identified this as a factor. Far more important – especially for women – was a concern about going out alone – identified by 16-18% of each ethnic group. Also, cultural reasons were more important for some groups, such as Muslim women.

High proportions of people from across the surveys identified being ‘too tired’ to do physical activity or preferring to ‘rest and relax’ rather than be active.

Self assessment of levels of physical activity and sport

The National Fitness Survey (Sports Council and Health Education Authority, 1992)

included a number of questions on people’s assessment of their own level of physical activity and fitness, and used these to identify what they termed the ‘perception gap’ – the difference between how active and fit people think they are, and how active and fit they actually are.

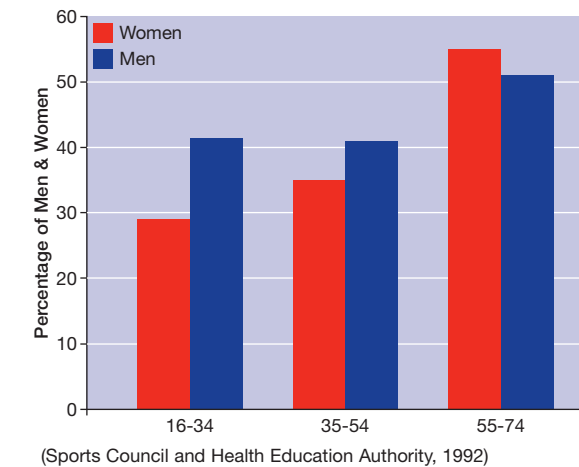
The survey found that there were significant gaps between perception and reality. For example, the survey revealed high proportions of people who were classed as sedentary (from the detailed physical activity questionnaire) but who agreed with the statement that they did ‘enough exercise to keep fit’. This varied from around a third of sedentary 16-34 year olds to over half of sedentary 50-64 year olds. This issue could be highly significant as it seems likely that people who think they are active enough will not be motivated by messages to do more.

Surprisingly this issue has not been included in surveys since the National Fitness Survey.

Motivation and intention

Some surveys included some sort of measure of the main factors that motivate or encourage people to take part in physical activity. In the majority of cases people claim that the main

Figure 5: The Proportion (%) of men and women classed as sedentary from the detailed questionnaire, who say that they get enough exercise to keep fit



reasons are to do with health – either expressed as phrases like ‘to improve and maintain my health’ or ‘to feel better’. For example in the National Fitness Survey (Sports Council and Health Education Authority, 1992) 88% of men and 89% of women said they exercised to ‘feel in good shape physically’ and similar proportions said they exercised to ‘improve or maintain my health’. In the Northern Ireland Survey 90% said they were active for ‘good health’ and 88% ‘to feel better’ (Northern Ireland Statistics and Research Agency, 2000). Walking seemed to be noted as a particularly enjoyable mode of activity – for example in the HEMS survey 46% of men and 60% of women say that moderate activity like a daily walk is an enjoyable way to keep active (Bridgwood et al, 1998).

Surveys frequently asked whether people had any intention to do more (or less) physical

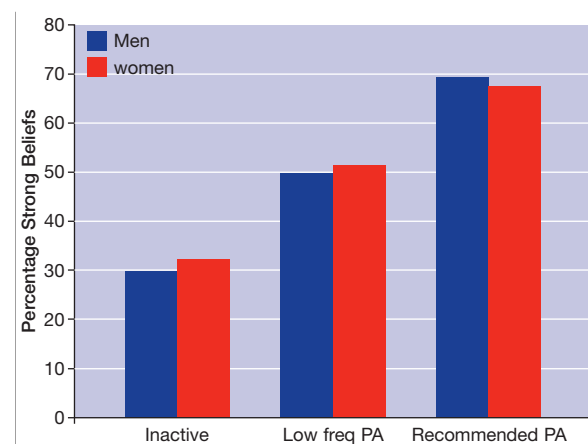
activity and some attempted to locate the sample on a continuum or in ‘stages of change’. It appears that a large proportion of most samples are in what might be termed ‘chronic contemplation’. At any time between 30% and 60% of people say they want to do more exercise. This may seem disappointing: that so many people are unable to put their good intentions into action. However it can also be viewed in a positive light: that people want to do more activity and so would be receptive if it was packaged well or if opportunities to be active were increased.

3.5 Children and young people

As noted earlier there were fewer studies among young people, so findings are more tentative.

The first point to note is that young people appeared to have strong beliefs in the value of activity – at least at a basic level. In Sport England’s survey (Sport England, 2002) 95% of young people agreed that it is ‘important to keep fit’. The importance of this was demonstrated in the EU survey of students (Haase et al, 2004) which demonstrated the strong dose-response relationship between beliefs in the value of physical activity, and participation in physical activity. This is shown in Figure 6 overleaf.

Figure 6: The proportion of students with strong beliefs in the importance of physical activity for health, in relation to reported frequency of leisure-time physical activity (Haase et al, 2004)



In this survey (of students aged 17-30 years) participation in physical activity was strongly related to levels of belief in the importance of physical activity for health.

However, the same study showed that more detailed knowledge of the health benefits of physical activity – such as its potential in reducing the risk of heart disease - was generally poor, and varied considerably between countries.

Within the UK studies there appear to be very high levels of general enjoyment of sport and physical activity. In the Exeter survey (Schools Health Education Unit, 2004) around 80% of 10-11 year olds said they enjoyed physical activity ‘a lot’, while in Northern Ireland 86% of young people say that they enjoy taking part in physical activity (Northern Ireland Statistics and Research Agency, 2000).

Among disabled young people (where enjoyment levels might be expected to be lower, depending on the type of disability) 65% of young people with a disability said they enjoyed sport and exercise in their leisure time (Finch, 2000).

Young people’s barriers to sport are seen to be very different from those quoted by adults. For young people, lack of time is clearly not the main issue. Far more important for young people are the more practical issues of the experience of doing physical activity. For example 49% of young people said that they did not like ‘being hit, kicked or falling over during sport’ (Sport England, 2002). In Northern Ireland barriers were seen as sport or exercise being ‘too boring’ (24%) or ‘too difficult/tiring’ (16%) (Northern Ireland Statistics and Research Agency, 2000). Among young people with a disability, barriers were more likely to be specific health problems which limited enjoyment of activity (Finch, 2000).

3.6 Summary of quantitative surveys

This review of quantitative studies has provided some useful initial indicators of the most prevalent attitudes to physical activity and sport in the UK. As stated above, quantitative survey methodologies have

significant limitations in the measurement of attitudes, but they do provide some useful pointers for the next stage of the study, and for future research and policy in the area.

Firstly, it does appear that the majority of people hold very positive attitudes to physical activity – at least in terms of their initial reactions to the subject, when asked as part of a survey. These initially positive views are consistent across a number of samples, and higher than the EU average.

Levels of knowledge about the general benefits of physical activity are high – again in terms of an initial response to a basic ‘physical activity is good for health’ type of question. However, more detailed knowledge about the specific benefits of physical activity – and the detailed recommendations – is generally lacking. Very few people know how much activity is recommended for health.

This issue may also be connected with the difficulty that many people appear to have with self-assessment of their physical activity level. This is either due to confusion over what is enough, or due to inaccurate assessment methods. Either way, this area is a fruitful area for communication activity, ideally linked with local providers of sport and physical activity opportunities.

There is evidence to support the idea that many people in the UK are in what might be termed ‘chronic contemplation’ – thinking about doing more physical activity but not quite getting around to it. Between one third and two thirds of people are in this stage at any one time. They are motivated by a number of key factors – notably health and feeling in good shape for adults, and fun and enjoyment of sport for young people – but not enough to make them change behaviour. Encouraging people to move from contemplation to action is clearly a major challenge.

So what stops people being as active as they want to be? The most frequently cited barrier is lack of time, after other responsibilities (work, childcare) have been taken care of. Beneath this, are a number of more complex barriers, some of which are to do with the image of sport, and others to do with more practical barriers to participation. Reducing the impact of these real (and perceived) barriers is an essential area of activity, to help people tip the balance in favour of physical activity.

4. Methods & Results 3

4.1 Review of Qualitative Studies

This section of the report presents the results of a systematic review of UK published and unpublished qualitative research studies which have examined children's and adults' reasons for participation and non-participation in sport.

Background

Qualitative research aims to understand the meaning of experiences for individuals and place these meanings in social context. Data for these studies often come from interviews and focus groups. These data are generally more in depth and involve fewer participants than quantitative research.

4.2 Methods

Search Strategy

The review of qualitative research covered the period from 1990 to 2004. Research papers were sourced in three ways:

1. Peer reviewed literature was searched using databases including Medline, CINAHL, Index to Thesis, ISI Science Citation Index, ISI Social Science Citation Index, PAIS International, PSYCHINFO, SIGLE, SPORTS-DISCUSS.

2. A network of qualitative researchers was asked to identify published reports and other grey literature that fit the research criteria.

3. Potentially relevant papers were identified from the reference sections of papers sourced in steps 1 and 2.

Inclusion Criteria

Papers that met the following criteria were entered into the next phase of the review if:

- The aim of the study was to explore the participants' experiences of sport and reasons for participation or non-participation in sport;
- The study collected information on participants who lived in the UK;
- The study examined reasons for participation in those sports and physical activities recognised by national Sports Councils and also as 'Community Amateur Sports Clubs';
- The study presented data collected using qualitative methods.

Two researchers reviewed each paper independently. Results were compared and discrepancies discussed. Data were extracted using a review schema developed by the research team (Appendix 3).

4.3 Results

More than 1,200 papers were identified by the initial search strategy. A total of 24 papers were accepted into the final stage of the review. The majority (16) of research was set in the community; three studies were set in schools and sports clubs.

The publication of qualitative research about participation in physical activity and sport in the UK is increasing. Of the 24 papers reviewed, most were published during or after 1997 (Figure 7).

Study authors described research participants in different ways although some grouping was possible. Seven studies involved research with younger children or teenage girls, three related to middle-aged participants and three reported on older people (Table 4).

Table 4: Participant characteristics (age)

Participants	Count
<i>Younger children</i>	2
5-15 children and their parents	
9-15 year old children	
<i>Teenage girls and young women</i>	5
14 year old girls	
15 year old girls	
Year 9 girls	
Teenage girls	
Young women 16-24	
<i>Young people 18-30</i>	1
South Asian and black people (18-30)	
<i>Middle age people 30 -65</i>	3
Men 30-61 years old	
People aged 30-65	
Middle aged men	
<i>Older people 50 +</i>	4
Older people 50+	
Newly referred older women (50+)	
People aged over 60	
Total	15

Figure 7: Publication year of papers reviewed (n = 24)

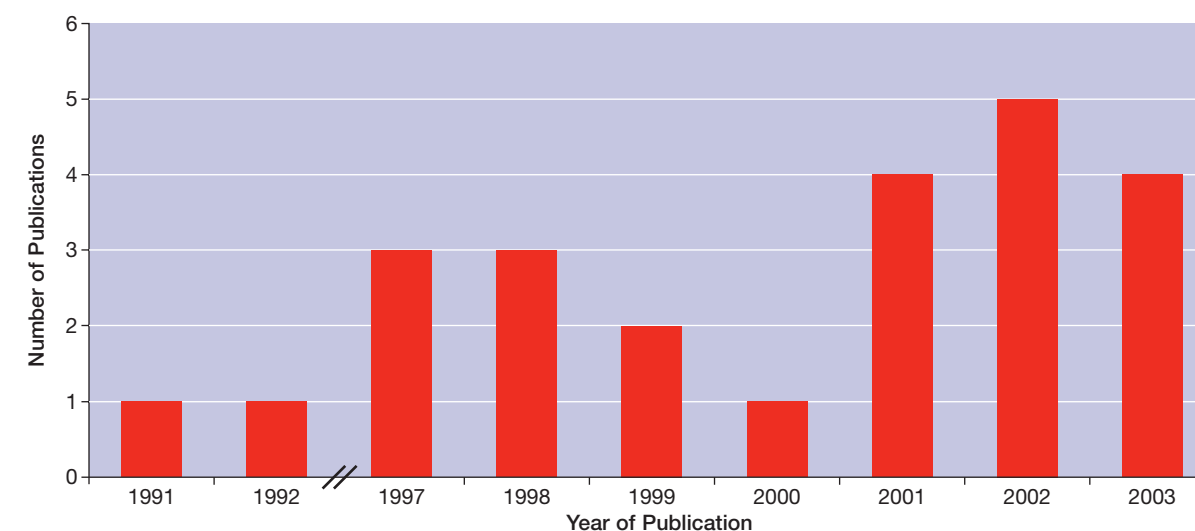


Table 5: Participant characteristics (other descriptors)

Participants	Count
<i>Socio economic status</i>	3
Working class families	
Low income women	
Public and private patients	
<i>Exercise level</i>	2
Elite runners, runners and joggers	
Exercisers and non exercisers	
<i>Ethnicity</i>	2
Scots, Pakistanis, Chinese, Black Africans, Bangladeshi & African Caribbean	
South Asian and Black people (18-30)	
<i>Other</i>	3
Physically impaired, hearing impaired, visually impaired, learning difficulties	
Gay men, disabled men and health workers	
Members of 3 English Sporting National Governing Bodies	
Total	10

Other studies described participants in terms of socio-economic status, ethnicity and level of exercise (Table 5).

Studies used interviews, focus groups, or a mixture of the two (Table 6).

Most papers (15) did not specify a theoretical framework (Table 7). Three studies used grounded theory and three used a feminist framework.

Table 6: Study design

Study design	Count
Interview	11
Focus groups	5
In depth interview/focus group	6
Discourse analysis	1
Ethnographic methods	1
Total	23

The lack of theoretical framework was one reason why the majority of studies were rated as low (13), between low and medium (7) quality and only four were rated as medium quality.

Few papers presented adequate data to support conclusions made and a number did not describe the methods for analysis.

Table 7: Theoretical framework informing research

Theoretical Framework	Count
None stated	15
Feminist theory	3
Grounded theory	3
Gender relations	1
Figurational sociology	1
Sidentops model of participation	1
Total	24

4.4 Reasons for participation in sport and physical activity

Participants generally recognised there were health benefits of physical activity and sport. Weight management, social interaction and enjoyment of exercise were also common reasons for participation.

Concerns about body shape were the main reasons for the participation of young girls. A number of studies reported pressure to conform to popular ideals of beauty as important reasons for teenage girls being physically active. Girls were also more likely to participate if the activity emphasised fun and enjoyment and provided the opportunity for social interaction with friends.

Along with general health benefits, older people identified the importance of physical activity in staving off the effects of ageing. Social dancing was successful in maintaining participation in older people. Participants described dance as challenging traditional expectations of older people being physically infirm. As people aged and became less physically able, graduated levels of dancing meant continued participation was possible. Participation was also maintained across other major life events such as bereavement because other participants at dances provided a support network.

4.5 Barriers to participation in sport and physical activity

Challenges to identity such as having to show others an unfit body, appearing incompetent at core skills and, for women, appearing overly masculine were identified as barriers to participation. Participation was also hampered by difficulty in accessing, and the poor state of, facilities. A number of studies reported participant concerns with the cost of joining sporting clubs and fitness gyms.

A number of authors concluded that an emphasis on the enjoyment and social benefits of physical activity was a good way to promote participation. A move away from authoritarian and prescriptive statements about the health benefits of exercise was another common recommendation. Many studies showed that people could not identify with the models of perfection used to promote physical activity and that 'real life' role models would be more effective. This finding held true in studies of older people, those from diverse ethnic backgrounds and teenagers.

More variation in the types of physical activity offered was seen as a way of increasing interest among school children. During adolescence, flexibility in PE uniform, privacy in changing rooms and greater variation in the

5. Implications for sport and physical activity promotion policies

activities offered was important. Girls PE kit was described as uncomfortable and embarrassing by most teenage girls. A better understanding of pressures to manage changing identity and new body images was particularly relevant for teenage girls. A further problem was the dominance of boys in competitive PE classes and the lack of support for girls from teachers.

Changes in stage of life such as leaving school, having children, children leaving home, retirement and losing a spouse were all identified as crucial points in the maintenance of physical activity and sport. At each stage a shift in social network occurs along with a shift in identity. These stages are recognised in a number of studies as time where drop-out is most likely.

This section of the report presents a discussion of the results of the three reviews (models, quantitative and qualitative). It suggests options for approaching the promotion of physical activity by starting with the underpinning of each action with theory and then linking in the quantitative and qualitative reviews.

The following is a list of suggestions for promoting physical activity based on the existing intervention/determinants theoretical literature. The focus should be on increasing expectancy values (the extent to which people believe becoming more active will benefit them) building confidence for physical activity, increasing opportunities and reducing obstacles. For the purpose of this document resource implications have been ignored.

A useful framework for considering the development of a strategy for promoting physical activity is that used for reducing smoking rates. Over recent years efforts to reduce smoking rates have included individual 'counselling' via smoking cessation nurses based in primary care and hospitals. This is backed up by a national smoking helpline. Legislation has been employed to reduce opportunities for smoking, mainly in the workplace. Fiscal policies have led to

incremental increases in the cost of smoking and mass media campaigns have highlighted the health consequences of smoking.

Physical activity interventions have shown that counselling by exercise specialists based in primary care can lead to at least short to mid-term increases in physical activity (Thorogood, 2004). The focus of such interventions should be firmly based on the theories of individual behaviour change discussed earlier. With a short measure of physical activity for use in general practice being developed (Hillsdon, personal communication, 2004), it should be possible to identify the most inactive people for whom referral to an exercise specialist would be appropriate. This would require a network of specialists to be established and the development of a model of delivery to ensure each recipient received a standardised level of care. Other settings for physical activity and sport promotion specialists to operate could be at Connexions Centres for young people, benefits agencies and the workplace.

To provide a supportive environment for physical activity there needs to be an increase in opportunities to be active. This means protecting existing spaces/places for physical activity as well as the development of new places. Apart from dedicated leisure/sport

centres, opportunities for physical activity should be promoted in all aspects of life including cycle lanes, well lit pavements etc. It could be possible to introduce legislation that requires companies to support people who wish to walk/cycle to work by providing safe/protective places for bicycle storage as well as shower/drying areas. Tailored active transport plans can lead to modal shifts and would be a positive health initiative in the workplace (Ogilvie et al, 2004). Rather than using mass media to promote the health benefits of physical activity, which are relatively well known, local media should be used to inform people of all the opportunities to be active in their community including leisure centres, parks, open spaces, safe walking/cycling routes to work and retail outlets. In the same way that historic buildings etc are signposted with brown signs, a similar signposting system could be developed for opportunities to be physically active.

For young people, it is important to reverse the 'no ball games' culture and increase opportunities for active play in their immediate environment. This should include places and spaces that encourage non-structured spontaneous physical activity. There should be a bias towards increasing opportunities for physical activity in deprived areas where the prevalence of physical activity is lowest. As

mentioned earlier, there is some evidence to suggest that free facilities are not clustered in the lowest income areas but rather the opposite. Planning and development policy can be used to avoid this. The new Sport England database of leisure facilities around the country (Activeplaces.com) should be heavily promoted. It could be possible for kiosks to be installed in non-leisure settings such as general practice to increase access to the database. It could also form the basis of a smoking equivalent national helpline which provides a menu of ways of being active in your local community.

Unlike smoking where fiscal policy has been used to increase the cost of smoking, in physical activity fiscal policy should be used to reduce the cost and increase access to physical activity. Is it really feasible for low income groups to swim or visit a leisure centre five times a week to meet public health guidelines? Also, since the early eighties the cost of using public transport has increased at the same time car use has become relatively cheaper. It may be possible to use subsidies to reduce the cost of public transport for those trying to be active. One possibility is to reimburse the cost of public transport to people presenting their ticket when paying for an exercise session or a swim etc. Fiscal policy can and is being used to reduce

sedentary activities such as driving. Perhaps the best example of a recent public health campaign to increase physical activity has been the congestion charges. The indirect effect of increasing the cost of one behaviour has led to an increase in others. Other examples of fiscal interventions could include tax incentives for Active Travel, VAT and personal tax, e.g. VAT status on physical activity related goods and services; employer provision of exercise opportunities; personal tax benefits and physical activity related expenditure (Foster et al, 2003).

Mass media could also be used to build confidence to be more physically active in different groups. Again, rather than focusing on the health benefits of physical activity, images should be used to show people being successful with a whole range of physical activities including active transport and play. One of the key elements of building confidence is observing someone like you successfully performing the intended behaviour. A range of images would be required covering different population groups and activities. Emphasis would be on enjoyment and mastery. This would be particularly useful for older adults.

The determinants of physical activity— individual, biological, physical and social

environments, policies and interventions, and access to quality leisure provision can have a significant effect on the prevalence of physical activity. A better understanding of these determinants, their relative importance and how they relate to and influence each other is critical to achieving a high prevalence of physical activity and the subsequent health gains. At present there is no population data that has all the relevant determinants in the same place. A greater understanding of the primary levers of physical activity could be obtained with such data. It may be possible to do this by collecting data via existing surveys but restrictions on space and competing priorities may prevent this. It may be necessary therefore to establish a new survey. In the short term existing data from a variety of sources could be collated to try and understand more about the wider determinants of physical activity described above. To date, nearly all research efforts on the determinants of physical activity have focused on personal level factors.

Policies and interventions that promote physical activity require a multi-agency approach including, transport, education, housing, employers, law enforcement, religious, sport/leisure, countryside, health, business and other community-based and

6. Recommendations for future research into determinants of sport and physical activity

voluntary organisations. Appendix 2 presents a brief analysis of the main sport and physical activity government policy documents of recent years. This looks at the extent to which attitudinal factors had been taken into account when formulating the national policies.

A number of themes emerge:

- Many government policies are setting out to ‘change attitudes’ or change cultures’ with only the most cursory analysis of any attitudinal factors;
- Many bold statements are made about attitudes and culture with little justification and few references;
- Research evidence is used in an extremely unstructured and unscientific manner. The most stark example of this is quoting from a US study of swimming among 10 year olds and extrapolating this to attitudes among the UK general population;
- Where evidence is used, it is often out of date. As in our review, the National Fitness Survey (Sports Council and Health Education Authority 1992) provided the most up to date data in one case;
- The Department of Transport’s proposals on walking and cycling were unique in being based on some – albeit limited – attitudinal research.

The implications for policy makers are clear:

- There is an urgent need for well-conducted qualitative research into attitudes to physical activity. This should investigate in depth the social and psychological barriers to taking part in sport and physical activity across the lifespan;
- Such research should be used to inform national policy-making on sport and physical activity, to inform the ‘culture shifts’ to which almost all government documents refer;
- In the absence of such evidence-based policy making we are likely to continue to see well-meaning policy statements from government which are not rooted in the realities of people’s lives.

This section of the report presents recommendations for future research into determinants of sport and physical activity for Sport England.

These recommendations are presented in the light of an evidence informed model of potential determinants of sport and physical activity. Figure 8 (overleaf) links together the key elements of this report from the theoretical review, quantitative surveys and qualitative studies. Key environmental and individual determinants are linked together to achieve two main domains of physical activity, sport and active transport.

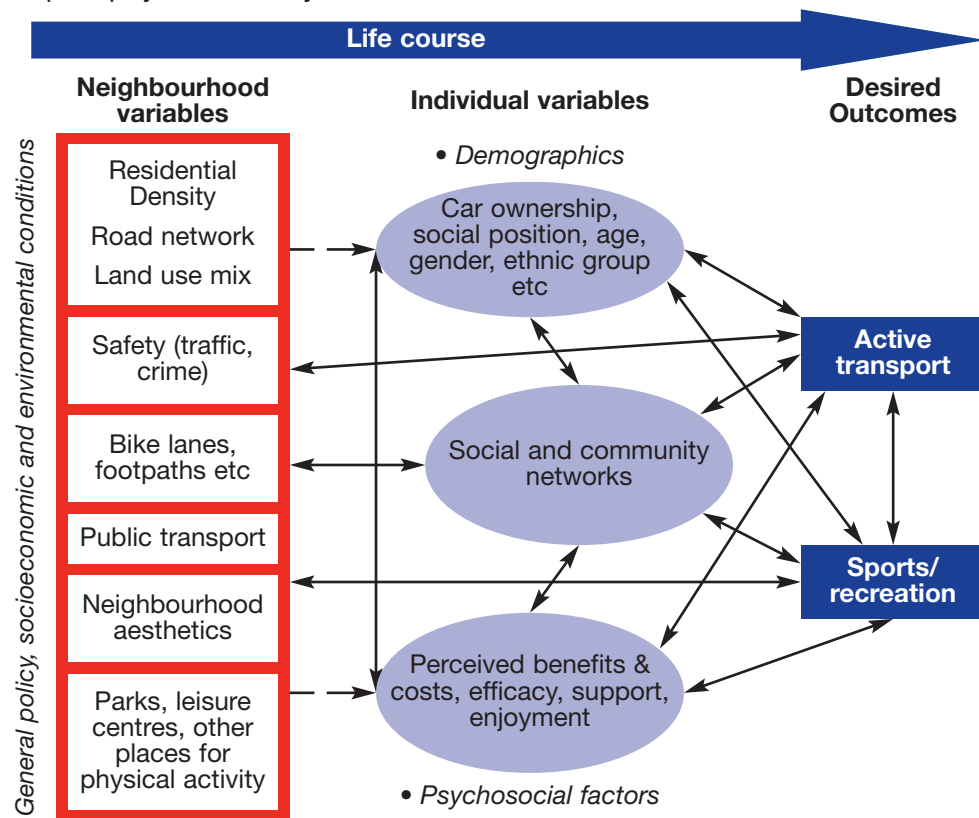
A number of demographic factors are correlated with increased sport/physical activity. Being male, younger and being in a high socioeconomic group are all associated with increased sport/physical activity. Car ownership shows a mixed relationship as the absence of a car leads to more active transport but at the same time ownership of a car can give greater access to opportunities for sport and leisure time physical activity. It is also an indicator of social position.

The extent to which a person participates in a community and interacts with others, so called social capital, is partly determined by how “walkable” a neighbourhood is and indirectly

therefore, how active the person is (Leyden K, 2003). A great deal of attention has been given to psychosocial correlates of physical activity as described earlier. Most of the interventions published to date have attempted to modify one or more of these factors in the hope this will lead to changes in sport/physical activity. As the resulting effects have been relatively small, greater attention is now being given to the built environment. The main areas of attention have been safety, opportunities for activity and access to those opportunities. When home, work, and local amenities are proximal and accessible more people will travel on foot and bicycle but when they are segregated into discrete areas then the car is more likely to be the preferred mode of transport.

While we can describe relationships between these four main groups of potential determinants it is less clear how they interrelate with each other. For example, simply building more leisure centres may not lead to increased participation if people do not feel safe going out alone, they don’t have a car to get there or the bus service is infrequent and inconvenient. Likewise, increasing a person’s motivation to be active and building their confidence will not lead to change if they have nowhere to go.

Figure 8: Evidence informed model of the potential determinants of sport/physical activity



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One source of data with measures of the full range of potential determinants would rapidly enable developments in our understanding of what the key drivers are in achieving change.

Inevitably, the relative importance of these groups of potential determinants may change over the life course. The type of environment that may encourage sport in young people may actually deter older adults from walking more. Critical periods for intervention are still unclear, for which groups of people.

For the purpose of this section three categories of participation are used as we

hypothesise that people will change or remain in one of three general behavioural groups throughout their lives (life course):

- (i) the always participates – people who participate in high levels of sports and leisure time physical activities throughout their lives;
- (ii) the never participates – people who never participate in sports and leisure time physical activities throughout their lives; and
- (iii) the sometimes participates – people whose participation changes across their lives (e.g. never active to a little active and back to never active).

We propose a series of research questions that would use a mix of quantitative and qualitative methods.

1. What are the transitional phases in the life course (TPHILC) and their effect on participation in sport and physical activity?
2. How does this effect differ for people who always participate, sometimes participate or never participate?
3. Is this effect the same or different within a single population?
4. Is this effect the same or different between populations?
5. Can interventions be developed to support people at TPHILC?
6. How does understanding and experience of sport and physical activity change during transitional phases in the life course?
7. What impact does the changing understanding of sport and physical activity have on participation at TPHILC?
8. What actions and approaches do people use to maintain their participation levels in sport and physical activity at different TPHILC?

Little is understood about the relationship between social circumstances and participation levels in physical activity throughout people's lives. Although changing

people's social circumstances is beyond the remit of Sport England, the provision of sports programmes and facilities do impact on the social and environmental circumstances of people's lives. Research into examining the relationship between past and present social circumstances and participation in sport and physical activity combined with further qualitative research (as outlined previously) would help Sport England in developing interventions that understand social and environmental circumstances and work appropriately to encourage greater participation amongst those who have the greatest social needs. This phenomenon can be seen in the clustering of more health services in areas where population health is higher but need is less, than in more disadvantaged areas where health is poorer, needs are greater but services are less (the Inverse Care law). Research questions raised include:

1. What is the relationship between past, present or changing social circumstances and patterns of sports and physical activity over a life course?
2. What individual, social and environmental circumstances contribute to a low risk of low participation levels of sport and physical activity?

References

Understanding the experiences of the three activity groups, outlined above, using qualitative methods should ideally cover the whole life course, from cradle to grave. Clearly this would have considerable resource implications. Recent policy priorities have emphasised focusing upon the supporting physical activity and sport behaviours of children (from pre-school to school leaving) and older adults (Department of Health, 2004).

Future qualitative research should focus upon children, adolescents and young adults, and older people. For children, adolescents and young people four key life stages should be examined: (1) pre-school; (2) primary school; (3) secondary school; and (4) school leavers/1st job. Although it is commonly perceived that physical activity and sports behaviour tracks from young adulthood into adult life this belief is not supported by observational studies (Cavill and Biddle, 2001). Further qualitative research should capture children's experiences of physical activity and sport, as well as reflecting changes in activity levels across childhood and adolescence. The impact of leaving school or higher education and starting employment upon physical activity and sports participation is unknown.

Future qualitative research for older adults should examine experiences of physical

activity and sport from within the three identified groups. The research should draw upon the experiences of older people from different socio-economic groups, and from older adults with chronic diseases, commonly found and correlated with physical activity and sports participation.

Ajzen I (1985). From intentions to actions: A theory of planned behaviour. In: Kuhl J, Beckman J, editors. Action-control: from cognition to behaviour. New York: Springer.

Arthur & Finch (1999). Physical activity "in our lives". Qualitative research among disabled people. London: Health Education Authority.

Bandura A (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura A (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura A (2004). Health promotion by social cognitive means. Health Education and Behaviour 31: 143-164.

Barr-Taylor C, Miller NH (1998). Principles of behaviour change. In: American College of Sports Medicine. ACSM's resource manual for guidelines for exercise testing and prescription. 3rd Ed. Baltimore: Williams and Wilkins.

Blamey A, Mutrie N, Aitchison T (1995). Health promotion by encouraged use of the stairs. British Medical Journal 311: 289-290.

Bostock, L. (2001). Pathways of Disadvantage? Walking as a mode of transport among low-income mothers. Health & Social Care in the Community, 9(1), 11-18.

Bridgwood A, Rainford L, Walker A, Hickman M, Morgan A (1998). All Change? The Health Education Monitoring Survey one year on. London, Health Education Authority.

Brownell KD, Stunkard AJ, Albaum JM (1980). Evaluation and modification of exercise patterns in the natural environment. American Journal of Psychiatry 137: 1540-1545.

Cavill N, Biddle S (2001). The determinants of young people's participation in physical activity. In Young @ Heart, National Heart Forum. London, NHF.

Clark NM, Becker MH (1998). Theoretical models and strategies for improving adherence and disease management. In: Sumaker SA, Schron EB, Ockene JK, McBee WL, editors. The handbook of health behavior change. 2nd ed. New York : Springer Publishing Company.

Coakley, J., &White, A. (1992). Making decisions: Gender and sport participation among British adolescents. Sociology of Sport Journal, 9, 20-35.

- Cockburn, C., & Clarke, G. (2002). "Everybody's looking at you!": Girls negotiating the "femininity deficit" they incur in physical education. *Women's Studies International Forum*, 25, 651-65.
- Cooper, L. & Thomas, H. (2002). Growing Old Gracefully: Social Dance in the Third Age. *Ageing and Society*, 22(6), 689-708.
- Crone-Grant, D. M., & Smith, R. A. (1998). Exercise Adherence: A Qualitative Perspective. *Journal of Sport Sciences*, 16(1), 75.
- Crone-Grant, D. M., & Smith, R.A. (1999). Broadening Horizons: A Qualitative Inquiry on the Experience of Patients on an Exercise Prescription Scheme. *Journal of Sport Sciences*, 17(1): 12.
- Crone-Grant, D. M., & Smith, R.A. (2001). Exercise Referral Schemes in Public and Private Leisure - A Qualitative Investigation. *Journal of Sport Sciences*, 19(1): 19.
- Deci EL, Ryan RM (1987). The support of autonomy and the control of behaviour. *Journal of Personality and Social Psychology* 53: 1024-1037.
- Department for Culture Media and Sports/Strategy Unit (2002). Game Plan: a strategy for delivering Government's sport and physical activity objectives. Cabinet Office, London.
- Department for Culture Media and Sports (2000). A Sporting Future for All. The government's strategy for sport. London, The Stationery Office
- Department of Health (2004). Choosing health, making healthier choices easier. London, The Stationary Office.
- Department of Health (2004). At least five a week: a report from the Chief Medical Officer. London, Department of Health.
- Department of Health (2004). Chief Medical Officer's Annual Report 2003. Department of Health Publications 2004.
- Department of Health (2004a). Choosing health? Choosing activity. A consultation on how to increase physical activity. London, Dept of Health.
- Department of Transport (2004). The Future of Transport - White Paper. London, the Stationery Office.
- Department of Transport (2004a). Walking and cycling: an action plan. London, Department of Transport.
- Dishman RK (1990). Determinants of participation in physical activity. In: Bouchard C, Shephard RJ, Stephens T, Sutton JR, McPherson BD. Exercise, fitness and health: A consensus of current knowledge. Champaign: Human Kinetics, 75-102.
- Dishman RK, Sallis JF (1994). Determinants and interventions for physical activity and exercise. In: Bouchard C, Shephard RJ, Stephens T. Physical Activity, fitness and health: International proceedings and consensus statement 1992. Champaign: Human Kinetics Publishers, 214-238.
- Estabrooks PA, Lee RE, Gyurcsik NC (2003). Resources for physical activity participation: does availability and accessibility differ by neighbourhood socioeconomic status? *Annals of Behavioral Medicine* 25: 100-104.
- Finch, H. (1997). Physical activity 'at our age': Qualitative research among people over the age of 50. London: Health Education Authority.
- Finch, H., & White, C. (1998). Physical activity 'what we think': Qualitative research among women aged 16 to 24. London: Health Education Authority.
- Finch N. (2000). Disability Survey 2000. Young people with a Disability & Sport. London, Sport England.
- Fishbein M, Azjen I (1975). Belief, attitude, intention, behaviour: An introduction to the theory and research. Reading, Mass: Addison-Wesley.
- Flintoff, A., & Scraton, S. (2001). Stepping into active leisure? Young women's perceptions of active lifestyles and their experiences of school physical education. ,6, 5-21.
- Foster C, Cowburn G, Kaduskar S, Buckley C, Giles A. (2003). A review of the impact of the law on the promotion of physical activity for the Department of Health. British Heart Foundation Health Promotion Research Group and National Heart Forum, Oxford.
- Garcia AW, King AC (1991). Predicting long term adherence to aerobic exercise: a comparison of two models. *Journal of Sport & Exercise Psychology* 13: 394-410.
- Gatward R, Burrell T (2002). Adults with a disability and sport National survey 2000-2001. London, Sport England.
- Godin G (1994). Theories of reasoned action and planned behaviour. *Medicine and Science in Sports and Exercise* 26: 1391-1394.

Green BB, McAfee T, Hindmarsh M, Madsen L, Caplow M, Buist D (2002) Effectiveness of telephone support in increasing physical activity levels in primary care patients. *American Journal of Preventive Medicine* 22:177-83.

Haase A, Steptoe A, Sallis, J, Wardle J (2004). Leisure-time physical activity in university students from 23 countries: associations with health beliefs, risk awareness, and national economic development. *Preventive Medicine* 39; 82– 190

Hansbro, J., Bridgwood, A. with Morgan, A., and Hickman, M (1997). *Health in England 1996: what people know, what people think, what people do.* HMSO.

Hardcastle, S., & Taylor, A. (2001). Looking for more than weight loss and fitness gain: Psychosocial dimensions among older women in a primary-care exercise-referral program. *Journal of Ageing and Physical Activity*, 9, 313-328.

Health Education Authority (1996). *Black and minority ethnic groups in England: the second health and lifestyle survey.* London, HEA.

Health Education Authority (1997). *Physical activity 'at our age': Qualitative research among people over the age of 50.* London: Health Education Authority.

Health Education Board for Scotland (2000). *Indicators for Health Education in Scotland. Summary of findings from the 1998 health education population survey.* Edingburgh. Health Education Board for Scotland.

Hillsdon M, Cavill N, Nanchahal K, Diamond A, White I (2001). National Level promotion of physical activity: results from England's ACTIVE for LIFE campaign. *J Epidemiol Community Health* 2001; 55:0-6.

Kafatos et al (1999). Regional, demographic and national influences on attitudes and beliefs with regard to physical activity, body weight and health in a nationally representative sample in the European Union. *Public Health Nutrition*: 2(1a), 87-95

King AC, Barr Taylor C, Haskell WL, DeBusk RF (1988). Strategies for increasing early adherence to and long term maintenance of home based exercise training in healthy middle aged men and women. *American Journal of Cardiology* 61: 628-632.

King AC, Haskell WL, Barr Taylor C, Kraemer HC, DeBusk RF (1991). Group vs home based exercise training in healthy older men and women. *Journal American Medical Association* 266: 1535-1542.

King AC, Blair SN, Bild DE, Dishman RK, Dubbert PM, Marcus BH et al (1992). Determinants of physical activity and interventions in adults. *Medicine and Science in Sports and Exercise* 24 Suppl: S221-S236.

King AC, Stokols D, Talen E, Brassington GS, Killingsworth R (2002). Theoretical approaches to the promotion of physical activity: forging a transdisciplinary paradigm. *American Journal of Preventive Medicine* 23 (2S): 15-25.

Leyden KM. Social capital and the built environment: the importance of walkable neighbourhoods. *American Journal of Public Health* 2003; 93: 1546-1551.

Lombard DN, Lombard TN, Winett RA (1995). Walking to meet health guidelines: the effect of prompting frequency and prompt structure. *Health Psychology* 14: 164-170.

MacPhail, A., Gorley, T., & Kirk, D. (2003). Young people's socialisation into sport: A case study of an athletics club. *Sport Education and Society*, 8, 251-67.

Marcus BH, Simkin LR (1994). The transtheoretical model: applications to exercise behaviour. *Medicine and Science in Sports and Exercise* 26: 1400-1404.

Marshall SJ, Biddle SJH (2001) The transtheoretical model of behaviour change: a meta-analysis of applications to physical activity and exercise. *Annals of Behavioral Medicine* 23: 229-246.

McAuley E, Courneya KS, Rudolph DL, Lox CL (1994). Enhancing exercise adherence in middle-aged males and females. *Preventive Medicine* 23: 498-506.

Mulvihill, C., Rivers, K., & Aggleton, P. (2000). *Physical activity 'at our time': Qualitative research among young people aged 5 to 15 years and parents.* London: Health Education Authority.

Northern Ireland Statistics and Research Agency. (2001). *Health and Social Wellbeing Survey*

Northern Ireland Statistics and Research Agency. (2000). *Young Person's Behaviour and Attitudes Survey*

Ogilvie D, Egan M, Hamilton V, Petticrew M. (2004) Promoting walking and cycling as an alternative to using cars: systematic review *BMJ* 329: 763

Orme, J. (1991). Adolescent girls and exercise: too much of a struggle? *Education and Health*, 9(5), 76-80.

Parks SE, Housemann RA, Brownson RC (2003). Differential correlates of physical activity in urban and rural adults of various socioeconomic backgrounds in the United States. *Journal of Epidemiology and Community Health* 57: 29-35.

Petersen S, Peto V, Rayner M (2004). *Coronary Heart Disease Statistics*. London, British Heart Foundation.

Porter, S. (2002a). *Physical activity: An exploration of the issues and attitudes of parents of pre fives*. Scott Porter Research and Marketing.

Porter, S. (2002b). *Physical activity: An exploration of the issues and attitudes of teenage girls*. Scott Porter Research and Marketing.

Porter, S. (2002c). *Physical activity: An exploration of the issues and attitudes of men in mid years*. Scott Porter Research and Marketing.

Prochaska JO, DiClemente CC, Norcross JC (1992). In search of how people change: applications to addictive behaviours. *American Psychologist* 47: 1102-1111.

Rai, D., & Finch, H. (1997). *Physical activity 'from our point of view'*. London: Health Education Authority.

Reid EL, Morgan RW (1979). Exercise prescription: A clinical trial. *American Journal of Public Health* 69: 591-595.

Rhodes RE, Courneya KS. (2003). Investigating multiple components of attitude, subjective norm, and perceived behavioural control: an examination of the theory of planned behaviour in the exercise domain. *British Journal of Social Psychology* 42; 129-146.

Riesma RP, Pattenden J, Bridle C, Sowden AJ, Mather J, Watt IS, et al. (2002) A systematic review of the effectiveness of interventions based on a stages-of-change approach to promote individual behaviour change. *Health Technology Assessment* 6.

Robertson, S. (2003). 'If I let a goal in, I'll get beat up': contradictions in masculinity, sport and health. *Health Education Research*, 18, 706-716.

Rowe N, Champion R. (2000). *Sports Participation and Ethnicity in England National Survey 1999/2000. Headline Findings*

Rudat, K (1994). *Black and minority ethnic groups in England*. London, Health Education Authority

Sallis JF, Melbourne F, Hovell C, Hofstetter R, Barrington E (1992). Explanation of vigorous physical activity during two years using social learning variables. *Social Science & Medicine* 34: 25-32.

Sallis JF, Owen N (1999). *Physical activity and behavioral medicine*. California: Sage.

Schools Health Education Unit (2004). *Young People in 2003*.
<http://www.sheu.org.uk/pubs/yp03.htm#top> (accessed 9 Sep 2004)

Shaw, S., & Hoerber, L. (2003). "A strong man is direct and a direct woman is a bitch": Gendered discourses and their influence on employment roles in sport organizations. *Journal of Sport Management*, 17, 347-75.

Singh, S. (1997). Why are GP exercise schemes so successful (for those who attend)? Results from a pilot study. *Journal of Management in Medicine*, 11(4), 233-237.

Skinner BF (1953). *Science and human behaviour*. New York: Macmillan.

Smith, S. L. (1998). Athletes, runners, and joggers: Participant-group dynamics in a sport of "individuals". *Sociology of Sport Journal*, 15, 174-192.

Sonstroem RJ (1988). Psychological models. In: Dishman RK, editor. *Exercise Adherence: its impact on public health*. Champaign: Human Kinetics.

Sport England (2002). *Young People and Sport in England, 2002. A Survey of Young People and PE Teachers*. London, Sport England.

Sport England (2003). *Driving up participation in sport – the social context, the trends, the prospects and the challenges*. Sport England, London.

Sports Council and Health Education Authority (1992) *Allied Dunbar National Fitness Survey. Main Findings*. London, Sports Council. (1992)

Sproston K et al (1999). *Health and lifestyles of the Chinese Population in England*. London, Health Education Authority (1999).

Prime Minister's Strategy Unit (2001). *Game Plan: a strategy for delivering Government's sport and physical activity objectives*. London, the Strategy Unit.

Stathi A, McKenna J, Fox K. (2003). The experiences of older people participating in exercise referral schemes. *Journal of the Royal Society for the Promotion of Health* 124; 18-23.

Appendices

Appendix 1 Characteristics of quantitative surveys

Appendix 2 Key national sport and physical activity policies: a brief analysis

Appendix 3 Qualitative review schema

Appendix 4 Characteristics of qualitative studies

Stokols D, Allen J, Bellingham RL (1996). The social ecology of health promotion: implications for research and practice. *American Journal of Health Promotion* 4:247-51.

Thorogood M, Hillsdon M, Summerbell C (2004) Changing Behaviour. In: *Clinical Evidence*. Issue 11 . London: BMJ Publishing.

US Department of Health and Human Services. *Healthy People 2010: understanding and improving health*. Washington DC: US Department of Health and Human Services, 2000.

Wardle J, Steptoe A (2003) Socioeconomic differences in attitudes and beliefs about healthy lifestyles. *Journal of Epidemiology and Community Health* 57:440-3.

Weinberg R and Gould D (1999). *Foundations of Sports and Exercise Psychology*.

Appendix 1: Characteristics of quantitative surveys

Table 1a: Adult Surveys

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
National Fitness Survey (Sports Council and Health Education Authority (1992)	Sport Council/ Health Education Authority	Adults in England (16-74)	1990	Random probability sample n= 4316	i) self assessed activity ii) attitudes iii) Barriers	i) 82% said most people don't do enough exercise to keep fit. Yet 4/5 said they are very or fairly fit. Self-assessments of activity levels do not correspond with measured activity ii) Positive attitudes to physical activity (ranked 4th in list of concerns behind getting out and about; weight; smoking. Important factors: feel in good shape; improve health; feel a sense of achievement; get out of doors iii) Reasons for stopping: women – 17% work reasons; 16% lost interest. Men – 23% work reasons; 19% lost interest Main barriers: women 43% no time; 38% not sporty Men: 41% no time; 25% rest and relax
Black and minority ethnic groups in England (Rudat, K. 1994)	Health Education Authority	Adults (16-74) from 4 ethnic minority groups: African-Caribbean; Indian; Pakistani; Bangladeshi	1992, 1994	Multi-stage random sample in EDs with high proportions of specified groups. n=4,452	i) Importance to health ii) Knowledge of pa iii) Barriers	i) 2/3 most ethnic males say ex is one of the most important things to improve health (except Bangladeshis: 44%) females: 50% Indian and Pakistani; 68% African-caribbean; 36% Bangladeshis ii) High levels of awareness of benefits from pa – esp obesity iii) Time is main barrier. (around 20%) LOW numbers said not the sporty type (10%-17%). Not going out alone is key reason for women (16-18%)
Active for Life panel survey (Hillsdon et al 2001)	Health Education Authority	Adults in England (16-74)	1995, 1996, 1997, 1998	Original 1995 sample random using postcode address file clusters. Follow-up (cohort) design. Final n=2,679	i) Importance of pa. ii Knowledge of recs iii) Attitudes to pa iv) Intention v) Barriers	i) 56% say regular ex is important for health ii) 15% knew detailed pa recommendation iii) 46% men, 60% women say moderate activity like a daily walk is an enjoyable way to keep active iv) 30% likely to take more ex in the next 6-12 months v) Time: women 38% men 35% Not sporty: women 28% men 16%

Table 1b: Adult Surveys

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
Health Education Monitoring Survey (Hansbro et al 1997; Bridgwood et al 1998)	Health Education Authority	Adults in England (16-74)	1995, 1996, 1997	Random prob sample using postcode address files. Cohort N=4,314	i) Knowledge ii) Intention iii) Barriers	i) Around 70% think pa should last 30 minutes. 39% knew recommendation ii) Half think they do enough to keep fit. 2/3 want to take more exercise iii) 52% lack of time; 15% not sporty type
Health Education Population Survey (HEBS 2000)	Health Education Board for Scotland	Adults (16-74) in Scotland	1996, 1997, 1998. 2 Waves per year	Random probability sample n=900 per wave	i) Knowledge of pa recs ii) Barriers iii) Intention iv) Motivation to change	i) 34% know mod pa recommendation. 39% vigorous (higher among younger) 28% want to increase ex they do. 20% intend to do so in next 6 months ii) 56% say time is the main barrier iii) 36% women and 29% men have tried to do more in the past year. 45+ less likely to have tried to do more iv) Under 55s more likely to want to and intend to change pa. Older people less motivated
Health and lifestyles of the Chinese population of England (Sproston et al 1999)	Health Education Authority	Adults (16-74) from Chinese community in England	1998	Multi-stage random sample in EDs with high proportions of Chinese people. n=1,022	i) Importance to health ii) Pa levels iii) Barriers	i) 32% say lack of ex is bad for health (3rd). 44% say ex is good for health (2nd after food) ii) 67% think they are 'very' or 'fairly' active iii) Main barriers: lack of time (45% men 58% women) need to rest and relax (27%) and need to do other things (26%)
Sports Participation and Ethnicity in England 1999/2000 (Rowe and Champion 2000)	Sport England	Adults (16+) from 'non-white' groups	1998-2000	Random sample among defined ethnic groups n=3,084	i) Want to try new sport ii) Barriers	i) High proportions of individuals from all ethnic groups say that they would like to take part in a new sport (range 81% 'Black Other' to 51% Bangladeshis) ii) 'Home and family responsibilities', 'work/study demands', 'lack of local facilities', 'lack of money' and 'I am lazy/I am too embarrassed' are main reasons iii) 'Work/study demands most important for men (49% Indian men, 38% Black Caribbean men) ; for women 'home and family responsibilities' (49% Indian women; 41% black Caribbean women
EU-wide survey of attitudes and beliefs (Kafatos et al 1999)	Various universities across Europe	Adults (15+) in 15 EU member states	Not stated (pub 1999)	Quota sample n=1000 per member state	i) Importance of pa ii) Importance of pa for weight iii) Attitudes to pa	i) 25% of UK sample say physical activity is among the most important influences on health. Higher than EU average (18%) lower than Finland (44%) ii) 21% say pa is one of the most important influences on weight gain. Higher than EU average (17%) iii) ii) data presented for EU as a whole

Table 1c: Adult Surveys

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
'Adults with a Disability and Sport National Survey 2000-2001' (Gatward and Burrell (2002))	Sport England	Adults (16-59) with limiting long-standing illness	2000-2001	Random sample among people with a limiting long-standing illness. n=6,564	<ul style="list-style-type: none"> i) Enjoyment ii) Intention iii) Limitations iv) Barriers v) Needs 	<ul style="list-style-type: none"> i) 81% enjoyed most or some sports and pa when at school ii) 65% of those who play sport would like to play more. Swimming was most frequently mentioned iii) 60% say mainly 'limited by health'. Only 6% say time iv) Among those who do play sport, time becomes more important: 25% limited by health and 24% by time v) 18% say 'someone to keep me company' is the main thing needed
Health and Social Wellbeing Survey(NISRA 2001)	Northern Ireland Statistics and Research Agency	Adults (16+) in Northern Ireland	Feb-July 2001	N=5,205	<ul style="list-style-type: none"> i) Barriers ii) Motivators iii) Stage 	<ul style="list-style-type: none"> i) 41% too busy 40% no time 33% too tired ii) 90% for good health; 88% to feel better; 80% stay in shape. Least motivated were older, male, 61+, low ses iii) 24% pre; 11% cont; 32% prep; 5% action; 27% maintained

Table 2a: Adult Surveys – excluded from review

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
Travel National Survey	Department for Transport		Annual	"sample representative at local authority as well as national level"	<ul style="list-style-type: none"> i) Why not allow child to go alone to school? ii) Provision of cycle lanes iii) Conditions of pavements iv) % saying don't use car to go to [work; school; etc] as healthier to [walkcycle] (not directly relevant – not really attitudinal to walking) 	Data not relevant to question
Adult participation survey (report forthcoming)	Sports Council for Wales	Adults (15+) In Wales		N=22,000 (!)	<ul style="list-style-type: none"> i) Barriers ii) Attitude to pa 	Data not yet available

Table 3a: Children and Young People Surveys

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
Young People and Sport (and 'Trends in participation')	Sport England/ OPCS/ MORI	6-16 in England	1994, 1999, 2002	Random sample n= 3,000+ in each wave	<ul style="list-style-type: none"> i) Motivation ii) Confidence iii) Competition iv) Motivation v) Intentions vi) Dislikes of sport vii) Use of time 	<ul style="list-style-type: none"> i) Motivation to do sport highest for years . 95% agree 'it's important to keep fit' ii) Confidence in ability also increased: 81% say 'I am good at sport and exercise'. 70% 'I am a sporty person' iii) 'Competitive spirit' may have increased iv) 52% do sport and exercise to be with their friends v) 72% (increase of 3%) say they want to continue to do sport when they leave school vi) Main dislike is 'being hit kicked or falling over during sport' (49%). Only 10% say 'having to run around and be active' vii) 27% of all young people said they preferred to do sport (over all other activities) in their leisure time. Girls less likely to agree
'Disability Survey 2000 - Young People with a Disability and Sport'	Sport England	Young people (6-16) in England and Scotland with a disability	1999	Stratified sample among young people with a disability n=2,293	<ul style="list-style-type: none"> i) Enjoyment ii) Barriers iii) Whether left out of sport iv) Role models 	<ul style="list-style-type: none"> i) 75% agreed that they 'enjoyed PE lessons at school' (lower than for all young people). 65% said they enjoyed doing sport and exercise in their leisure time (cf 89% of all young people) ii) Health problems were an equal barrier to lack of facilities and lack of money (prompted). When unprompted, main reason by far was disability, mentioned by 43% iii) 79% have been left out of sport due to their disability iv) Only 36% could identify a role model (cf 70% of all young people)
Young Person's Behaviour and Attitudes Survey (NISRA 2000)	Northern Ireland Statistics and Research Agency	Children in years 8-12 in Northern Ireland.	2000	Random sample n=6,297	<ul style="list-style-type: none"> i) Views of pa ii) Barriers iii) Barriers to walk to school 	<ul style="list-style-type: none"> i) 86% say they enjoy taking part in pa ii) 24% too boring; 16% tired/too difficult; 14% get short of breath iii) 10% not enough time in the morning 9% too far
Young People in 2003 (SHEU 2003)	Schools Health Education Unit (Exeter)	Children aged 10-15 from 196 schools across the UK	From 1977-2004	Not nationally representative sample: compilation of data from 196 separate surveys using same tool n=15,526	<ul style="list-style-type: none"> i) Enjoyment of pa ii) Self assessed pa 	<ul style="list-style-type: none"> i) Nearly 80% of 10-11 year olds (and 65% of secondary age young people) enjoy pa 'a lot'. Lower levels among girls ii) Up to 69% of 10-11 year old pupils think they are 'fit' or 'very fit'. 26% of the 14-15 year old females describe themselves as 'unfit' or 'very unfit'. Perceived fitness declines with age in males and females

Table 3b: Children and Young People Surveys

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
International Health and Behaviour Survey (Haase et al 2004)	Various Universities across Europe	University students in 23 countries on specified courses	1999-2001	Quota sample of university students in 23 countries N=19,298	<ul style="list-style-type: none"> i) Beliefs in importance of pa to health ii) Link between pa and heart disease 	<ul style="list-style-type: none"> i) Strong beliefs in the importance of pa to health but only 40-60% of students aware that pa relevant to risk of heart disease ii) Strong cross-sectional association between beliefs and pa level

Table 4a: Children and Young People Surveys – excluded from review

Name of Survey	Commissioning Organisation	Population sampled (age)	Year(s) of fieldwork	Sampling details	Details of attitudinal questions	Main findings
The Health Behaviour of school-aged children 1997	Health Education Authority				None specific to pa – only general health	
Health and Health Behaviour among Young People.	World Health Organization Europe				None specific to pa – though they do correlate pa levels with some social factors	
Health behaviours of Scottish School- children	University of Edinburgh (and WHO)	11-15 year olds			Only behaviour – no attitudes	
Health Survey for England – The Health of Young People 95-97					Activity levels only – no attitudes	
National Diet and Nutrition Survey: young people aged 4 to 18 years	Office for National Statistics				Physical activity seven day diary only	
The Scottish Health Survey 1998					Only behaviour – no attitudes	
Health in Europe	Eurostat		1997-2000		Only behaviour – no attitudes	

Appendix 2: Key national sport and physical activity policies: a brief analysis

This brief analysis of recent key national sport and physical activity policies was undertaken to provide an overview of the extent to which policies had taken account of attitudinal factors. This was done in order that we could make more meaningful recommendations from our overall review.

Key documents were selected from the sport, health and transport sectors, and reviewed to assess the following questions:

- to what extent have prevailing attitudes towards sport and physical activity been considered in the writing of this policy document?
- How realistic are the recommendations in the light of the conclusions of this review?

1. GAME PLAN

This is a strategy for delivering Government's sport and physical activity objectives, published by DCMS/the Strategy Unit in Dec 2002. Game Plan provides “a broad context and research evidence for sports policy and its 50 recommendations complement and build on those in the Government's Plan for Sport”.

Brief analysis

Game Plan set out ambitious targets to

increase physical activity levels in the population, alongside recommendations to improve the provision of competitive sport.

It states that the aim is to “encourage a mass participation culture” but does not go into detail about the elements of culture which might need to be changed to increase participation. Many comparisons are made with Finland, where, it notes, a “sophisticated assessment of key behavioural drivers for each target group” was carried out.

It is clear that no such data on behavioural drivers were available to the Game Plan authors. They do look in detail at “developing our sports and physical activity culture” and draw on some attitudinal data including young people's attitudes to physical activity and barriers to participation. For example the report notes the importance of taking account of “the barriers which prevent people from participating (problems of time, cost or lack of information or motivation)” and notes that “lack of motivation is perhaps the key barrier to participation amongst certain groups” and that evidence (unreferenced) shows that motivation is greatly assisted where individuals are supported by friends, or partners.”

It suggests a number of techniques “to overcoming these motivational problems...

to embed sport in the mind of young people” and links this to a social marketing approach using the ‘stages of change.’

However, it is clear that these recommendations are made on very limited attitudinal data. They report only an “in-depth US study of 10-18 year olds who stopped swimming” and some psychological research (Weinberg and Gold 1999). The authors acknowledge this serious gap in understanding and note:

“throughout the sport and physical activity sector the quality and availability of data on facilities, participation, long term trends, behavioural and other factors is very poor.” (Our emphasis).

2. A SPORTING FUTURE FOR ALL

The Government's strategy for sport, A Sporting Future for All, sets out the Government's vision for sport in the 21st century and highlights the importance of co-ordinating sport between schools and local clubs and organisations.

Brief analysis

The strategy concentrates on the development of facilities for sport and the extension of sporting opportunities. It contains a number of

comprehensive proposals to address what is perceived as a shortfall in facilities. However, this is done with no reference to attitudinal or behavioural issues. The document does not contain a single use of the words ‘attitude’ or ‘behavioural’.

3. AT LEAST FIVE A WEEK: A REPORT FROM THE CHIEF MEDICAL OFFICER

This report presents “Evidence on the impact of physical activity and its relationship to health”. It is primarily a research report, although it does offer a number of research-based recommendations for ‘potential areas for action’. As such it should not be seen as a policy document, although it does provide some important context for future Department of Health policy in this area.

Brief analysis

The report notes the importance of attitudes, with the foreword from the CMO noting that “shifts in both environment and attitudes will be vital if we are to fully realise the health benefits of more active lifestyles.”

The report does not set out to investigate in detail the behavioural factors affecting physical activity participation, focusing instead on the health benefits of physical activity. It does present some behavioural data however,

such as the statement that “childhood and adolescence provide the greatest opportunity to influence attitudes towards activity. Children who emerge from their school years feeling confident about their physical skills and bodies, and who have had positive experiences of physical activity, are more likely to be active through adulthood.”

The report also presents evidence that by the time young people leave secondary school, their attitudes to sport and exercise and their level of perceived ability are highly predictive of whether or not they are physically active as adults.

Interestingly the report does cite both the National Fitness Survey (Sports Council and Health Education Authority, 1992.) and qualitative research reports (HEA 1997) to document the influence of attitudes among young and old people:

“...negative attitudes gained as a young person may persist into adulthood and affect people’s willingness to take part in physical activities...”

“...Older people report being prevented from taking part in a range of activities because of shortage of transport. They also describe barriers to physical activity such as low

social expectations, and lack of suitable exercise settings.”

4. CHOOSING HEALTH? CHOOSING ACTIVITY. A CONSULTATION ON HOW TO INCREASE PHYSICAL ACTIVITY.

This consultation paper was released in Spring 2004 as part of the development of a Public Health White Paper. In the absence of the White Paper (due Nov 2004) this document represents the most up-to-date picture of the Department of Health’s policy on physical activity (along with the CMO report, above).

Brief analysis

In its introductory sections, the ministers set out one of the main questions the report is aiming to address:

“How do we overcome the barriers that are preventing people from being more active?”

They cite a number of Sport England reports in charting the main barriers to increasing activity, noting that the main attitudinal barrier is that “the majority of people believe they are active enough.’

When looking at older people, the report refers to “specific barriers this group faces...(which) can include a perception that sport and leisure centres are for the young and fit...”.

Other parts of the consultation document make references to specific proposals which have some reference to attitudinal issues:

- Ensuring that people in all parts of society get the information they need to understand the links between activity and better health
- Raising awareness of the health benefits of walking and cycling as part of the daily routine;
- Removing barriers to creating an active community;
- Increasing the provision of advice to patients on lifestyle, particularly on physical activity.

Overall there are very few references to attitudinal factors within the document, leaving it to consultees to identify the important issues.

5. THE FUTURE OF TRANSPORT - WHITE PAPER

This is “a long term strategy for a modern, efficient and sustainable transport system backed up by sustained high levels of investment over the next 15 years”. It was launched on 20th July 2004. Chapter Six of the White Paper is directly concerned with opportunities for physical activity in everyday life: “Walking and cycling: a positive choice”.

Brief analysis

The walking and cycling chapter makes only one reference to attitudes or barriers to walking and cycling, stating:

“We know that concerns about safety deter many people from choosing to cycle or walk.”

6. WALKING AND CYCLING: AN ACTION PLAN

This action plan was launched in 2003 following wide consultation. It is intended to be directly relevant to Choosing Health? The Department of Health’s wide-ranging consultation exercise on Public Health, and in particular the strand on physical activity. It sets out a number of actions to achieve the DfT’s policy objective of increasing walking and cycling.

Brief analysis

The action plan –uniquely for a government policy document in this review – does draw on original commissioned attitudinal research as well as academic research in the field. They refer to a “2002 study of public attitudes to walking and cycling” in which they asked people whether they would be more likely to walk or cycle if the facilities on offer were improved. The plan builds on the results:

Appendix 3: Qualitative review schema

Extraction heading	Format
Date of review	(dd/mm/yyyy)
Study ID	
Citation	Author, year
Reviewers name	GC or SA
Verification of study eligibility	Y or N
Research setting	Organisation
	Home
	Community
	Sporting club
	School/ Education institution
	Other
Focus of study	Free text as described by authors
Stated objectives	Free text as described by authors
Participant characteristics	Free text as described by authors
Recruitment of participants	Free text as described by authors
Study design	Free text as described by authors inc:
	■ Method of data collection
	■ Where collected
	■ Time period of collection
	■ Number of interviews, participants etc
	■ How coding was developed
	■ Primary or secondary data
Theoretical framework informing the study	Free text as described by authors
Results and analysis	Free text as described by authors inc:
	■ Method of generating codes/themes
	■ Participant review of coding
	■ Theoretical perspectives used
Author's conclusions	Free text as described by authors
Future research suggested	Free text as described by authors
Papers to source from references	Citation as given in paper
Quality assessment	High
	Medium
	Low
Reviewer's notes	Free text

- Around a third of people told us that they would be more likely to walk or cycle if the facilities on offer were improved.
- For walkers, the existence of safe walking routes was identified as a slightly higher priority than better-maintained pavements.
- For cyclists, on and off-road cycle lanes, and better parking facilities, were all of roughly equal importance.

They also present some results from a recent (2001) survey of attitudes, which found that over 90% of respondents agreed that people should be encouraged to walk to help their health (97%), help the environment (94%) and ease congestion (92%).

There was a similar pattern, though with slightly lower support, for cycling: 87% thought people should be encouraged to cycle to help their health, 79% to help the environment and 73% to ease congestion. However the same survey found that 88% of respondents said they walk for more than ten minutes at least once a week – so over one in ten walk less than that; 13% of people said they cycle at least once a week, while 60% said they never cycle.

The Department for Transport has also been active in a number of interventions which are

taking a behavioural approach to the issue including personalised travel planning, employing techniques such as individualized marketing, travel diaries and personalised journey planning, and travel awareness campaigns.

Appendix 4: Characteristics of quantitative studies

Table 1a: Study authors, focus, characteristics of participants, design, theoretical framework and main findings from qualitative studies

Authors	Study focus	Characteristics of participants	Design	Theoretical framework	Main findings
Shaw & Hoeber 2003	Gendered discourses and their influence on employment roles	3 English National Governing bodies of sport	Discourse analysis and interviews	Post modern, feminist	Discourses of masculinity were associated with influential coaching and senior management roles and discourses of femininity were associated with less influential RDO and teaching roles. These roles and discourses which inform them are taken for granted, although there was evidence of resistance to the use of gender-specific language in one organisation, although this was still challenging
Macphail et al 2003	Young people's early socialisation into sport	2 introductory groups for children aged 9-15 run at an athletics club	Multi-method approach	Siedentop's model of participation	Key feature of sampling phase is access to a wide variety of different activities which participants can choose; Evidence for all three of Siedentop's goals were found, especially the educative role amongst younger participants - however, no evidence that this was due to a planned approach or the application of national policies for junior sport
Flintoff & Scraton 2001	Exploring the attitudes and perceptions of young women towards involvement in physical activity and school based physical education	15 year old women	In depth individual and focus group interviews	Feminist; post-structuralism	Most of these participants were involved in physical activity but not in traditional sport. Local context is important. Challenging destructive, macho behaviour of some boys remains a challenge. School based PE may offer curricula activities and pedagogy based on out-dated gendered relations and identities. Need to offer choice of activity but also choice about dress, being able to work in single sex groups etc.
Smith 1998	To investigate the differences between athletes, runners and joggers amongst participants in road races	48 participants from different parts of South Wales	In depth interviews	Figurational sociology	Rationale for runners taking part when they couldn't 'win' was that they did win by gaining status outside of the competition from non-runners who were impressed by their physical prowess
Robertson 2003	Exploring the relationship between masculinity, sport and health	Health professionals and men from the North West	Focus groups and interviews	Connell's framework of gender relations	Sport carries a range of socially integrated meanings for individuals and groups. Health promoters should problematize the links between health, sport and masculinity rather than assume that it is always a positive vehicle through which may be used to engage men with health issues

Table 1b: Study authors, focus, characteristics of participants, design, theoretical framework and main findings from qualitative studies

Authors	Study focus	Characteristics of participants	Design	Theoretical framework	Main findings
Cockburn & Clarke 2002	Young women's experience of physical education	6 Year 9 girls	In depth interviews	Connell's gender & power/feminist theory	Girls want to do sport and be physically active but also want to feel attractive and desirable/feminine. Physical education should promote a culture where girls can be sporty and feminine
Coakley & White 1992	Explores the dynamics of how young people make decisions about sport participation or non-participation	34 men, 26 women aged 13-23 living in an industrialised area SE of London	In depth interviews	None explicitly stated - grounded in 'interactionist' approach	Sport participation (or not) is the result of decisions negotiated within the context of a social environment & mediated through their view of sport and personal goals. Need to design opportunities which take account of gender relations which operate to restrict choices, esp. for women
Cooper & Thomas 2002	The experiences of social dance for older people	6 sites of dancing	Participatory observation & interviews	None stated	Uniquely positive experience within ageing and older people
Bostock 2001	Experience of carelessness in the context of disadvantaged lives	30 low income women with young children in Midlands	Interviews	None stated	Walking apart from being exercise seen by this group as problematic & stressful
Crone-Grant & Smith	To explore attitudes of exercisers & non-exercisers to long term adherence to exercise	2 focus groups (aged 30-55 years)	Focus group	Grounded theory	Non-exercisers focused on negative school experiences. Exercisers emphasised sense of achievement and skills development. Exercise leaders were an important role model for exercisers
Crone-Grant & Smith	To investigate the experiences of participants on a GP referral to leisure centre scheme to determine elements important to wellbeing	Adults aged 30-65	Focus group pre and post intervention	Grounded theory	Wellbeing influenced by social support & instructor, cultural scene

Table 1c: Study authors, focus, characteristics of participants, design, theoretical framework and main findings from qualitative studies

Authors	Study focus	Characteristics of participants	Design	Theoretical framework	Main findings
Crone-Grant & Smith	Experiences of patients on 2 referral schemes to determine elements important for wellbeing in private and public setting	Adults	Focus groups, pre and post intervention	Grounded theory	Social support & networks, feeling of competence with equipment and environment important
Hardcastle & Taylor 2001	To explore past & current experiences of physical activity in older women attending a leisure centre based GP referral programme	15 newly referred older women	Unstructured interview & life story technique.	None given	Complex interplay of physical/psychological & social factors which must be better understood
Singh 1997	To assess the participants views of the scheme they were referred to a GP exercise scheme	13 adult 30-61	Interviews and direct observation	None stated	No information beyond transcripts being analysed for themes. Availability of medically sanctioned sessions popular and enjoyable, important for functioning of body, social support, safe to not 'over do' it
Finch & White 1998	Assessing young women's views about physical activity	58 adults aged 16-18, 19-21, 22-24	Focus groups and in depth interviews	None given	To encourage more activity: focus on short term benefits (looking good etc.) and don't use authoritative messages
Arthur & Finch 1999	Physical activity amongst people with disabilities	62 adults with a range of disabilities and impairments	In depth interviews plus focus group (inc. carers of people with learning difficulties)	None stated	Need to increase awareness of role of physical activity, use of positive images, information on available options, role of medics etc.
Rai & Finch 1997	South Asian and black people's view on physical activity	Adults aged 18-50 on	Focus groups	None stated	Increase appropriate role models, opportunities to be active, help remove barriers to use of facilities

Table 1d: Study authors, focus, characteristics of participants, design, theoretical framework and main findings from qualitative studies

Authors	Study focus	Characteristics of participants	Design	Theoretical framework	Main findings
Mulvihill et al 2000	Experiences of young people aged 5-15 and parents	163 children plus 52 parents	Paired interviews with children plus focus groups for parents	None stated	Reduce school based gender stereotyping to help improve relations between older girls and physical education teachers. Teachers, peers and other role models important. Provide facilities for young people to be active in ways they considered fun, not childish
Finch 1997	Experiences of older people (aged 50+)	Adults from a range of social class, employment	In-depth interviews and focus groups	None stated	Role models - ordinary people playing with their grandchildren seen as important. Help older people recognise safe activity levels; don't forget older men as target group
Scott Porter Research & Marketing 2002a	Attitudes of parents of children under 5 to physical activity	Range of social class and ethnic groups, experienced vs first time parents, lone or 2 parent families.	In depth interviews	None stated	Provide information about facilities and opportunities, address local access issues, and provide safe local environments, provision of more organised drop-off activities, family base activities
Scott Porter Research & Marketing 2002b	Issues and attitudes of teenage girls	Girls from a range of social class/location/ages	15 paired interviews	None stated	Need more appropriate female role models, and increase opportunities for fun and 'cool' activity
Scott Porter Research & Marketing 2002c	Issues and attitudes of men in mid years	Adults age range 40-44, 45-49, 50-55	Interviews	None stated	Need to refocus attention onto activity for family life, role models etc
Orme 1991	Exercise participation by adolescent girls	Girls aged 14 in Avon	Interviews	None stated	Change school environment to facilitate girls involvement

Notes

