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**SOCIAL CAPITAL AS A HEALTH
ASSET FOR YOUNG PEOPLE'S
HEALTH AND WELLBEING:
DEFINITIONS, MEASUREMENT AND
THEORY**

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ABSTRACT

Background

The concept of social capital has been identified as a 'resource for societies, contributing to a range of beneficial economic, social and health outcomes and as such has the potential to help further articulate the relationship between health and its broader determinants. While the majority of published studies relate to adult health, the emerging literature on social capital and young people appears not to be learning lessons from some of the difficulties related to earlier research that have hampered its practical application. The overall aim of this thesis was to use an asset based approach to explore the relationship between social capital and young people's health and wellbeing and to contribute to the development of an appropriate framework for future positive youth development. In doing, it will address some of the definitional, measurement and theoretical difficulties associated with the adult literature.

Materials and methods

It uses data derived from three survey rounds (2002, 2006, and 2010) of the WHO Health Behaviour in School Aged Children (HBSC) international study to address the study objectives. Paper I used the full sample of 11-15 year olds in England only (2002). Paper II used data from 15 year olds across 6 countries sourced through the 2006 international dataset. Paper III used 2002 English and Spanish data for 15 year olds only and Paper IV included 13 and 15 year olds from the 2010 English and Spanish surveys. A range of multivariate analysis techniques were used to assess the independent effects of social capital after controlling for other socio-demographic factors.

Contributions from each paper

This thesis provides some *evidence* of the links between social capital and young people's health and wellbeing independent of other demographic and socio-economic variables and other known influences. The *strength of association varies* across the range of outcomes studied and indicators of social capital. There is also evidence that the three social capital domains chosen for study, sense of belonging, autonomy and control, and social networking are important in their own right and can act separately as health promoting factors and protect against some risk taking behaviours.

The family remains an important setting for securing a young persons' potential for health even at age 15; providing young people with opportunities to share decision

making processes can have beneficial effects. Although the optimal characteristics of family dynamics needs to take account of different socio-political and cultural contexts. There is consistent evidence that social networking activities via a range of clubs and organisations are beneficial for health, wellbeing and related outcomes. However the key features of what makes these clubs health enhancing needs to be further articulated, as there are instances when participation can be health damaging. Some aspects of social capital can inhibit smoking behaviour, even amongst those young people who smoke.

Conclusions

Social capital can be a key health asset for young people. However, it is only one of a wide range of factors that determine health experience during this key development stage. In particular these include, the skills and competencies required to utilize social networks for individual and collective good. The Asset Model may be helpful in exploring this wider lexicon of health assets and their connections with social capital.

LIST OF PUBLICATIONS

- I. Morgan, A. and Haglund, BJA. (2009). Social capital matters for adolescent health: evidence from the English HBSC study. *Health Promotion International*,. 24, No 4 363-372.
- II. Zambon, A., Morgan, A., Vereecken, C., Colombini, S., Boyce, W., Mazur J., Lemma P., and Cavallo F (2010) The contribution of club participation to adolescent health: evidence from 6 countries. *Journal of Epidemiology and Community Health*; 64, 89-95.
- III. Morgan, A., Rivera F., Moreno, C. and Haglund, BJA, Does social capital travel? Influences on the life satisfaction of young people living in England and Spain. Submitted to BMC Public Health.
- IV. Morgan, A., Jimenez-Iglesias, A., Owen, L., Rivera, F, Moreno, C. and Haglund, B. Can we still be friends if I don't smoke? An asset based analysis of smoking behaviour in England and Spain. Submitted to the European Journal of Public Health.

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PREFACE

My interest in social capital began in the late 1990's when I was involved in a large programme of qualitative, quantitative and action research established by the Health Education Authority (HEA) in England, set up to produce an evidence base for the links between social capital and health. This work culminated in 2 edited books which I co-authored (Swann and Morgan, 2002; Morgan and Swann, 2004) summarising the results of the qualitative and quantitative research and the overall learning that had been gained from the programme. As Principal Investigator for England on the WHO Health Behaviour in School Aged Children (HBSC) study, I saw an opportunity to use this learning to explore whether the concept had relevance to the health and wellbeing of young people. The HBSC has a long tradition of collecting data on the social contexts of young people's health and behaviour and therefore offered the possibility of developing some of the first measurements of social capital as it related to adolescents aged 11-15. I presented a paper to the HBSC Social Inequalities Focus Group (SIFG) in 2000 which outlined an initial framework for social capital conceptualisation in the study. An initial set of optional questions were included for the first time in 2002. The questions were based on qualitative work carried out by Morrow (2001) and an adaptation of a guide to social capital measurement in the general population developed as part of the HEA programme (Coulthard et al, 1999).

Theoretical perspectives

Whilst Putnam's definition of social capital was the driving force for the HEA programme on social capital. The indicators developed in the context of HBSC took the broad perspective demonstrated by the 3 main social capital theorists, James Coleman, Pierre Bourdieu and Robert Putnam. This turned out to be helpful since a Masters Thesis at the Karolinska Institute (Ottejber, 2005) set up to compare and contrast the definitions and disciplinary perspectives of the 3 main perpetrators concluded that:

'The common trait in both the original definitions and the selected articles however, is the presence of more or less structured networks between people or groups of people. These networks facilitate certain actions for different actors within the structures.'

The challenge therefore was how we make this more generalised definition of social capital work for young people.

My thinking on social capital was influenced by work I undertook as part of a secondment to the WHO in 2004. I managed the 'Assets for Health and Development Programme' which set out to challenge traditional and predominant deficit approaches to health promotion by setting out a framework that could guide positive approaches to the research, policy and practice. This framework, '*the Asset Model*' (Morgan and Ziglio, 2007) provided fresh insights into how best to collect and collate scientific evidence to demonstrate the benefits of the asset approach for population health and how to harness the sorts of effective practice that strengthen individual and community capacities, to promote independence and autonomy.

The links to this thesis are 2 fold. Firstly, the Asset Model recognises the role of social capital as a key asset for health, and as a tool for engaging effectively with local communities. Secondly, it identifies that young peoples opportunities for health and wellbeing lie within their ability to acquire the positive effects of a range of health assets (or protective factors) as they are growing up. Papers III and IV embrace the asset model as a way of advancing the evidence base for positive approaches to health. Placing social capital in the context of an asset based framework facilitates a better opportunity for applying it effectively to practice.

Finally, I have included in my Kappa, a summary of a building block framework (Morgan, 2010) which sets out how future research on social capital can be more systematically developed. This relates to my work at the National Institute of Health and Clinical Excellence, a London based organisation responsible for producing evidence based guidance for public health professionals. Often the evidence base available is characterised by a heterogeneity of research that makes synthesis of the overall findings difficult. Much of the research I reviewed as part of this thesis was similarly diverse. The building block framework is not an attempt to stifle innovation in research merely an attempt to minimise contradictions in definition, measurement and conceptualisation of social capital.

I hope this thesis can make a contribution to a more systematic approach to researching social capital as it relates to young people's health. If we, the research community, can do this – we will stand a better chance of making social capital work in the real world.

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LIST OF ABBREVIATIONS

CC	Coordinating Committee
CSDH	Commission on the Social Determinants of Health
CHAID	Chi Squared Automatic Interactive Detector
CTA	Classification Tree Analysis
DBM	Data Bank Manager
FAS	Family Affluence Scale
FG	Focus Groups
GLM	General Linear Model
HEA	Health Education Authority
HBSC	Health Behaviour in School Aged Children Study
IC	International Coordinator
OR	Odds Ratio
PAA	Perceived Academic Achievement
PDG	Policy Development Group
SDG	Scientific Development Group
SES	Socio-economic status
SIFG	Social Inequalities Focus Group
SOC	Sense of Coherence
WHO	World Health Organization

1 INTRODUCTION

Investing in the health and wellbeing of children and young people is essential for the success and sustainability of future generations. We already have much knowledge about the many factors that can impact on their ability to deal with the different pressures that they face from very early years to mid-adolescence. These factors relate to their own genetic susceptibilities to achieving health, to their family, to their environment and life events (Allen, 2011). Early to mid adolescence marks a particularly difficult period when young people have to deal with considerable change in their lives such as growing academic expectations; changing social relationships with family and peers and physical and emotional changes associated with maturation (Morgan, et al., 2008). The question is therefore how do we provide them with the optimum conditions that enable them to make sense and deal with these situations as they arise. This thesis suggests that social capital has a contribution to make to the setting of these conditions securing health during adolescence and beyond.

Social capital emerged during the late 1990's as a concept which had the potential to further articulate the relationship between health and its broader determinants. Whilst not an entirely novel concept, it's re-emergence as a potential resource for health, was largely due to the work of Robert Putnam (1995). He conceptualized it as the resources within a community that create family and social organization. These resources, arise out of activities such as civic engagement, social support or participation, benefit individuals and are developed in relationship to and with others, for example within or between groups or communities. Such activities can lead to better access to information, services and health.

The concept very quickly became popular amongst policy makers and practitioners as a means of using community and civic pathways to promote and improve health and to tackle inequalities. This instigated an exponential growth in academic literature and social capital soon became a hotly disputed concept, various authors debating its definition, measurement and conceptual utility as a health concept. Most of the literature accumulated in the first decade of the 21st century related to adult health, but the focus on Putnam's collective definition did not connect it well with notions of health and wellbeing among young people. However, Morrow's (1999, 2001) influential qualitative study on social capital and young people set the ball rolling to understand whether the concept had any relevance for them.

From the outset Morrow, doubted the usefulness of applying Putnam's conceptualization to a younger age group, so combined it with the work of Bourdieu (1983, 1986) to produce a framework for examining how social capital's different components might relate to the health of youth. Morrow's work provided the impetus for the studies included in this thesis, helping to steer the initial analytical framework used to devise the study objectives.

The overall aim of this thesis was to advance thinking about the relevance of social capital to young people's overall health potential by overcoming some of the definitional, measurement and theoretical issues associated with the adult literature. It used the World Health Organisation (WHO) Health Behaviour in School Aged Children (HBSC) international study to establish a better evidence base for the links between social capital and a range of young people's health and health related outcomes. Specific aims and objectives are set out in section 3.

2 BACKGROUND

2.1 WHY SOCIAL CAPITAL?

In 2011, global health inequities continue to widen and policymakers are redoubling their efforts to address them. Yet the effectiveness and quality of these programs vary considerably, sometimes resulting in the reverse of expected outcomes (Morgan et al., 2010). The Commission on the Social Determinants of Health (CSDH) affirmed that the conditions in which people grow, live work and age have a powerful influence on health. The Commission's holistic view of these determinants calls for sustained action, globally, nationally and locally to overcome the unequal distribution of power, income, goods and services which often lead to unfair access to health care, schools and education and an individual's chance of leading a flourishing life (CDSH, 2008).

Irwin et al. (2007), focuses on the actions required to stimulate the physical, emotional and social development of children and young people at key life stages. They highlight that finding the best ways of promoting caring and responsive environments that protect young people and which create opportunities for them to explore their worlds, is essential to the Commission's goals. UNICEF (2011) call for continued investment in youth health arguing that *'adolescence is an age of opportunity for children, and a pivotal time for us to build on their development in the first decade of life, to help them navigate risks and vulnerabilities, and to set them on the path to fulfilling their potential.'*

The concept of social capital is one tool that can be used to support adolescent health and development. Whilst varying definitions and theoretical perspectives prevail in the literature, they commonly recognise the importance of 'positive networks' of different types, shapes and sizes on a range of outcomes including high levels of and growth in GDP, more efficiently functioning labour markets, higher educational attainment, lower levels of crime, better health and more effective institutions of government (Aldridge, 2002)

.At a conceptual level, young people who have networks and resources are more likely to grow up as healthy, caring and productive people (Scales, 1999). We propose that social capital provides an opportunity for young people to be seen as active social agents, who shape the structures and processes around them (Moore, 1999). This notion fits with recent commitments made by policy at an international and national level (WHO, 2005, DH, 2009) to involve young people in the health development

process. The spirit of involvement during childhood and adolescence may lead to better capacity and willingness to become active citizens in future years. In addition, the latest HBSC international report highlighted strong and complex inequalities exist amongst young people both within and between countries (Currie et al, 2008). Social capital can help us understand these and act as a protective factor (or asset) against poor outcomes (Morgan and Ziglio, 2007). The first task however, is to unravel the complexities of social capital itself so that its relationship with other factors and their collective contribution to health can more clearly understood.

2.2 SOCIAL CAPITAL RESEARCH 1995-2011

Quantitative studies exploring the links between social capital and health started to appear in the mid 1990's, and continued to grow in number during the first decade of the 21st Century. The vast majority of these studies explored social capital's importance to adult health (for example: Kawachi et al., 1996, 1997, 2001; Cooper et al., 1999; Lindstrom et al., 2001; Stafford et al., 2004; Mohan et al., 2005), although youth studies started to appear in the latter half of this first decade (Lund 2005; Ferguson 2006; Boyce et al., 2008; Morgan and Haglund 2009; Elgar et al., 2011).

Over the last 10-15 years much has been learnt from this literature to clarify the utility of the concept and some issues remain unresolved. We rehearse some of the key debating points here in an effort to support research on social capital and young people(still in comparative infancy), to advance more quickly. Consideration of these issues has helped to frame the analytical work included in this thesis.

2.2.1 Issues of Definition

Social capital is not an entirely novel concept. It has roots in the work of sociologists such as Durkheim (1983) whose work on group life led to the proposition that involvement and support was the solution to anomie and suicide, and William Julius Wilson, who studied the role of social isolation in the lives and futures of inner-city 'urban-underclass' residents. However, it is well known that the key contributions to our understanding of the concept relate back to the work of Pierre Bourdieu (1986), James Coleman (1988) and Robert Putnam (1995) each bringing their own disciplinary perspectives on the concept. Bourdieu defines social capital in terms of social networks and connections. He posits that an individual's contacts within networks result in an accumulation of exchanges and obligations and shared identities that in

turn provide potential support and access to resources. Coleman emphasises the idea that social capital is a resource of social relations between families and communities. Putnam defines social capital as a key characteristic of communities. In his definition, social capital extends beyond being a resource to include people's sense of belonging to their community, community cooperation, reciprocity and trust, and positive attitudes to community institutions that include participation in community activities or civic engagement. Whilst each of these authors describes social capital through a different disciplinary lens, their common thread relates to the importance of positive social networks of different types, shapes and sizes in bringing about social, economic and health development between different groups, hierarchies and societies.

In the exploratory phase of social capital research varying definitions have been helpful in generating an array of hypotheses that could be tested empirically. Some still call for more precise definitions of the concept if it is to be applied effectively to health solutions. Morrow (2001) argued early on that Putnam's definition of social capital had little utility for young people as '*by definition they are excluded from civic participation by their very nature as children*'. She suggested that Bourdieu's concept of sociability (the ability and disposition to sustain networks) might be more relevant as it recognizes that these networks are not just neighbourhood and geographically bound. Others have chosen to consider how aspects of all the main perspectives can contribute to the new theories for younger age groups (Scheafe-McDaniel, 2004).

Given the exploratory nature of the studies included in this thesis, views about the relevance of particular disciplinary perspectives have also been kept open. This is reflected in the broad range of indicators used to explore how social capital might be generated in all the contexts within which young people's health is experienced. Namely, the family, school neighbourhood and peer contexts. Ultimately however, as Szreter and Woolcock (2004) argue, there is a better chance to understand the precise mechanisms through which social capital works to produce health, if we make explicit the purpose for which it is to be used.

2.2.2 Social capital as a multi component concept

The multi-component nature of social capital has often been argued to be its weakness, some questioning whether by incorporating so many disparate social phenomena into one concept, leads to a loss of distinct meaning (Portes, 1998). The individual constructs which underpin it cut across many pre-existing concepts as

sociability, social networks, trust, reciprocity, and community and civic engagement, causing some to question the worth of changing linguistics to further health development (Lynch et al., 2000).

In the context of young people's health, it might be argued that the dimensions of social capital become even more complex. Firstly, a wider range of social environments that take account of where young people's health is experienced needs to be considered. Young people's social spaces are different to those of adults and indeed the community (or neighbourhood) may be less important than the home and school (Morrow, 2001). More recently their social spaces have expanded to include the internet which has the potential to influence both the positive and negative aspects of social capital (Jung et al, 2005; Sally and Morrison, 2006). The studies included in this thesis take advantage of the wide range of variables available in the HBSC study (Currie et al, 2002; Griebler et al, 2010) to define the multi-component concept across three distinct social environments, the family, school and neighbourhood. It also collects data on the contribution that peers can make to generating social capital outside the home. The second consideration is that the age group chosen for study (11-15 year olds) is by very nature an intense period of development. During this small window of development, young people are developing their identity as independent individuals and the need for positive social networks is crucial, but the structure and function of them may be relatively more or less important as they progress through this short time span (Currie et al., 2009).

The defeatist might say it's all too complicated and give up. However it is social capital's complexity that gives it its strength over other concepts, as it has the potential to help articulate possible pathways to health. This strength will only be realized if we are able to develop a structural framework, which outlines, links and explains the relationship between the dimensions that underpin it (Hean et al., 2003). Such a framework would take account of the fact that social capital is dynamic in that it may take different forms in different circumstances and over time. Developing such a framework would satisfy Morrow's (2002) need to have a tool for the analysis of the social environment, which can accommodate the way that families, children, friendships, social networks, institutions, norms and values change temporally (through the life course) and spatially (migration in and out of geographic boundaries).

Earl and Carlson's (2001) view is that evidence on the social-environmental influences of child health and wellbeing can only be accrued if theory, measurement and analysis advance together. A complete and robust taxonomy of social capital indicators is

therefore needed, involving an iterative process of testing and re-development. The studies included in this thesis aim to start this process by unraveling some of the complexities of social capital as it relates to young people.

2.2.3 Measuring social capital

Our ability to construct a robust and rigorous evidence base on the links between social capital and health relies on valid and reliable means of measuring it and developing indicators that can represent it. The majority of studies in the adult literature have been carried out using either ecological or cross sectional study designs to investigate the associations between the indicators of social capital and a range of mortality, health and behavioural indicators, although there are some examples of other designs (Lindstrom, et al., 2003). These were important in the early days of social capital research to establish a platform for creating more sophisticated hypotheses. For example, original work by Kawachi et al (1997) used single measures of trust as a high level indicator of social capital to correlate its relationship to mortality levels across US states. This study was influential in stimulating interest within the research and policy communities and led to a rapid growth in adult related social capital research.

Some authors (for example Harpham et al, 2002, Blaxter, 2004) warn of the dangers of relying solely on surveys to determine levels of social capital in different populations and the limitations that this may have in determining the relationship between social capital and health. In particular, they refer to issues relating to the subjectivity of people's responses to survey questions, the need for detailed question sets to tap into any one aspect of social capital (often not viable in social surveys) and the static nature of surveys which cannot capture the dynamic characteristic of the concept.

All these issues are directly relevant to the pursuit of an evidence base on the links between social capital and young people's health. This thesis argues however, that social surveys do provide a facility to develop a set of meaningful indicators of social capital which can be continually refined and developed as more is understood about the range of underlying constructs that underpin it. In the case of young people there is still more to be understood about what might be the most relevant indicators of social capital and cross sectional surveys such as HBSC have much to offer in developing them.

HBSC provides a vast range of data on the social context of young people's lives, not often collected in one survey instrument. The data is now collected in around 40 countries reflecting a whole range of socio-cultural contexts allowing for international comparisons. These 2 aspects give it a unique advantage over other data sources. Firstly, it is able to assess the broad range of constructs associated with social capital simultaneously. Secondly, it has the facility to test the consistency of findings across a range of contexts. In addition, whilst different cohorts of young people are included in the surveys in each wave, the temporal nature of the study can observe the stability of findings over time.

2.2.4 Social capital: age gender and culture

It soon became apparent in the adult literature that social capital is not a 'one size fits all' concept and the ability to acquire it may differ across gender, age, culture and the life course. People's networks, self-concepts and communities are fluid and dynamic, which means that notions of communities may be different and have relative importance to different groups at different times.

Qualitative research (Swann and Morgan, 2002) has been useful in helping us to look beneath the surface at the hard-to-measure processes and actions of people's relationships to others, at community structures, and the 'life' of communities and networks and hence understand how social capital might be conceptualised for different purposes. A range of material and social barriers may exist in our societies which prevent certain groups acquire social capital at different times. Exclusion from general participation in community life and in certain civic or democratic structures may arise because of language, ethnicity, age or disability, discrimination and restrictions of gender and identity. Given the ever increasing multi-cultural nature of societies in many European contexts, young people are becoming an ever increasing heterogeneous group and this needs to be taken account of when conceptualizing social capital for different sections of the population.

Some examples of these manifestations include: the lack of relevant community spaces for positive social interaction (Campbell et al, 1999), individual constructions of health and relations to community by males and females (Sixsmith and Boneham, 2003; Boneham and Sixsmith, 2005) and the need to place the voices of social participants at the centre of social capital studies (Morrow, 2001). These issues add a further dimension and complexity to be dealt with if the concept is to be applied effectively for health development. The need to understand how social capital might

manifest itself across and between different population groups, provides an additional rationale for the development of a framework that helps the unraveling of the concept to its lowest common denominator, so that it can more easily be assembled for different purposes, contexts and populations.

The studies in this thesis contribute to our understanding of how social capital might manifest itself with respect to the key development stage of adolescence in a number of ways. Firstly, it deals with the assumption made by Putnam's (1995) early work on social capital that geographically bound communities are important for everyone. Young people's networks and communities are likely to inhabit different spaces than adults and therefore extend the vocabulary beyond community to include, the family, school and peers. Secondly; the studies recognize that even within this small age band, there may be differences in the social influence and expectations according to age. The selected ages in HBSC reflect, the onset of adolescence, the time when young people face the challenges of physical and emotional changes; and the middle years when young people start to consider important life and career decisions (Currie, et al, 2009).

Finally, at a more global level, the broader social-political settings of different countries may have an effect on how social capital can be applied to health. Papers III and IV explore this issue by using data from the English and Spanish contributions to the HBSC study.

2.2.5 Bridging, bonding and linking social capital

As the debate about the usefulness of social capital has progressed, so has the elaboration and further distinction of particular types. Bridging, bonding and linking social capital have been introduced by various authors (Narayan, 1999; Putnam, 2000; Szreter and Woolcock, 2004). The rationale for these distinctions arose because of the growing recognition that social capital could have different consequences in different contexts.

Firstly, bonding social capital is characterised by the internally focused strong bonds held by groups of similar ethnic groups, families or communities of interest. As Putnam (2000) described it, '*bonding social capital links you to people just like you, the same gender, or age, or race. These sorts of links are good for some and not for others*'.

At the community level particularly in diverse multi-cultural communities, levels of social capital may be high within groups - but less so across groups – which can sometimes lead to tension and adverse outcomes (Abada et al., 2007). Bonding social capital is most associated with its ‘downside’ which reflects the assumption that all strong networks and bonds are good. Some networks are not necessarily conducive to community health, such as the Mafia or teen gangs - in these cases social capital can be used as a resource for social control – effectively excluding certain parts of a community (Leonard, 2008).

In the context of young people particularly during the development period included in this study, the establishment of friendship with peers represents a critical developmental task, and may have a long-term impact on young people's adjustment (Poulin and Chan, 2010). Positive friendships can facilitate opportunities for the development of social competencies, afford different kinds of social support, and help young people to face new situations and stressful life experiences (Hartup, 1996). However, some bonded peer relationships can lead to detrimental outcomes and therefore there it is important to be able to understand the prerequisites and conditions that support youth relationships that are positive for them and not detrimental to the other (Sussman et al., 1997).

Bridging social capital in contrast to bonding social capital captures a range of less strong bonds, which are more outward looking between and across groups, friends or businesses. In this instance, individuals may foster ties with people unlike themselves – most likely from different races or generations. It is argued that this type of social capital is more likely to foster diverse democratic societies (Putnam, 2000).

Kim and colleagues (2006) studied the relationship between bonding social capital and bridging social capital on health and found that both were important, however according to Granovetter (1973, 1983) the benefits of weak ties as a social resource have much more potential for health than strong and lasting ties. Weak ties are important to individual health as they can open up access to a wide range and amount of information, access to services and other resources, whilst strong bonding networks tend to be more inward looking and in particular cases they can produce harmful effects (Portes, 1998).

Papers II and IV in particular discuss the issues of bridging and bonding social capital, the first exploring the role of different types of club for health, the second examining

the potential for a range of protective factors to inhibit smoking behaviour even amongst those who have a best friend who smokes.

The third type of social capital acknowledges that for the development of good community health, there needs to be a range of positive connections between members of local communities and the institutions that govern them. Linking social capital refers to the relations between these groups and the potential to break down the power imbalance that might exist between groups in different social strata. High 'linking social capital' communities build the capacity to involve local people in the decisions which affect their lives, facilitating the leverage of resources, ideas and information from formal institutions. At first glance, this type of social capital may not seem relevant during adolescent years, however given the argument for more active involvement of them in the health development process (Moore, 1999; Weller 2007; Holland, 2009) – linking social capital might provide the facility for enhancing youth participation in matters that concern them.

Recognition of these different types of social capital, allows us to acknowledge that individuals and communities may have needs for different types of social capital at different points in their lives. Research (since 2005) is now emerging which may help to clarify the relative importance of bonding, bridging and linking social capital in different contexts (Baum, 2010; Weller, 2006).

2.2.6 Social capital and its links to health

The impetus for research on social capital on health certainly in the UK arose from Putnam's original work 'Making Democracy Work' (1995). In this longitudinal study of Italian Regional governments he concluded that those regions (largely in the North) characterised by high levels of voluntary association and community groups (social capital) were economically more prosperous than their Southern counterparts. Early health studies (Kawachi, 1996; Kawachi et al, 1997), sparked an interest in public health as a means of examining the processes whereby social connections operating through a range of different types of networks, can act as a buffer against the worst effects of deprivation (Gilles, 1997), hence having the potential to contribute to health inequalities agendas.

A plethora of social capital and health studies started to appear during the early part of the first decade of the 21st Century, however a number of reviews of the literature helped to summarise the status of knowledge about social capital and its links to a

range of physical health outcomes, health behaviours and mental health (Kawachi et al., 2004; Islam et al., 2006; Almedom 2005; De Silva et al., 2006). Disciplinary territorial wars and debating points aside, this literature points towards social capital or at least its underlying constructs (for example social relationships, levels of trust, group membership and civic engagement) as being beneficial for health across different ethnic groups, generations and gender. However, the exact relationship between different indicators of social capital and different outcomes vary and some authors suggest that whilst the indicators of social capital have some predictive value for health, when socio-economic status is taken into account this relationship is considerably weakened (Mohan et al., 2005).

However the studies upon which this evidence base has been built is fraught with a number of measurement and design issues. Kawachi (2010) highlighted that the heterogeneity in measurement approaches which is common across all studies makes higher level synthesis difficult. An early criticism of social capital (Lin 2001), from a design perspective was that the tautological issues associated with social capital and its links to health could only be overcome through longitudinal studies which are more capable of determining the causal direction of the associations already established in the research literature. There remains a question therefore as to whether the findings from the current evidence base are a function of these inconsistencies.

That said, much has been learned from this research and the progress made over the last 10 years to advance our understanding of social capital which can feed into a more coherent framework for future work, particularly in the context of this thesis in relation to young people.

One of the most important contributions at a conceptual level was Szreter and Woolcock's (2004) discussion of 3 social capital perspectives. They argued that social support (accrual of benefits through participation in social networks); inequalities (widening economic disparities eroding citizens' sense of social justice and inclusion; and political economy (poor health being determined exclusively from exclusion to material resources) perspectives can be reconciled by developing a more grounded theory of social capital that makes explicit how it might be put to practical use. Their discussion of bonding, bridging and linking social capital ensued as a way of bringing theory and practice closer together.

Whilst research on social capital and young people (particularly in relation to adolescents) gained momentum a little later than adult related research, most if it did

not seem to capture the learning about conceptualization, measurement and study design.

A review and critical synthesis published by Ferguson in 2006, summarised what had been learned about the relationship between social capital and children's wellbeing in studies carried out between 1980 and 2002. A wide range of social capital indicators were used in these studies broadly categorised as family or community social capital. More specifically, family indicators were broken down into family structure, quality of parent-child relations, adult interest and monitoring and extended family exchange and support. Community social capital indicators covered: the exchanges of social support between families; parents engagement within civic institutions and religious networks; and perceptions of school and neighbourhood quality (i.e. children and young people's social capital as expressed by the parents views or actions).

Ferguson concluded that there was '*considerable empirical evidence to indicate that family and community based interactions and relationships have a positive effect on children's overall wellbeing*'. Of course the major criticism of this earlier work on social capital and young people is that it did not take on board developments in the sociology of childhood which endowed young people with agency (James and Prout, 1997) that are capable of generating and using social capital in their own right (Morrow, 2001).

Whilst there are numerous theoretical expositions to further the idea of young people as 'social agents' (Schaefer-McDaniel, 2004; Bassani, 2007), little empirical work has been done to overcome some of the measurement issues in social capital research. That said in general terms there is growing amount of research relating to broader outcomes (not chosen for study in this thesis) that might be helpful for future methodological development (for example, Parcel and Dufur, 2009 and Sclee et al., 2009 on education; McNulty and Bellair, 2003 and Fitzpatrick et al., 2005 on violence; and Cantillon, 2006 on delinquency).

So how can this thesis contribute to a next phase development of social capital research as it relates to young people particularly through the critical period of adolescence?

First, it took account of the fact that young people are part of a range of overlapping contexts, namely the family, school, neighbourhood and peers and these might have independent and interactive effects (Bassani, 2007). Unlike previous research, the

breadth of data in HBSC allowed an exploration of the relative importance of these spaces as potential sources of social capital together.

Secondly, it has been possible to take a broad definition of social capital taking account of its multi-faceted nature. Three domains were identified for study: sense of belonging, autonomy and control and social networking (described in more detail in section 3). By definition they provide the potential for exploring the relative merits of bonding, bridging and linking social capital in the interpretation of findings.

Lastly, although the idea emerged during the development of the thesis, social capital is placed within the context of positive youth development and as such is hypothesized to be a protective factor or 'health asset. This is argued to be another perspective (in addition to those discussed by Szreter and Woolcock, 2004) on social capital (Morgan, 2010) and helps overcome some of the criticisms associated with negative aspects of bonding social capital.

2.3 UNDERSTANDING YOUNG PEOPLE'S HEALTH AND WELLBEING

Happy and confident children are most likely to grow into happy and confident adults, who in turn contribute to the health and well-being of nations (Rao, 2001). Emotional health and well-being have implications for self esteem, behaviour, attendance at school, educational achievement, social cohesion and future health and life chances (Olweus, 1991). Life circumstances substantially influence young people's ability to acquire, maintain and sustain good health and well-being. Moreover, research has shown that experiences and exposures across the life-course, particularly early on, have long-term implications for health and may indeed be one of the root causes of health inequality in later life (Graham and Power, 2004).

As has already been mentioned, the CSDH reported that despite substantial overall improvement in health, global health inequalities still exist and in some cases are still increasing. This suggests that while some of our policies and interventions work they are also failing some sections of the population. Whilst some have debated whether health inequalities exist during adolescence (West, 1997; Sacker, 2002), findings from the latest HBSC international report highlight that when defined broadly (including the dimensions of age, gender, socio-economic status and culture) inequalities do exist both within and between countries. That said, it is important to say that in general most young people are satisfied with their lives, perceive their health to be good and do not

regularly suffer from health complaints such as headaches, irritability or feeling low (Currie et al., 2008a).

Call et al. (2002) argue that health experience during adolescence has long-term implications for both the individual and for society as a whole. In other words, whether or not inequalities exist during this period, adolescence is an opportune time to invest and helping them make the most of their teenage years, while laying strong foundations for future health.

There are many new pressures and challenges for young people particularly in early to mid adolescence. They need to deal with considerable change in their lives at this time: growing academic expectations, changing social relationships with family and peers and physical and emotional changes associated with maturation (Morgan et al., 2008). The idea of risk and protective factors can help us understand the likelihood of young people being able to achieve their full health potential (Killoran et al, 2009). Many factors have an impact on children's ability to deal with these changes: factors specific to the child; to their family; to their environment (particularly their school) and to life events (Currie and Todd, 2003).

The protection afforded by protective factors, can be offset by a range of well known risk factors, including poverty, child abuse, early parental loss and family conflict, parental substance misuse and living in high-crime neighbourhoods. The strength of evidence on risk and protective factors for health and wellbeing varies, but social and economic factors which support warm, affectionate parenting and strong child/carer attachment are particularly significant. Strengthening protective factors in schools, in the home and in local communities can make an important contribution to reducing risk for those who are vulnerable (Rutter and Smith, 1995; Fonagy and Higgitt, 2000; Heijmens et al, 2000) and in so doing promote their chances of leading healthy and successful lives.

2.4 INTRODUCING ASSET BASED APPROACHES TO HEALTH

As has already been stated global health inequities continue to widen and therefore there is a need for policymakers, practitioners and researchers to rethink the development of programmes seeking to address them. While local political issues or cultural conflicts may play a part in these situations, the Asset Model put forward by Morgan and Ziglio (2007) argues that too much emphasis has been placed on deficit approaches to health and development. That is, those approaches that place a

disproportionate focus on assessing health needs, sometimes ignoring the potential strengths of individuals and communities. The latter assesses multiple levels of health-promoting aspects in populations, and promotes joint solutions between communities and outside agencies. Both are important but the asset model, aims to redress the balance to support policy, practice and researchers to think and act differently about their approaches to health.

In sum, the model, provides a framework for establishing fresh insights into how best to collect and collate scientific evidence to demonstrate the benefits of the asset approach for population health and how to harness the sorts of effective practice that strengthen community capacities, promote independence and autonomy.

Phase 1 of the model, is a research phase and challenges researchers to think and act differently about the types of questions they ask that support the creation of health rather than the prevention of disease. So for example drawing on Antonovsky's (1979, 1987) theory of salutogenesis, it challenges us to ask: what are the key sources of health and what causes some to prosper, and others to fail or become ill in similar situations? The Asset .Model it is not in itself a new concept or approach - but aims to add value to other existing concepts and ideas by bringing them together in such a way as to promote a more systematic approach to assembling and applying knowledge for health solutions.

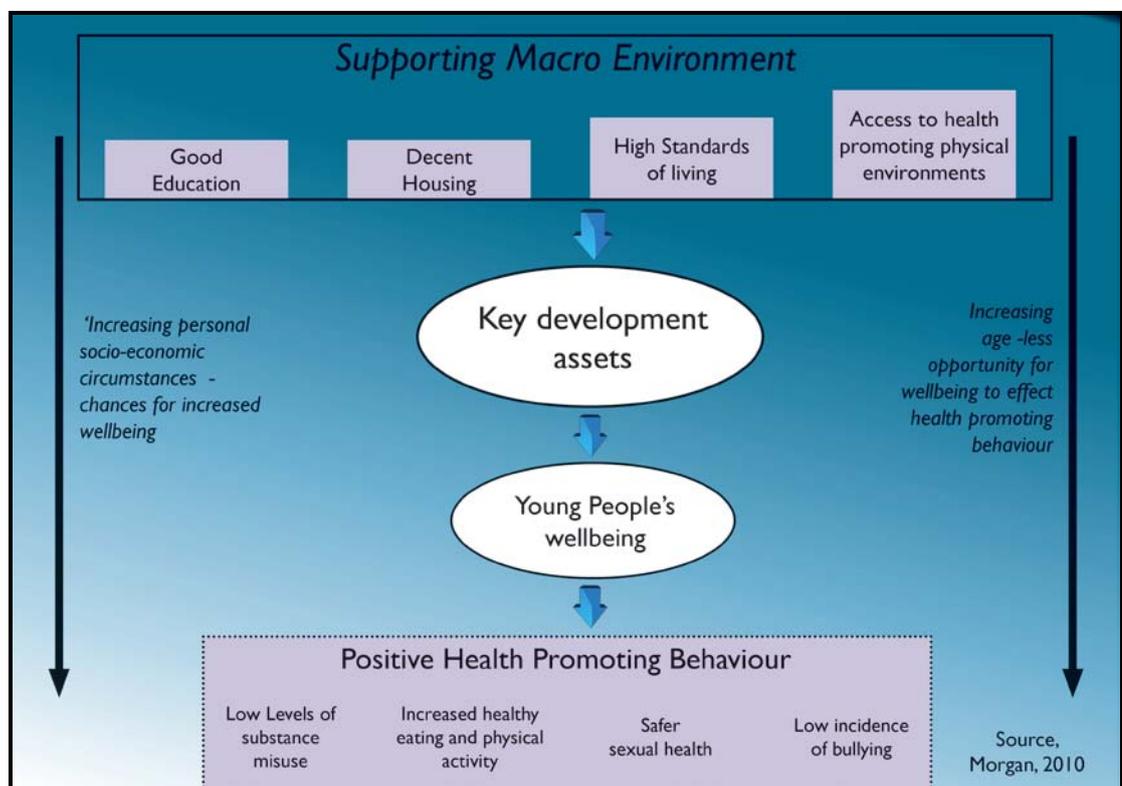
It is possible to identify health assets capable of protecting health throughout the life course from across all the domains of health determinants including our genetic endowments, social circumstances, environmental conditions, behavioural choices and health services. An inventory of health and development assets would, as a minimum, include family and friendship (supportive) networks, intergenerational solidarity, community cohesion, environmental resources necessary for promoting physical, mental and social health, employment security and opportunities for voluntary service, affinity groups (e.g. mutual aid), religious tolerance and harmony, lifelong learning, safe and pleasant housing, political democracy and participation opportunities, social justice and enhancing equity.

The concept of social capital can be seen as a 'health asset' as it has already been identified as a 'resource for societies, contributing to a range of beneficial economic, social and health outcomes. This thesis aims to contribute to the development of asset based approaches in 2 ways. Firstly it aims to build the evidence base that demonstrates that social capital can be protective of the health and wellbeing of young people.

Secondly, it aims to further articulate the issues that need to be addressed by research if the concept is to be effectively applied in policy and practice.

Morgan and Ziglio (2007), define health assets as any factor which enhances the ability of individuals, communities and populations to maintain and sustain health and wellbeing. In relation to young people's health, the argument is that the more opportunities young people have in childhood and adolescence to experience and accumulate the positive effects of these assets that outweigh negative risk factors, the more likely they are to achieve health and wellbeing that is also sustainable in later life. The overall idea there is to maximise assets and minimise risks (see Figure 1).

Figure 1: An asset based framework



2.5 SOCIAL CAPITAL AS A HEALTH ASSET

Young people with a good sense of well-being possess problem-solving skills, social competence and a sense of purpose, which can be utilised as health assets that can help them rebound from setbacks, thrive in the face of poor circumstances, avoid risk-taking behaviour and generally continue on to a productive life (Scales, 1999, Morgan et al, 2008). So how do young people acquire these skills?

At one level, we have a multitude of research that has been gathered over many years about some of the individual aspects, precursors, or determinants of young people's health and wellbeing. But it is the work of the Search Institute (www.searchinstitute.org) that most reflects the idea of identifying the key health protective and promoting factors which provide young people with the best possibility of growing into healthy, caring and productive individuals. They have identified 40 development assets which they see as fundamental to positive youth development.

The development assets so far identified by the Search Institute include: family dynamics, support from community adults, school effectiveness, peer influence, values development, and a range of specific skills and competencies required for young people to thrive. These assets grow out of 3 types of applied research - positive youth development, prevention and resiliency (Resnick, et al., 1997; Lerner et al., 2003; Benson et al, 2006). The assets identified are derived from well known fields of knowledge about their effects on health, however there is still a job to be done to understand: the precise mechanisms or pathways which operate between these assets and health; whether some assets are more important than others; how the cumulative effects of different assets benefit young people as they grow up; and how different social and cultural contexts impact on the benefits of them. Answering these questions certainly requires a refocusing of hypotheses to ask what creates the conditions for health, in order to understand the underlying reasons why some young people thrive and sustain health even when coming from similar social and economic backgrounds.

Placing social capital in the context of an asset approach to public health helps to ward off the criticism by some that social capital has its 'dark side' (Portes and Landolt, 1996). The further definition of types of social capital, bridging, bonding and linking have been helpful in overcoming this claim. The asset approach helps further by identifying those key features of the concept that promote a range of positive social exchanges for health. In addition, the principles upon which the asset model is based necessarily ensures that society strives for both individual and community level goals.

3 AIMS AND OBJECTIVES

3.1 GENERAL AIM

The general aim of the study was to assess the possibilities for social capital to be a protective factor 'a health asset' for young people's health and wellbeing. In doing so it examines the definitional, measurement and theoretical issues that need to be addressed for it to be applied successfully in policy and practice and for its future development in research. It uses indicators of social capital developed by the HBSC network of researchers.

3.2 SPECIFIC OBJECTIVES

1. To examine the relationships between social capital (sense of belonging, autonomy and control and social networking) and the health, wellbeing and health behaviours of adolescents aged 11-15 taking account of other known influences (Paper I).
2. To assess the relative importance of different types of club participation on the health, wellbeing and health related behaviours of 15 year olds living in six countries participating in HBSC. (Paper II).
3. To assess the potential for social capital to be a protective factor or 'health asset' for young people's wellbeing in two different country contexts. (Paper III).
4. To assess whether a range of health assets (including social capital) can inhibit smoking behaviour amongst young people even when they have a best friend who smokes. (Paper IV).

4 MATERIALS AND METHODS

4.1 AN OVERVIEW OF THE WHO HBSC

The source of data for this study was the Health Behaviour in School-aged Children (HBSC) study, established almost 30 years ago. It is a cross-national research study conducted by an international network of research teams in collaboration with the WHO Regional Office for Europe. Its aim is to gain new insight into and to increase understanding of young people's health, well-being, health behaviour and social context.

HBSC is unique because, in addition to monitoring the health and health behaviours of young people over time and across countries, it encompasses the wider context of health. This includes investigating family, school and peer settings, and the socioeconomic environment in which young people grow up, to understand what factors shape their health potential.

Further details of HBSC can be found in Appendix 1.

4.1.1 HBSC survey instrument

HBSC surveys are carried out at four-yearly intervals. Forty one countries participated in the last survey in 2010. The data are collected in all participating countries and regions through school-based surveys, using an international research protocol. The survey instrument is a standard questionnaire developed by the international research network. The target population of the study comprises young people attending school, aged 11, 13 and 15 years.

The questionnaire consists of a set of mandatory items that each country or region must use to facilitate the collection of a common set of data. In addition, optional questionnaire items cover specific topics. The overall findings from HBSC surveys are published by the World Health Organization in a series of international reports (Currie et al, 2004; Currie et al, 2008a) The report for 2010 is currently will be published in early 2012.

A full research protocol is developed for each survey round and this includes:

- Scientific rationales for topic aims.

- The international mandatory questionnaires with recommendations and guidance for translation layout and question order.
- Required procedures for sampling, data collection and the preparation of the national data set, and
- Directions for the use of the international data set and the collaboratively agreed procedures for data dissemination.

In addition each Focus Group (FG) of the HBSC study network is responsible for developing one or more optional packages which can be utilised by individual countries to explore particular topics of interest in more depth. For example, the Social Inequalities Focus Group (SIFG) of the HBSC network developed the first optional package dedicated to the measurement of social capital for the 2002 survey (Currie et al, 2002).

Further details of the survey methodology used in HBSC can be found in Roberts et al., 2009.

4.2 STUDY POPULATION

The papers included in this thesis draw on data from 3 survey rounds. Table 1 summarises the source of data used for Papers I-IV, by study year, population group and country of origin.

Paper No	Study Year	Age	Country
Paper I	2002	11,13, 15	England
Paper II	2006	15	Belgium FI, Canada, England, Italy, Poland, Romania
Paper III	2002	15	England, Spain
Paper IV	2010	13, 15	England, Spain

4.2.1 Sample for papers I and III.

Papers I and III utilize data from the 2002 survey. The survey entailed selecting a random sample of pupils in years 7, 9 and 11 from a sample of schools which reflects the composition of schools in England. Special schools and hospital schools were excluded. The selection of pupils to participate was a two stage process. First the

schools were selected at random from all schools in the maintained and non-maintained sectors, and then pupils were selected at random from these schools. Interviewers then supervised pupils as they completed the questionnaire in school. Further details of the methodology used for the English 2002 survey can be found in Appendix 2.

Paper I assessed the relative importance of a range of social indicators representing the multi-component concept on the health, wellbeing and health related behaviours of adolescents aged between 11-15 years old, living in England. This study drew data from 6425 respondents drawn from a random sample of students in 80 schools in England. The overall achieved response rate was 76%.

Paper III examined how social capital derived from different settings (family, school, neighbourhood and peers) influenced the wellbeing of 15 year olds living in Spain and England. A total sample of 3,591 respondents (1884, Spain; 1707, England) was used in the analysis, drawn from random samples of students in 215 and 80 schools respectively. The overall achieved student response rate was 82% in Spain and 76% in England. Both countries carried out the 2002 survey according to the protocol of the international study network (Currie et al, 2002). Full details of the methodology used for the Spanish survey can be found in Moreno et al (2006).

4.2.2 Sample for Paper II

Paper II aimed to test whether young people's (aged 15) participation in different types of club was associated with better health and healthier behaviours and whether these associations are modified by the social position of the adolescent. Data were drawn from the international data file produced by the HBSC Databank based in Norway (see Appendix 1 for further details). Of the 41 countries participating in the 2006 survey, only six included the optional package of questions relating to club participation in their National survey and some of them only for 15 year olds. Therefore only data for Belgium Flanders, Canada, England, Italy, Poland and Romania were included.

4.2.3 Sample for Paper IV

Paper IV investigated the potential for a set of health assets (identified through the social capital framework devised for this thesis) to protect young people from taking up smoking, despite their best friend being a smoker. The English and Spanish components of the 2010 study were used to test the consistency of results across different socio-cultural contexts. There were 4 study objectives, the first three used the complete sample of 13-15 year olds comprising 6692 respondents (3783, Spain; 2909 England) and the fourth objective focused only on those who had a best friend who smoked (1583 adolescents (1027 Spain, 556, England)). The overall student response rate was 78% in Spain and 90% in England. Further details of the Spanish and English methods can be found in Moreno et al. (in press) and Brooks et al. (2011).

4.3 MEASURES

The strength of HBSC study lies in its ability to accommodate a range of complementary and often overlapping theoretical approaches, resulting in the possibility to develop a more sophisticated and multifaceted understanding of health in young people. It has, over the years, developed modules of questions through its optional packages, which have already helped to demonstrate the importance of the wider influences on young people's health. Further details of these published studies can be found on the HBSC website (www.hbsc.org).

4.3.1 Social capital indicators

A paper (Morgan, 1999) submitted to the SIFG on the potential of HBSC to contribute to the evidence base on the links between social capital and health instigated the first dedicated optional package of questions in the 2002 survey.

Two sources of information were used to derive a framework from which questions could be developed. Firstly, 'assessing people's perception of neighbourhood and community involvement', a guide to measuring social capital based on the English General Household Survey, an adult survey collecting data annually on a wide range of topic areas but including five areas of social capital: views of local area, civic engagement, reciprocity and local trust, social networks and support (Coulthard et al, 1999). The indicators included in this guide were developed using Putnam's (1995) original collective notion of social capital. The second source of information was Morrow's (2001) qualitative study set up to investigate whether the concept had any

relevance to the lives of children and young people drawing on both Putnam's and Bourdieu's work to construct a number of key questions for study: These were:

Social networks: what is the composition, durability, ease of access to and frequency of use of young people's social networks? How are these networks defined and what do these networks provide, and how does this differ, according to age and gender? What does friendship mean to this age group?

Local identity: Do young people have a sense of belonging and identity with their neighbourhoods / communities / schools and do they feel safe in neighbourhoods?

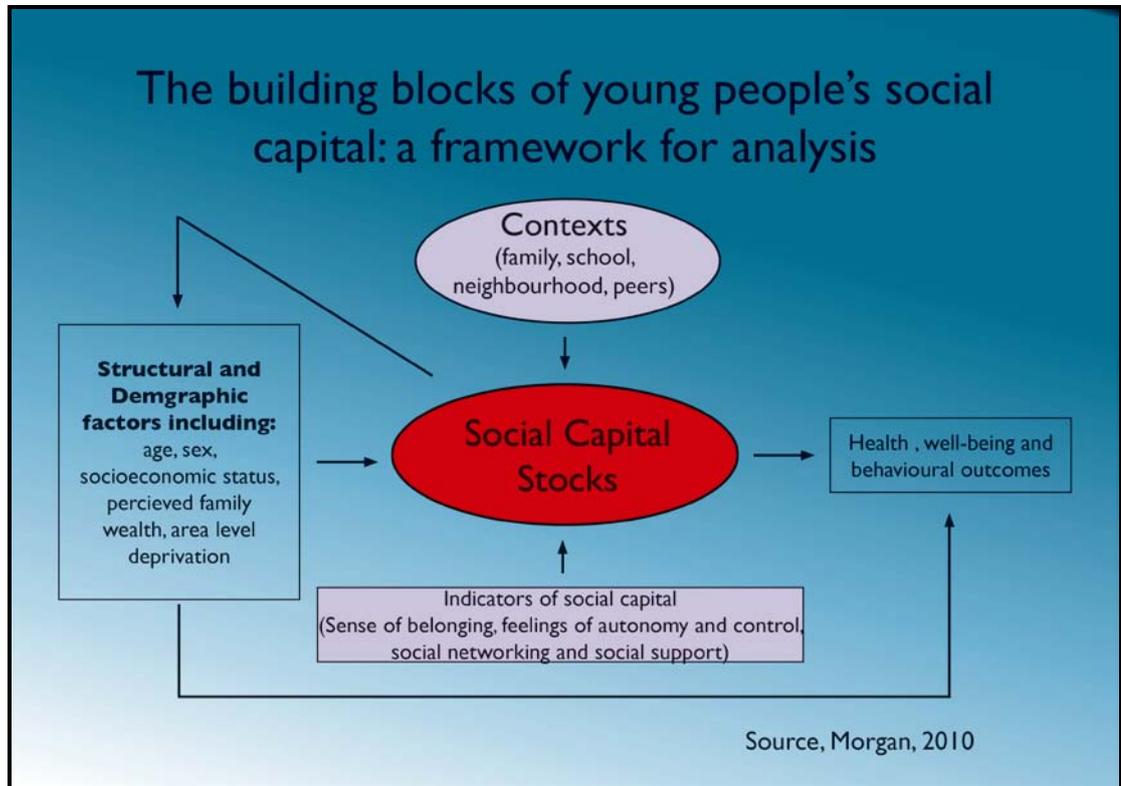
Attitudes to institutions and facilities in the communities: what physical spaces, such as parks, streets, leisure centres, clubs used for social interactions, are available to use and used by young people?

Community and civic engagement: to what extent do young people engage in local community activities? To what extent do they feel they have a say in community and institutional decision making? The SIFG adapted Morrow's working component definitions of social capital to help identify a set of new and existing questions (taken either from the mandatory questionnaire or other optional packages) which could be used to measure young people's perception of social capital in the home, school and neighbourhood environments. This module of questions provided the basis for the development of an analytical framework for the HBSC dataset to carry out exploratory analyses to investigate the links between social capital and health (See Figure 2).

The English 2002 HBSC survey used this optional package and supplemented it with a number of other social capital indicators (not included in the optional module due to issues of space and management of the international questionnaire as a whole). The indicators are classed into 3 broad social capital sub domains. Where possible and appropriate, questions were identified across each of the contexts: family, school, neighbourhood and peers. The social capital domains were:

- **Sense of belonging** , feelings of belongingness and identification within each setting, feelings about the local area safety, facilities, and perceptions of resources in the local area
- **Autonomy and control**: feelings of autonomy, engagement, participation and fairness in the decision and processes that affect young people's lives
- **Social networking** involvement in social networks

Figure 2: Social capital analytical framework



Appendix 3 provides further details of how the social capital indicators were derived. Some variations occurred across survey years either due to improvements to question wording; changes to the HBSC mandatory questionnaire as part of its ongoing review at each survey round; and or data availability when more than one country was included in the analysis. .

4.3.2 Other Factors

One of the key aims of the thesis was to assess the independent impact that social capital could have on all the outcomes included for study. The following socio-demographic factors were considered for inclusion in each of the papers: age, gender and socio-economic status.

Gender was included in Papers I-IV

Age was included in Paper I. Papers II and III only included 15 year olds. Paper IV

merged data for 13 and 15 year olds due small sub sample (those who had a best friend) who smoked.

Socio-economic status (SES) and its proxy Family Affluence Scale (FAS)

Some authors (Mohan et al., 2005) have argued that in the context of adult health, after taking socio-economic factors into account, the impact of social capital on health is weak. This thesis therefore made explicit intention to explore these relationships in the context of young people aged between 11 and 15.

From a very early stage the HBSC study included an SES indicator derived from open ended responses to questions asking about parental job descriptions (Aaro and Wold, 1989). However, coding problems were observed (Currie et al, 2008b), either because young people may not know their parents' occupations or because they are not able to describe them accurately or in sufficient detail for classificatory purposes.

For these reasons the HBSC network developed a proxy indicator for socio-economic position, namely the Family Affluence Scale (FAS). It denotes the amount of access to material assets in the family and also a young person's life chances. It has been developed over a number of waves and has been constructed from either 3 or 4 items: having own bedroom; number of family cars; number of family vacations and additionally number of computers. It is recognized however that the indicator needs to be continually reviewed as some of the items may lose their relevance as families become increasingly wealthy or the included items (e.g. computer ownership changes between 2002 and 2010) lose their discriminatory power. Nonetheless it has been subject to a range of validation studies and so far has retained its currency (Currie et al., 2008b).

Perceived Academic Achievement (PAA) – academic achievement is a fundamental outcome of the school system. Given the age range of HBSC students, it is not possible to collect data on actual academic achievement. However it does include an item which assesses a student's perception of how the class teacher evaluates their academic performance compared to other classmates. Within the context of self-determination theory (Ryan and Deci, 2000), it is recognised that this indicator may promote positive feelings about school and a sense of mastery. It was included in Paper IV as a means of extending the study of social capital to include indicators that could represent the notion of internal assets (as defined by the Search Institute). In

this way Paper IV was able to investigate a wider range of protective factors; external assets, those gained through positive relationships with others (social capital and social support); and internal assets (PAA) the competencies and values that young people develop as a consequence of the social support and empowerment gained from the former.

Social support – in Papers III and IV a number of indicators of social support were included representing the contexts family, school neighbourhood and peers. Whilst others (Lynch et al., 2000) have argued that social capital and social support are overlapping concepts (if not the same thing), this thesis attempts to separate them. It recognizes social support as one positive exchange that may arise from involvement in social networks and as such is separate and conceptually different from social capital. However in the context of an asset approach to young people's health, it is also recognized that it could act as a key protective factor either interlinking with or independent from social capital. A range of well established HBSC measures have therefore been included in the later studies.

4.3.3 Outcomes

Table 2 below summarises the outcomes by paper.

The rationale for inclusion of this range of outcomes is threefold. Firstly, and importantly they reflect the key outcomes associated with mainstream health promotion. The research questions were generated specifically to test whether social capital could be applied to the practical development of future health promotion programmes. Secondly, certainly at the outset, there was a gap in the evidence base for the links between social capital and these mainstream health promotion outcomes. Much of the literature available on children and young people related to more educational and developmental outcomes (Runyan et al., 1998; Egerton, 2002) Thirdly, in the context of the asset approach the idea is to identify those assets that can both promote health and wellbeing and reduce the likelihood of engaging in risk taking behaviour.

Table 2 Outcomes studied by Papers I-IV			
Paper	Self Rated Health and Wellbeing	Healthy Behaviours	Risky Behaviours
I	Self reported health Feeling low each week	Fruit consumption Vegetable consumption Physical activity	Smoking Drinking
II	Self reported health Life Satisfaction Health Complaints	Fruit and vegetable consumption Soft drink consumption Physical activity (and its converse sedentary behaviour)	Smoking Drunkenness
III	Life satisfaction		
IV			Smoking

Health Outcomes

Self-rated health is a subjective indicator of general health. Empirical studies have shown that it is an independent predictor of mortality (Kelly and Baker, 2000). Additionally, adolescent self-rated health is associated with a broad composition of other health indicators - medical, psychological, social and health behaviours (Vingelis et al., 2002; Breidablik et al., 2008).

Life satisfaction is an important cognitive aspect of well-being and assesses an overall evaluation of the quality of a person's life (Cantril, 1965). This has been defined as the cognitive assessment that the person makes of his/her life in general (Pavot and Diener, 1993). It is considered to be relatively stable over time, in contrast to spontaneous feelings related to one's immediate experiences.

Health complaints are an important indicator of well-being. Health complaints include both somatic symptoms such as headache or backache, and psychological symptoms, such as nervousness or irritability. As they tend to cluster together (Alfven, 1993; Burt, 2002) they can cause an immense burden not only on the individual, but also on the health care system. Paper I uses a single item from the HBSC health complaints scale – 'feeling low'. Paper II uses the full index.

Healthy behaviours

The primary mechanism for overweight and obesity, a growing concern amongst adolescents in Europe (WHO, 2009a), is an imbalance of energy intake versus energy expenditure;

Regular consumption of sugar sweetened beverages has been associated with increased energy intake, weight gain, risk of overweight and obesity, and the development of obesity-related chronic metabolic diseases, such as metabolic syndrome and type 2 diabetes (Vartanian et al., 2007; Malik et al, 2010).

Fruit and vegetable consumption in childhood and adolescence has been linked to a wide variety of positive physical health outcomes (Maynard et al, 2003; Vatanparast et al, 2005; Holt et al, 2009).

Physical activity is essential for both long and short-term physical and mental health. Establishment of healthy patterns of physical activity during childhood and adolescence is important because physical activity tracks during adolescence and from adolescence to adulthood (Strong et al, 2005; Hallal, 2006).

Time adolescents spent in screen-based sedentary activities has been shown to be related to weight status and to have a dose-response relationship with a variety of risk factors for cardiovascular disease (Mark et al, 2008; Hume et al, 2009).

Risk behaviours

Tobacco use is still the leading cause of preventable death in the world, causing the greatest burden in low- and middle-income countries (WHO, 2009b). Smoking behaviour is typically established in adolescence as most adult smokers had their first cigarette or were already addicted to nicotine before the age of 18 (Robinson et al, 2011).

Adolescent risky drinking (including frequent drinking and drunkenness) is common, despite the associated risk of adverse psychological, social, and physical health consequences including academic failure, violence, accidents, injury, as well as unprotected sexual intercourse (Gemel et al., 2003; Windel et al., 2003).

4.4 DATA ANALYSES

The overall aim of the thesis was to assess the potential independent impact that social capital (and its underlying constructs) could have on the health, wellbeing and health related behaviours of young people and therefore consideration was given in all analyses to potential confounding factors. All papers considered the potential effects of gender, age and socio-economic status through a range of multivariate techniques. These were multiple logistic regression (Paper I and IV), general linear modeling (Paper III), multi level logistic regression (paper II) and classification tree analysis (paper III)

4.4.1 Multiple logistic regression

Papers I, and IV used multiple logistic regression to predict the outcome of the dependent variable with only two possible outcomes, for example reporting less than good health and reporting good health, from a set of independent variables. Variables with only two possible outcomes are known as dichotomous or binary variables. Logistic regression models are used to assess the independent effects of all the analysis variables on the selected health measures. Logistic regression indicates whether each analysis variable makes a significant contribution to explaining the variation in the health measure, having held constant all the other analysis variables. This method is used to highlight the main factors associated with health and health behaviours studied in these papers.

There are different methods of including independent variables in the logistic regression model. In paper I forward stepwise selection was used where the model starts off only containing the constant and then at each step the independent variables which is the most highly significant is added in. Variables are then examined and the coefficients which make the observed results “most likely” are selected while the others are removed using either the Wald statistic or the Likelihood-Ratio test. When two (or more) independent variables are highly correlated this is referred to as collinearity. If one of the independent variables is fitted in the model, the other will have very little, if any, extra information with which to explain the variation in the dependent variable. SPSS only fits one of those variables – the one which explains most of the variation in the dependent variable.

Paper IV uses the backward stepwise regression where the analysis begins with a full saturated model and variables are eliminated from the model in an iterative process. The fit of the model is tested after the elimination of each variable to

ensure that the model still adequately fits the data. .When no more variables can be eliminated from the model, the analysis has been completed.

4.4.2 Multi-level modeling

Paper II used combined data from 6 HBSC countries to examine the independent associations between participation in clubs of different types and a range of health related outcomes countries. It carried out multilevel logistic regression analyses with adolescents nested within schools and within countries (and used a three-level random intercept model). For each outcome variable a separate analyses was carried out with club participation as the independent variable, controlling for gender and FAS.

The Mlwin2.1 software package with second order predictive quasi-likelihood estimation procedures was used to perform the analyses. P-values <0.05 were considered significant. Multi-leveiling modelling techniques are increasingly used in HBSC studies to study the effect of cluster level variables (in this case school and country) on the individual level outcomes (Rasbash et al., 2005; Roberts et al., 2009).

4.4.3 General linear model (GLM)

Paper III used general linear modeling to assess the overall predictive value of a range of health assets (representing social capital and support) taken together as well as how well each independent variable predicts life satisfaction whilst controlling for each of the other independent variables. Individual models for Spain and England were developed. The results of the GLMs were summarised using the partial square etha statistic and a standardized coefficient of regression – each enabling a determination of the weight of each of the independent variables in explaining life satisfaction of adolescents in the two different countries.

4.4.4 Classification trees analysis (CTA)

Paper III also used the CTA, function in SPSS to assess the combination of social capital indicators (candidate assets) that could improve the mean life satisfaction

beyond that achieved for the sample as a whole. It is a nonparametric statistical procedure which helps to identify mutually exclusive and exhaustive subgroups of the study population which share a common characteristic and that influence the outcome of interest. Its multilevel structure, resembling the branches of a tree, help to determine any interactions present between independent variables and how they affect one another.

It has several advantages; it can cope with big sample sizes, deal with nominal and ordinal variables more easily than other explanatory models and provides a clear representation of the factors that could be translated into a set of actions for achieving the desired outcome.

This study used the exhaustive Chi-squared Automatic Interactive Detector (CHAID) algorithm to select a set of predictors and their interactions that optimally predict the dependent measure. Each predictor' variable was assessed to see if splitting the sample based on these predictors led to a statistically significant discrimination in life satisfaction. Node 0 of the decision tree identified the most important factor and new branches of the 'tree' emerged as the analysis developed an algorithm (represented by consecutively numbered nodes) highlighting the order of importance of each independent variable of interest. The tree continued to divide until no further significant discrimination of variables could be found. The F statistical test (ANOVA) assesses the statistical significance of each of the segmentations.

Camp and Slattery (2002) argues that CTA has advantages over other regression methods as it assumes that interactions are the rule rather than the exception and, through its method of recursive partitioning, facilitates interactions readily. This allows the analysis to model multilevel interactions that would be laborious (if not impractical) using other traditional methods.

5 RESULTS

5.1 INTRODUCING A FRAMEWORK FOR ANALYSIS

Figures 1 and 2 provided the analytical frameworks for the analyses. Both recognize the environments where young people's health is experienced and the different facets of social capital that might have a role to play in producing overall health and wellbeing. Figure 2 was used to articulate the research questions for papers I and II. Namely, what are the independent effects of social capital on a range of health and health related behaviours after taking age, gender and socio-economic status into account? Figure 1 aims to capture the idea of an asset approach to young people's health by highlighting that there may be a cumulative effect of a set of protective factors that might individually or collectively offset a range of known risks. Papers III and IV use this framework to pose questions about how assets might be maximized and risks reduced.

The following sections aim to summarise the findings across Papers I-IV by each of the outcome groups consider: health and wellbeing; healthy behaviours and risk behaviours. The intention is not to replicate in total the results sections of each of the papers but to report a range of findings from each of the papers for illustrative purposes. All results presented achieved significance according to the specific tests used in each of the papers.

5.2 SOCIAL CAPITAL AND SELF REPORTED HEALTH AND WELLBEING

The concepts of health and wellbeing are both complex and difficult to disentangle. Papers I, II and III use three well established indicators to express various aspects of health and wellbeing. It is important to say from the outset that that in general across each of the 3 surveys waves the health of the majority of 11-15 year olds in Europe and North America was good (Currie et al, 2004; Currie et al., 2008a). This is an interesting finding in itself given that there are many negative portrayals of young people in the media and some extent policy and practice environments (UNICEF, 2007).

Nonetheless Paper I with its focus on English adolescents, found that there were also a significant minority who reported low levels of self reported health and wellbeing. For example, in this study, over a fifth of 11-15 year olds reported 'less than good health' and a third reported 'feeling low each week'. Patterns were generally similar for

boys and girls, although girls were generally more likely to respond negatively to these measures and differences between boys and girls increased with age.

5.2.1 Social capital and self reported health

Paper I explored the relationship between social capital and self reported health amongst English 11-15 years and found through bivariate analysis that a number of the social capital indicators chosen for study were associated with it.. Logistic regression results highlighted independent associations for; sense of belonging (in both the family and school setting) and participation in neighbourhood clubs (social networking). These associations were particularly strong for family sense of belonging and social networking. For example, young people who had low levels of both attributes were almost twice as likely to report 'less than good health' (OR: 1.87 and 1.96 respectively) compared to those in the reference category.

Gender was also an important factor in the model as girls (independent of other factors considered) were one and a half times more likely (OR: 1.53) to report lower levels of health. FAS, as a general level of socio-economic status did not feature in the final model.

Paper II used the 2006 dataset to further explore the relationship between self reported health and social networking amongst 15 year olds in six HBSC participating countries. In this study, levels of social networking were assessed by the number of different types of clubs young people were involved in ranging from none, one or two or more. The multi-level logistic regression carried out to assess the relationship between social networking and health used data from the six countries together for and performed separate analysis for each outcome.

Results showed that the probability of 15 years perceiving their own health to be excellent was higher in those who participated in sports clubs, those belonged to a political organization and those who belonged to one club (versus none), no matter which one. The strongest independent association was found for those who participated in sports clubs who were twice as likely to report excellent health compared to those that didn't (OR: 2.01).

Results were also patterned by gender and FAS. Girls and those in lower FAS groups were less likely to report excellent health.

5.2.2 Social capital and wellbeing

Paper I used one of the items included in the HBSC Symptoms Checklist scale to assess levels of wellbeing, that is how often had the young person felt low at least once a week over the last six months. Only two of the sub constructs of social capital appeared in the final model. Young people with a low sense of school belonging and those who thought their father was controlling were twice as likely (OR: 2.01; OR: 1.92) to report feeling low each week.

Logistic regression also showed girls were more likely to report feeling low compared to boys (OR: 1.40). FAS did not appear as a significant predictor.

Paper II explored the relationship between club participation (part of the social networking sub construct) and the life satisfaction of 15 year olds living in six participating HBSC countries. Overall those who participated in any club (compared to none) were more likely to report high satisfaction (OR: 1.19). The strongest association, as for self reported health, was found between sports club participation and life satisfaction. Young people aged 15 who were involved in sports clubs were one and a half times more likely (OR: 1.51) to report high life satisfaction compared to those who were not.

Independent relationships were also found between the socio-demographic factors and life satisfaction. Those adolescents in the high FAS group were twice as likely to report high life satisfaction compared to those in the low group (OR: 2.61) and girls were significantly less likely to report high life satisfaction compared to boys (OR 0.67).

Paper II also used the HBSC Health Complaints index. Those who reported at least one symptom at least once a week are less likely to go to a sports club (OR: 0.74), but more likely to be involved in voluntary service, cultural and other clubs. The associations for this outcome were also patterned both by gender and FAS.

Paper III used life satisfaction as an outcome to assess the independent relationships between a set of 'candidate' health assets (selected from the social capital framework plus a set of additional well established HBSC social support indicators) and wellbeing. The patterning of the relationships was compared across a sample of 15 year olds living in Spain and England to test the consistency of findings across different socio-political contexts.

The GLM found a number of similarities and differences between the 2 countries. In England, the social capital indicators which were significant in explaining the variance in life satisfaction were family autonomy and control (characterized by the amount of shared decision making at home with parents), family sense of belonging (doing things together) and school sense of belonging (perceptions of classmate bonding) explaining, approximately 3%, 1% and 2% of the variance respectively). In Spain, social capital as represented by family autonomy and control and school sense of belonging were significant in the model explaining 1% and 3% of the variance respectively.

In England FAS was a significant factor in the model and in Spain indicators representing the concept of social support namely the social support received from parents and teachers were associated with the outcome. Gender was not found to be a significant factor in either of the models presented.

Paper III also used CTA approach to assess how the independent variables ('candidate assets') might operate together to predict life satisfaction. In England, the optimum configuration of factors included 2 indicators of social capital and one social support variable. The analysis showed that mean life satisfaction could be improved from a mean of 7.08 amongst 15 year olds as a whole to a mean of 7.86 amongst those respondents who had high levels of family autonomy and control, high levels of school sense of belonging (2nd level) and high levels of family support (3rd level). By way of contrast, in Spain, optimal levels of life satisfaction were achieved when levels of family and school support and neighbourhood sense of belonging were high. In this instance mean life satisfaction improved from 7.20 in the sample as a whole to 8.02 for those with all 3 factors in place.

Table 3a summarises factors that were found to be independently related to health and wellbeing across each of the papers.

TABLE 3A: SUMMARY OF FACTORS INDEPENDENTLY RELATED TO HEALTH AND WELLBEING						
	Self Reported Health			Wellbeing		
	Papers			Papers		
	I	II	III	I	II	III
Sense of Belonging	2	NC	NC	1		S1 E2
Autonomy and Control		NC	NC	1		S1 E1
Social Networking	1	2	NC		2	
Social Support	NC	NC	NC			S2 E1
FAS			NC			
Gender			NC			

Notes on table:
S =Spain; E=England. NC – factor not considered in analysis. Shaded area – factor independently related to outcome. Number denotes no. of settings (e.g. family, school, or neighbourhood). Numbers for paper 2 denote number of different types of club (wellbeing indicator here represents life satisfaction)

5.3 SOCIAL CAPITAL AND HEALTHY BEHAVIOURS

The HBSC study includes a range of outcomes related to healthy behaviours. Papers I, and II include analyses of the relationships between social capital and different dimensions of healthy eating and physical activity.

Healthy Eating

Paper I used two variables to assess healthy eating patterns, namely the consumption of fruit and the consumption of vegetables separately. The logistic regression analysis showed that similar factors were associated with the likelihood of eating fruit and vegetables. The strongest associations were shown between social networking (as measured by the level of involvement in neighbourhood clubs) and healthy eating. Those 11-15 years in England who did not participate in clubs were two and half times more likely not to eat either fruit or vegetables daily (OR: 2.48 and OR: 2.62 respectively). Family sense of belonging was also independently associated with the consumption of fruit and vegetables, the lower the sense of belonging the lower the daily consumption (OR: 1.62 for fruit; OR: 1.90 for vegetables). The logistic regression analysis also found that neighbourhood control (being able to make suggestions in the running of associations) had an independent but weak impact on the likelihood of young people not eating fruit daily (OR: 1.21).

Gender and FAS were both independent predictors of daily fruit and vegetable consumption.

Paper II investigated the links between club participation and healthy eating behaviour amongst 15 year olds old. Fruit and vegetable consumption was merged into one outcome variable and an additional outcome, soft drink consumption was also included. Those involved in sports or cultural groups are more likely to eat fruit and vegetables than those who don't but in general being involved in any club increases the likelihood of eating fruit and vegetables (OR: 1.23) and this likelihood increased to 1.59 for those who participated in two or more clubs compared to those who did not participate.

Club participation in general decreases the likelihood of consuming soft drinks daily (membership of one club, OR: 0.79 and two or more clubs, OR 0.67). However attendance at sports clubs, political organizations and youth groups increases consumption.

Independent effects were observed for FAS and gender across both outcome variables. Girls were more likely than boys to eat fruit and vegetables daily but less likely to drink soft drinks. Those in the high FAS group were more likely to eat fruit and vegetables and more like to drink soft drinks compared to those in the lowest FAS group.

Physical Activity

Paper I used a well established measure of physical activity to assess the proportion of English 11-15 year olds who were meeting recommended levels of physical activity. Just over half of respondents did not meet the guidelines. Girls were less likely to meet them than boys and by age 15, the proportion was 52% for boys and 72% for girls. The social capital factors that were significantly and independently related to physical activity were social networking (involved in neighbourhood clubs and school clubs), autonomy and control at home (denoted by the amount of control they perceived their mother had on decisions) and a school (denoted by perceptions of involvement with making rules). The strongest association was found with social networking, those who did not participate in clubs were over twice as likely not meet the guidelines(OR: 2.26).

Paper II further explored the associated of types of club participation that were associated with physical activity. As might be expected, those who are involved in sports clubs are much more likely to report higher levels of physical activity (OR:

2.95). However, there was no significant impact on levels of physical activity found for other types of club.

Paper II utilised an additional outcome measure characterising levels of activity amongst young people. Sedentary (characterised by watching television more than 2 hours a day) behaviour as might be expected was less common amongst those who participated in one club (OR. = 0.82) and those who participated in two or more (OR: 0.66).

Table 3b summarises the factors independently related to healthy behaviours across papers.

TABLE 3B: SUMMARY OF FACTORS INDEPENDENTLY RELATED TO HEALTHY BEHAVIOURS								
	Healthy Eating		Soft Drinks		Physical Activity		Sedentary Behaviour	
	Papers							
	I	II	I	II	I	II	I	II
Sense of belonging	2	NC	NC	NC		NC	NC	NC
Autonomy and control	1	NC	NC	NC	2	NC	NC	NC
Social networking	2	2	NC	3	2	1	NC	1
FAS	2		NC				NC	
Gender			NC				NC	
AGE	1	NC	NC	NC		NC	NC	NC

Notes on table:
 S =Spain; E=England NC – factor not considered in analysis. Shaded area – factor independently related to outcome. Number denotes no. of settings (e.g. family, school, or neighbourhood). Numbers for paper 2 denote number of different types of club

5.4 SOCIAL CAPITAL AND RISK BEHAVIOURS

The relationship between social capital and a range of risk behaviours was explored in Papers I, II and IV.

Smoking

Paper I examined the independent effect of social capital on the smoking behaviour of 11-15 year old English adolescents. Three social capital indicators were found to be independently related to the likelihood of being a smoker. Those with low sense of family belonging and those who never participated in school clubs were over one and half times more likely to be a smoker compared to those in the highest category (OR: 1.64 and 1.60 respectively). Additionally those who had a low sense of neighbourhood

belonging were 1.42 times more likely to be a smoker compared those with high sense of belonging.

However, most obviously increasing age was found to be the most strongly associated independent factor with this outcome. Fifteen year olds were fourteen time more likely ((OR: 14.83) compared to 11 year olds. Girls were also more likely to smoke than boys.

Paper II explored the impact of club participation on the smoking behaviour of 15 year olds in six countries and found that the overall probability of smoking was lower for those participating in at least one association (OR: 0.80) and even lower if they participated in more than one association (OR: 0.64). But adolescents who were involved in political organisations or who attended youth clubs were more likely to smoke (OR: 1.74 and 1.66 respectively).

Paper IV used an asset based framework to assess whether a range of factors associated with social capital and social support could protect young people from smoking even amongst those who had a best friend who smoked. The analysis compared the experiences of adolescents living in Spain and England. In addition this analysis included the variable 'perceived academic achievement' as a proxy indicator of a young person's 'positive identity'. Whilst, the study confirmed the importance of peer influence on smoking behaviour, some aspects of social capital retained impact even in the context of a group of adolescents who had a best friend who smoked. These were different in England and Spain. In Spain, those liking school at the medium level, and those participating in high levels of organized leisure time activities were more likely to be non-smokers (OR:1.64 and OR: 2.00 respectively). In England, two external assets were found to be significant. High levels of school autonomy and control and those in the medium level of neighbourhood facilities both increased the probability of being a non-smoker (OR; 1.74; OR: 1.80 respectively).

Perceived academic achievement (PAA) - a student's perception of their teacher's assessment of how well they were doing compared to others in the class) was found to be the most strongly associated protective factor in the logistic regression model using the sub sample population. Those with a high level of PAA were nearly twice as likely to be non-smokers in England and over two and half times more likely to be non-smokers in Spain (OR: 1.93; OR: 2.79 respectively) compared to those with the lowest level of achievement.

Drinking

Paper 1 examined the independent effect of social capital on the drinking behaviour of 11-15 year old English adolescents. Regular drinking was common: boys were slightly more likely to drink than girls (33% compared to 29%) and prevalence increased significantly with age. Four of the social capital indicators were found to be independently associated with weekly drinking. Regular drinking was more common in those who: perceived their father to always control what they did (OR: 1.39); those with a low sense of family belonging (OR: 1.60); those who did not have opportunities to be involved in school decisions (OR: 1.24) and those with a low sense of school belonging (OR: 1.41).

Paper II used another indicator of alcohol use - drunkenness (the frequency of being drunk) as a marker of risk taking behaviour. The influence of club participation on the frequency of being drunk was mixed. Sports, political and youth clubs increased the risk of having been drunk, while cultural and religious groups decreased it. In general, however, participating in clubs and associations seems to be protective from drunken behaviour: belonging to one club (OR: 0.82), belonging to more than one club (OR: 0.74). There was an inverse relationship between FAS and likelihood of drinking in this study.

Table 3c summarises the factors that were independently related to risky behaviour across papers.

TABLE 3C: SUMMARY OF FACTORS INDEPENDENTLY RELATED TO RISK BEHAVIOURS								
	Smoking				Regular Drinking		Drunkenness	
	Papers							
	I	II	IV		I	II	I	II
Sense of belonging	2	NC	S1	E1	1	NC	NC	
Autonomy and control		NC		E1	2	NC	NC	
Social networking	1	3	S1			NC	NC	5
Social support	NC	NC	S2		NC			NC
FAS	NC	NC				NC	NC	
Gender						NC	NC	
AGE		NC	NC			NC	NC	NC
Perceived Academic Achievement		NC	S	E	NC	NC	NC	NC

Notes on table:
 NC – factor not considered in analysis. Shaded area – factor independently related to outcome. Number denotes no. of settings (e.g. family, school, or neighbourhood).
 Numbers for paper 2 denote number of different types of club

6 DISCUSSION

6.1 SUMMARY OF KEY FINDINGS

The papers included in this thesis sought to examine how different measures of social capital are associated with the health and a range of health related behaviours of young people aged 11-15 years old and to test the consistency of findings across social capital domain, setting and country context. The original hypothesis put forward was that social capital could be a resource for young people to maximise possibilities for health and wellbeing and to protect against risk taking behaviour. Papers III and IV, specifically used an assets based approach to frame the analysis with the suggestion that the more we provide young people with opportunities to experience and accumulate the positive effects of a range of health assets, the more likely they are to achieve and sustain health and wellbeing now and in later life. Social capital was put forward in these papers as a potential key health asset.

Overall, this thesis has shown that social capital matters for young people's health, statistically significant and independent relationships were found between the range of social capital indicators representing the 3 domains (sense of belonging; autonomy and control; social networking) and the health and health related outcomes selected for study. The findings across Papers I-IV suggest that the individual constructs of social capital are important in their own right and may act as protective factors or 'health assets' for promoting health and reducing the likelihood of engagement in risk taking behaviour. However, there were some inconsistencies in the patterns of association found. There were different relationships between different indicators of social capital across different health outcomes. In addition, the strength of relationship between each of the sub constructs of social capital and various outcomes varied as other known influential factors were taken into account. These factors included socio-economic status (as represented by FAS), gender, age, perceived academic achievement, peer group, and socio-cultural context.

A number of findings are worthy of note. Firstly, the ***role of the family*** as a source of social capital remains an important factor in supporting young people's opportunities for health. Paper I found independent associations between sense of family belonging and all outcomes except for self reported health and physical activity. This indicator of social capital aimed to capture levels of integration within the family characterized by the amount and types of activities that they did together. Paper III showed that even at age 15, family support and belonging still had a role to play in determining the overall

satisfaction with life. However, that said the notion of 'autonomy and control' at home, also became a characteristic of family life that influenced a young person's wellbeing.

Secondly, during the difficult period of adolescence, all the environments (family, school and neighbourhood) were young people live; work and play seemed to have a role to play in health. Although all four papers highlighted that there was an inconsistency of relationship between these settings and different health outcomes. From an assets perspective, the idea is that protection ideally should be cumulative across all settings. As Moses (2006) has noted, children's experience in their home and community environments impact on them independently. However although positive experiences in one sphere might counteract negative ones in another, different spheres cannot not completely compensate for one another.

Paper III highlighted the potential synergistic effect across the settings to maximize opportunities for health. For example, the accumulated advantage of having high levels of family autonomy and control, school sense of belonging and family social support increased mean life satisfaction from 7.08 to 7.86 in the English analysis. For Spanish adolescents, the constellation of factors was different. Taken together, those with high levels of family and school support and neighbourhood sense of belonging saw mean life satisfaction improve from an overall mean of 7.2 to 8.02.

Thirdly, there are benefits to health and related behaviours of **social networking**. Evidence accumulated across papers I, II and IV highlighted that young people who are involved in some sort of club are more likely to report better health, to have healthier lifestyles and less likely to engage in risk taking behaviours. The findings in paper II however do suggest that whilst being involved in clubs is in general good for health, some types of clubs may be more health enhancing than others. For example, in some types of clubs (political and youth groups), peer pressure has an influence, making behaviours such as smoking and drinking more acceptable and cool.

Fourthly, evidence presented in papers III and IV (studying 15 year olds) suggest that as adolescents get older **notions of autonomy and control** become more important whether that be within the context of the family or school. In paper III for example, family autonomy and control is a dominant factor for English adolescents compared to other social capital domains and in paper IV school autonomy and control is shown to have an independent effect on the probability of a young person being a non-smoker even when they had a best friend who smoked.

More generally, the studies included in this thesis have shown that social capital is not a 'one size fits all' concept, as its relationship to health and related outcomes social capital varies across social capital domain, age and context. That said Papers II and III, demonstrated that at a country level there are some commonalities as well as differences. Paper II showed that taken as a whole, club participation was beneficial for a range of adolescent health and health related outcomes in a diverse range of countries. Paper III showed that the wellbeing of 15 year olds was influenced by a similar range of health assets (social capital and social support) in both Spain and England. However, the exact configuration of how they might work together to produce it was different in across country context.

6.2 THE INFLUENCE OF SOCIAL CAPITAL BY CONTEXT

The next section discusses each of findings further and clusters them by the key environments where social capital might be sourced. Summarising the results in this way might be more helpful to assess the implications for policy and practice.

6.2.1 Family

Evidence from papers I and III confirmed other research (Bornstein, 2002) that building warm loving and positive relationships in the home are essential for securing the healthy development of children and young people. For example, in Paper I (focusing on English 11-15 year olds), family sense of belonging, characterized by a range of activities parents and young people did together was influential in determining the likelihood of regular smoking and drinking activity, consumption of fruit and vegetables and self reported health. In this paper family sense of belonging could be seen as a health asset or protective factor for health and health related behaviour (except for physical activity). In this latter case, it may be that other social capital indicators (such as participation in school clubs) dominated the results of the final logistic regression model.

Paper III, explored the influence of social capital on the wellbeing of 15 year olds living in Spain and England and provided evidence that the family retained its importance as an overall 'protective' setting. However in this study, a different dimension of social capital, autonomy and control was more strongly related to the outcome of interest than other dimensions considered in the multivariate analysis, particularly in England. The notion of autonomy and control in this study was characterized by a young

people's perception that they had a say in making decisions about what they did. These findings reflect established notions of adolescent development that indicate the need for autonomy increasing as they move through their teen years (Vieno et al., 2005). In this study, higher levels of autonomy and control were positively associated with higher levels of life satisfaction, indicating it to be a protective factor for wellbeing

Paper III also explored whether different socio-cultural contexts had an impact on the ways in which social capital influenced wellbeing. The study found that in Spain the family attribute most strongly associated with wellbeing was family social support. In this study, this was measured by a young person's perception of their ease of access to help and affection during times of difficulty. The intricacy of the findings in Paper III suggests that the family as a unit needs to be understood in different country contexts. Fifteen year olds in England seem to put greater emphasis on becoming independent whereas Spanish adolescents gain more from direct family social support. These findings may reflect differences in the nature of family life in the two countries. In general in Spain – albeit it changing – there is an orientation towards close bonds between family members and general levels of support are high even after adolescence and into early adulthood (Lopez, 1993).

6.2.2 School

The potential for school to be protective of health is well known (Vieno et al, 2004) and Morrow (2001) found that from a young person's perspective, school was an important 'community' in its own right. Papers I, III and IV showed some evidence to reinforce this idea as some of the indicators associated with school social capital were found to be associated with self reported health, wellbeing, physical activity, and smoking and drinking.

School sense of belonging, manifested through a range of positive relationships and feelings of security and connectedness with classmates featured as a protective factor in Papers I and III. In these papers associations were found between school sense of belonging and self reported health and levels of wellbeing. For example in Paper I, young people (aged 11-15) were twice as likely to report feeling low each week with low levels of belonging. Paper III found that in the case of English 15 year adolescents, a sense of school belonging could work together with family autonomy and control to improve life satisfaction. Others (Danielson et al, 2009) have labeled the items included in this social capital domain as 'classmate support', nonetheless the composite indicator was found to be protective of life satisfaction in their study.

In paper IV, an additional indicator (or 'candidate asset'), liking school, was included in the analysis to explore the characteristics of those who had a best friend who smoked but didn't smoke themselves. It was found to be positively associated with the chances of being a non-smoker amongst Spanish 15 year olds. Previous research (Samdal, et al, 2000) has utilised this factor as an alternative measure of school connectedness and found it to be protective of health compromising behaviour. School sense of belonging did not appear as a significant factor in this analysis. One could argue that indicator of social capital associated with classmate relationships includes the possibilities for both negative and positive influences on health.

Papers I and IV presented evidence that school autonomy and control could be protective of some risk taking behaviors. In Paper 1 this social capital domain was represented by a young person's perception that they had an opportunity to be involved in decision making at school. The analysis showed that lower levels of control were associated with higher levels of drinking. Paper IV also found school autonomy and control to be protective against risk taking amongst English adolescents, even when the young person had a best friend who smoked. In this instance, it was defined by a young person's perception that their teachers treated them fairly, and they felt they were encouraged to express their own views in class. Those with high levels of autonomy and control were less likely to smoke. The findings may suggest that English adolescents have more need to feel independent. The autonomy and control they feel through being able to contribute to daily life at school may increase their adaptation to this environment (Samdal et al., 2000) helping to build confidence so that they can take control over decisions that affect them.

Paper III provided evidence of the potential for school to influence the wellbeing of their pupils through investing in social capital and social support strategies. However, as in the case of family, social support (from teachers in this case) seemed to have more potential as a key health asset. For example, mean life satisfaction was improved amongst those Spanish adolescents who had high levels of both family and school social support demonstrating the potential cumulative aspects of the asset approach.

6.2.3 Neighbourhood

From the outset the neighbourhood context has been a key facet of social capital or at least Putnam's (1995) collective conceptualization of it. Neighbourhood social capital

was measured in 3 ways in this thesis. Sense of belonging (perceptions of neighbourhood in terms of trust, safety and available facilities); autonomy and control (ability to have a say in organisational decision making); and social networking (participation in a range of clubs and associations).

Papers I and III and IV included an indicator of neighbourhood sense of belonging and evidence of its contribution to health was mixed. Paper I showed that *belonging* was influential in determining self rated health and smoking behaviour. The indicator in this paper most reflected measurements in early social capital studies associated with the perceived trust and reciprocity available from neighbours. In paper III the indicator was only marginally represented in the multivariate analysis shown as a third level factor for improving life satisfaction amongst Spanish adolescents. In Paper IV, a sub category of the broader sense of belonging scale was shown to be protective of smoking behaviour amongst English adolescents. Other studies (Drukker et al, 2003, 2005) have shown positive links between neighbourhood sense of belonging (social cohesion, informal social control) and self rated health and quality of life. Although the measures used in these studies have in part at least focused on the young people's social capital accrued through adult connections.

Paper I also included an indicator to represent the domain of *neighbourhood autonomy and control*. Young people were asked about whether they had opportunities to put forward ideas in relation to a range of community and parent / teacher associations. A marginal independent effect was found with the daily consumption of fruit (those with lower sense of control were more likely not to eat fruit) but this indicator showed no significant association for any other variable studied. The absence of this indicator of social capital may be due to the fact that that young people are often excluded from the possibilities to participate in community life and therefore there is an absence of experience rather than association (Weller, 2006). Also Morrow (2001) in her original small scale study found that membership of formal community networks and associations appeared to be very limited and more importance was placed on small-scale, interpersonal networks based on friendship and family.

Some of the most striking findings, taken across the studies as a whole relate to the neighbourhood *social networking* domain of social capital. Papers I, II and IV all presented evidence of the potential protective factor of this sub domain. It was not included in Paper III due to data availability issues across countries studied.

Paper I measured the frequency of participation in a range of clubs ranging from sports clubs through to scout, drama and church groups and classified responses into levels of participation. It found strong associations between social networking and self reported health, wellbeing and all health promoting behaviours but not risk taking behaviours. Those who did not participate or had low levels of participation were more likely to report poorer health, wellbeing and less likely to adopt healthy behaviours.

Paper II used a slightly modified indicator but also presented evidence that - In general, adolescents who are involved regularly in some sort of club report better health, are more likely to have healthier lifestyles and less likely to engage in risk taking behaviour. However, differences were found in the types of clubs that were important. For example, being involved in youth clubs seems to increase the likelihood of adolescent smoking and drinking behaviour. Nonetheless, even for these outcomes, there is a significant protective effect of belonging to one or more clubs which outweighs the observed negative effects.

Paper IV provided additional weight to the evidence that creating possibilities for young people to participate in a wide range of clubs or organisations is beneficial for health. In this instance the evidence came from the analysis carried out for Spanish 15 year olds who had a best friend who smoked. Those with high levels of participation were twice as likely to be non-smokers demonstrating the protective effect of this particular sub domain of social capital.

6.2.4 Peers

Papers III and IV included 2 different variables related to the support that might be gained through friendship networks. Peer friendships particularly as adolescents get older become crucial in helping one another define their identities and social competences (Perez et al, 2007). However it is also well known that that the peer group can contribute to the maintenance and reinforcement of both negative and positive health related outcomes (Sussman et al., 2007). A young person's perception of them having friends who they could talk to about things that bothered them and the amount of time spent with friends in the evening or after school were included in these papers as potential health.

Paper III found no evidence of a protective effect on wellbeing in either Spain or England. This lack of evidence may have something to do with the definition of this particular candidate asset (a combination of same sex friendships). Stanton-Salazar and Spina (2005) found platonic relationships between adolescent males and females

provided a more stable source of peer support, and therefore there may be some masking of protective effect in this analysis.

Paper IV in its analysis of health assets as protective factors to inhibit smoking behaviour amongst those who had a best friend who smoked found that in Spain, peer relationships as defined above increased the likelihood of smoking. These measures may therefore not be capable of unpicking the differences between positive and negative social networks. It could be argued that high amounts of time spent with friends reflect the strong bonds associated with the 'downside of social capital' (Portes and Landolt, 1996). That is, networks are being used as a source of control for certain individuals rather than for a collective good. These findings indicate the need to understand the intricacies of concepts that underpin *positive* youth development and to develop measures capable of tapping into the different aspects of bonding social capital.

6.3 OTHER FACTORS

6.3.1 Family Affluence Scale

The interplay between FAS and social capital cannot be completely disentangled in the analyses carried out for this thesis, however a number of patterns emerged that are worthy of note.

In Paper I the pattern of analysis between FAS and the range of outcomes studied was mixed. No independent association was found between FAS and the outcomes for health and wellbeing. In the case of healthy behaviours, FAS was represented in the final logistic regression model, however by far the strongest associations found were for neighbourhood participation (participation in clubs). No associations were found between FAS and smoking and the relationship was inverted in the case of alcohol consumption. Those young people from higher FAS groups were more likely to drink on a regular basis than those from the lower group. That said sense of belonging (at school and at home) seemed to be protective of this behaviour.

Overall, findings from Paper II demonstrated that young people who came from wealthier backgrounds were more likely to participate in a range of clubs and more often. One interpretation of these findings could be that the findings were an affirmation of Bourdieu's (1983, 1990, 1996) notion of social capital, which highlights the tendency of dominant groups (here: high FAS) to value large group participation, increasing

access to information and to supportive networks from a wider range of sources which could benefit health.

FAS was included in both Paper III and IV and country differences were found. In Paper III, FAS was observed to explain some of the variance in life satisfaction for England but not Spain. This may have some bearing on the difference in social strata between the 2 countries. In Spain, whilst there is a gap between the poorest in society and the rest, the difference between the middle and higher strata is much less distinct.

FAS was entered into the logistic regression models in Paper IV but was not a significant predictor of non-smoking behaviour in the final model for either Spain or England.

6.3.2 Perceived Academic Achievement

Paper IV intentionally included one additional variable in the asset based analysis to capture the idea of internal assets. As discussed earlier, these types of assets are generally seen to result from the accumulation of benefits arising out of supportive environments (e.g. social capital and social support). This 'health asset' was found to be a striking predictor of non-smoking behaviour in the sub sample (those with a best friend who smoked). In both Spain and England, those with a best friend who smoked were over twice as likely to be non-smokers if they thought their teacher rated their academic ability highly compared to other classmates. This internal asset has previously been shown to be a strong and consistent predictor of health and wellbeing (Samdal et al, 2000) and may suggest that respondents who feel they are doing well at school have a sense of mastery that allows them to cope in difficult situations (Griebler et al, 2010). It might be that this represents an intermediary outcome on the pathway to health, thereby minimizing the impact of the social capital and support (external assets) indicators. That said further work is required to understand the relationship between the different domains of social capital and this potential health asset.

6.3.3 Country

Papers III and IV set out to specifically examine their respective hypotheses in 2 different country contexts (Spain and England) to test the robustness and consistency of findings. Both analyses found similarities and differences between countries, affirming the learning from adult literature on social capital that it is not a 'one size fits all' concept. However, notions of sense of belonging, autonomy and control and social networking were found to be, albeit to different degrees important as protective factors

in both countries. Replicating studies like these in different country contexts is important to assess whether there are a core set of assets that can be universally applied. However it would seem that the optimum configuration of them must always be configured locally to take broader socio-political contexts but also to ensure that young people are involved in identifying the key resources that could impact positively on their health and wellbeing.

In the case of Paper III, the health assets relating to social support seemed to be more prominent in Spain. It may be that societal values in Spain lean more towards the collective rather than the individual, especially in relation to the family. This would reflect the cultural traditions of the Mediterranean which encourage member's interdependence (Harkness and Super, 2006). Although, the reality is that in most Western societies, individualist and collectivist cultural models act on a continuum.

6.4 STRENGTHS AND FUTURE CHALLENGES

The unique strength of this thesis is the HBSC study itself. The comprehensive nature of data available on key health influences has facilitated a broad definition of social capital to investigate its links with a range of outcomes. Previous studies have tended to focus on only one aspect of the multi-faceted concept.

Additionally, Wen and Colleagues (2009) expressed the need to investigate the key contexts simultaneously in order to understand their relative importance and inter-relationship. HBSC data relating to the family, school and neighbourhood environments has allowed this to be achieved. Cross country analyses have also permitted the testing of social capital's robustness across different socio-political and cultural contexts.

Previous work (Morrow, 2001, Schaefer-McDaniel, 2004, Bassani, 2007) has debated the usefulness of and / or applicability of the different disciplinary perspectives on social capital for young people. This thesis developed indicators that reflect the range of perspectives articulated by Bourdieu (1986), Coleman (1988) and Putnam (2000), thereby keeping an open mind as to their relative contribution to young people's health development. This is a further strength of the thesis.

Earlier criticisms of the concept relating to the vagaries of its description were in part overcome in Paper II. Simply arguing that social participation is good for health is not

helpful for its practical application. Paper II explored not only whether participation in clubs was associated with health outcomes but also which types of club were more beneficial than others. Obviously further work is required to ascertain the key characteristics of participation that are health enhancing.

The thesis also embraced the notion that young people should be seen as active in the process of health (acting as social agents) with the possibility of shaping the environments around them. In particular the measures included as part of the autonomy and control domain were an attempt to investigate health gain through active participation in decision making processes.

It is also argued that using an asset based approach has been helpful in unraveling some of the complexities of social capital. Accruing a range of key protective factors across early years and during the key development stage of adolescence can be beneficial for building the resilience required to deal with the stresses and strains that young people will inevitably face as they grow up. Identifying the key assets for health, how they might accumulate and how they might operate together in a protective manner is a key research goal. Understanding the potential of social capital in terms of its definition, conceptualization and measurement is a key component of this task.

Clearly this thesis represents only a starting point for moving the concept from one with potential to one that has explanatory power. A number of issues have arisen during the development of this thesis that still need to be addressed if a secure and robust evidence base for social capital is to be achieved.

The most obvious issue is that of study design. All the studies included in the thesis use cross-sectional survey data. It is well established that such designs are not set up and unable to determine the causal direction of any the relationships found. For example as described in Paper II, young people who participate in sports clubs may already be healthier those not participating.

It is important therefore to understand the contribution that correlation research can make to the process of developing evidence. Health surveys, are helpful in the early stages of developing new concepts to test, revise and retest new indicators that can be used in other studies (e.g. longitudinal studies) more capable of dealing with issues of causation. They can also help to generate more specific hypotheses to test a range of possible pathways to health.

The next issue to consider is that of measurement. Kawachi (2010) claims, that the common weakness across all existing social capital studies relates to the heterogeneity of approaches to measurement. These range from the use of remote proxies (obtained from secondary data sources) through to over complex use of composite indices which mask the distinct underlying aspects of the concept (Crosby et al, 2006). This thesis has made use of composite indicators and therefore may be guilty of the latter, although in them main any combining of items tended to focus on a singular concept.. There has also been some variation in the measurement of key indicators over time.

This thesis also set out to unravel the concept of social capital to better understand processes involved in producing it. This process is not complete. For example, 'family sense of belonging' attempts to assess levels of integration within the family in terms of the amount of activities that they do together. However it does not allow us to distinguish how this sense of belonging might differ according to different family compositions. The unraveling process needs to continue until the lowest common conceptual denominator of social capital has been reached.

Finally, ideally investment in studies with a longitudinal design would equip us to understand some of the antecedents and consequences (benefits or outcomes) of social capital and there are already some examples. Duke's study (2009) provided evidence of how secure family connections during childhood can lead to more willingness to participate in more formal networks in adulthood.

Overall, given the costs associated with longitudinal studies, it may be that the quest to further social capital's underpinnings requires creative and innovative approaches to combining knowledge from different sources. At the very least, more use of mixed method approaches should be made to highlight actions that could be put into practice. For example, associational evidence gained from surveys (replicated in different contexts) combined with qualitative data (to understand meaning) and action research to the processes of change, might be all we need to demonstrate how to apply social capital to real life situations.

6.5 ISSUES OF DEFINITION, MEASUREMENT AND THEORY

The original idea for this thesis was that was that social capital could be a resource for young people's health and wellbeing. It was recognised however that achieving this would involve overcoming some of the conceptual, definitional and measurement issues seen in the adult literature.

Definitions

The issue of definition is the most easily dealt with. Whilst Putnam's collective definition of social capital provided the impetus for study, the development of indicators (discussed below) took a broad and inclusive approach to defining the concept. In part this was influenced by Morrow's early work who suggested that Putnam's version of social capital was not broad enough to incorporate the wide range of factors that impinge on young people's wellbeing. She recognised that Bourdieu's concept of sociability (the ability and disposition to sustain and use networks) provides essential thinking on how to create the skills and competences of young people to create networks, move into them and to utilize them. The broad approach to definition was also confirmed by Ottebjjer's (2005) exposition of the three theorists' work.

Measurement and Theory

Overall, the inclusive approach to measurement and the range of indicators developed at least started the process of highlighting some of the potential predetermining factors associated with social capital and the events which may occur as a consequence it. The span of indicators used in Papers I-IV reflected in a rudimentary way at least, a before (sense of belonging), during (autonomy and control) and after (social networking) taxonomy that might be helpful in further articulating young people's pathways to health.

The domain of sense of belonging attempted to tie into both Putnam and Coleman's definitions. Putnam's notion of social capital was much more difficult to interpret for use with young people as by definition they are generally excluded from 'civic life' (Morrow, 2001). Nonetheless early piloting working in HBSC (Currie et al, 2002) demonstrated that this indicator was a valid measure to use in youth work. In the 2002 English survey, an additional neighbourhood measure was included to try and capture the spirit of youth voices in the community setting. This did not feature as a mainstream predictor of health, although this might be a function of young people's comparative exclusion rather than the potential for proper involvement to bring about health benefit.

At the family level 'sense of belonging' reflects Coleman's early definitions of social capital recognising the social and interpersonal aspects of family life. The idea is that when young people feel they belong (and that inevitably for young people includes school and possibly neighbourhood) they are more likely to make friends and interact with peers (Schaefer-McDaniel, 2004). In essence, it may influence their ability to develop and make use of social networks. Potentially although not included here Coleman's definition can provide the bridge between family and school, and family and community as it recognises that the cognitive and social development of children and young people relies on the resources inherent in family relations and community social organisations. Pong et al (2005) in their study of immigrant adolescent's school achievement emphasised the need for appropriate parenting styles that encourage joint decision making which can improve the social functioning of young people both within and outside the home. This links to the next broad indicator of social capital used in Papers I, III and IV – autonomy and control.

Initially, this indicator was included in the thesis to embrace the well rehearsed notion of young people as active social agents. Recognising them as such may create both their ability and willingness to actively engage in a range of health enhancing networks partly modelled by their parent's participation but also defined by them. Indicators of autonomy and control were developed for each of the settings family, school and neighbourhood assuming that the more opportunities that young people had to feel valued and involved the more beneficial to their health.

Whether there is cumulative benefit in accruing feelings of power across settings requires further investigation. Nonetheless Paper III did provide some indication that families provide the first opportunity for young people to feel that they have a voice in their socialisation process and this offers some protection for their wellbeing. This domain also overcame the criticism highlighted by Ottebjer (2005), that aspects of power were missing from all three of the main social capital theorists. Since then of course, the idea of 'linking' social capital emerged as a way of improving connections and equal relationships between those with differing levels of power or social status. Most notably this has been used in community based projects that use it as a means of overcoming some of the political barriers to shared decision making amongst local communities and policy makers (Rutten et al. 2009).

The idea with respect to young people, is that the more opportunities they have earlier on in life, to be involved in shared decision making, the more empowered they feel to actively seek networks that they can participate in and actively contribute to, for their own and others benefit. It should be noted here that the emphasis is on shared decision making which necessarily entails some boundary setting and role modelling from adults. This then provides the bridge between the individual and the community and satisfies Putnam's social capital goal which encourages the *'features of social life, networks, norms, and trust'*, to *'enable participants to act together more effectively to pursue shared objectives'*. The third social capital domain included in this thesis aimed to explore those networks and organisations that were important to young people and how they might act as health enhancers.

The 'social networking' indicator captured the amount and type of clubs and organisations that young people's health benefited from. Paper II suggests that the findings concur with Bourdieu's notion of social capital that participation in diverse networks is dominated by the 'elite' (in this instance those in high FAS) who are more able to make the most of a broad range of loose ties. This requires further attention to ensure that all young people have the opportunity to be involved in networks and be able to gain health benefit from them. The HBSC study was not able to tap into the idea of 'sociability', and important feature of Bourdieu's social capital. This might provide the missing ingredient to give greater access to all young people to develop the weaker ties associated with better health.

Interestingly, there was relatively low levels of participation in the types of clubs that might be most associated with collective social capital (political organisations and voluntary groups). Is this because they are not given the opportunity to be involved and that they are not relevant to them?

In sum, the indicators derived for the purposes of this thesis have been useful in defining some initial sub constructs of social capital that furthers our understanding of its potential as a health concept for young people. The thesis provides evidence to suggest that these sub domains are beneficial to a range of health outcomes in their own right. Further analytical work is needed (using HBSC) to understand the inter-relationships between them to progress our ideas about possible pathways involved to health both in terms of young people's ability to participate and make use of social networks but also how the activities of social networks lead to health benefit.

Szreter and Woolcock (2004) argued that if social capital is to be properly understood, the reason we are interested in it needs to be made explicit. I have argued previously (Morgan, 2010) that the health asset approach provides an additional perspective that provides the rationale for applying the concept to young people's health.

The idea brings a number of well established ways of working with young people to the fore. The first has already been discussed at length – that is the proper and meaningful involvement of young people may secure them as more active citizens and if the evidence is upheld better health. The second is that during the intense period of adolescence, young people need continued support to help them develop the skills they need to embrace life in a positive way. We already know much about how to do this through the work of research on positive youth development, which highlight a whole range of development assets that need to be accrued during adolescence if they are to gain the skills and confidence to thrive even when faced with difficult situations (see Search Institute website for an initial list).

So how does the asset approach link to social capital and its ongoing development. Firstly, social capital can be identified as a health asset its origins lie in the possibility for it to be a resource for societies (individuals and communities). Secondly as described in section 2, it offers a wider set of indicators that maybe relevant for thinking about how health can be created. It overcomes Baum's (2010) concern that considering social capital's utility alone without situating it in a broader set of social theories is meaningless.

Paper IV provided some evidence to suggest that it is important to investigate social capital in the context of other factors known to be precursors of good health. The inclusion of an additional health asset 'perceived academic achievement, inferred a young person's sense of mastery or self esteem was a strong predictor of non smoking behaviour amongst those who had best friends who smoked. The relationship between this 'internal asset' and the indicators of social capital need to be explored but it could be that it provides an intermediary outcome on the road to health.

The asset model more specifically includes Antonovsky's (1979, 87) salutogenic approach to embrace the collective contribution of a range of health concepts (Bronfenbrenner, 1979, Bourdieu, 1993; Blum et al., 2002) capable of identifying resources for health. Core to the salutogenic way of thinking is the theory of 'sense of coherence (SOC)'. Antonovsky describes this as a global orientation to view the world

and the individual environment as comprehensible, manageable and meaningful, claiming that the way a person views life has a positive influence on their health. The SOC is a resource that enables people to manage tension, to reflect on their external and internal resources, to identify and mobilize them, to promote effective coping by finding solutions, and resolve tension in a health promoting manner (Lindstrom and Eriksson, 2006)

Understanding the connections between social capital and salutogenesis were beyond the scope of this thesis. However pursuing such a research agenda necessarily entails having a more precise definition, set of theoretical underpinnings and measurement of social capital and I hope that is where I have made a contribution.

So finally where do we end up with our thinking on social capital as it relates to young people? Are we individuals or a collective?

Rostila's (2011) description of the differences between individualistic and collective notion is helpful here. According to him individual social resources '*signify capital that an individual can acquire through their social relationships across geographical boundaries whereas, collective social capital signifies non-exclusive resources within a social structures that are formed through coordinated action by people in a social structure*'

Of course the answer has to be both!

The idea of weak ties might suggest that Bourdieu's definition of social capital is more suitable to young people than the more collective orientations suggested by other authors. Certainly, Bourdieu's definition of these weak ties is helpful as it identifies the importance of not only be able to accumulate them but also the need to understand how to utilise the resources from them. However, central, to Bourdieu's theory is the role social capital plays in the process of preserving and reproducing class structures within society, especially through mediating economic capital. This is less helpful given that social capital in the context of this thesis has been set within the context of the need to reduce health and social inequalities.

This brings us back to purpose. As long as weak ties are not developed to the detriment of others then they might (when aligned with the idea of bridging social capital) help to enhance individual social skills and competences that enables community integration across different groups (Berkman, 2000; Kawachi, 2000; Swann

and Morgan, 2002). Bridging social capital (as with bonding social capital) can be beneficial to health but only if there is a predetermined reason for putting them to use and there a set of societal values behind them.

This brings us back to the notion of community. Despite many attempts to bring back the spirit of community in many national strategies for health, the predominant drive in modern western societies is capitalism which drives individuals to use their connections to look after their selves. In contrast to the socialist perspective which tries to ensure that people from birth onwards, are integrated into strong cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty. Of course there are pros and cons of both situations, but do they need to be in conflict?

Halpern (2005) suggests that policies supportive of social capital should contribute to creating '*a contemporary shared 'moral' discourse*' and develop processes that facilitate mutual respect. These initiatives would aim at creating "pro-social" behaviour. Explicit suggestions include the development of forums appropriate to the 21st century for deliberating and agreeing common moral and behavioural habits (perhaps through deliberative polling or conventional citizenship education).

Given the recent riots and social unrest in the UK, politicians might be in a hurry to review this idea. However enforced community spirit will inevitably fail if the right, views and perspectives of young people are not embraced. Weller (2006) provides a good example of how young people can actively contribute to shaping their communities as long as adults (parents, professionals, policy makers) recognise that all civic engagement does not have to take place in town halls. In this example, young people (in the main boys) campaigned for, developed and managed their own skate boarding facilities through networks of consultation, solidarity and social capital between friends, family and those with links to decision making bodies. Further development of the autonomy and control indicators will help us understand this further.

Ideally at a societal level we can strive for a better balance between persevering the rights and liberties of individuals to pursue their own life and goals and the need to foster the values that provides individuals with a sense of duty and obligation to contribute to community both within and outside of geographical boundaries.

Failing that, it might be that securing a 'sense of coherence' in young people through the accumulation of a range of health assets, that enables them to successfully manage and make sense of the world they live in becomes a useful goal.

7 CONCLUSIONS

This thesis provide *some evidence* of the links between social capital and young people's health independent of other demographic and socio-economic variables and other known influences. The *strength of association varies* across the range of outcomes and indicators studied. There is also evidence that the three social capital domains chosen for study, sense of belonging, autonomy and control, and social networking are important in their own right and can act separately as health promoting factors and even protect against some risk taking behaviours.

The family remains an important setting for securing a young persons' potential for health even at age 15, and providing young people with opportunities to share decision making processes can have beneficial effects. Although the optimal characteristics of family dynamics needs to take account of different socio-political and cultural contexts. The school and neighbourhood environments are also important for providing opportunities for young people to gain the positive effects of social capital and more work needs to be done to explore how these important contexts can work together to maximise the possibilities for health.

There is consistent evidence that social networking activities via a range of clubs and organisations are beneficial for health, wellbeing and related outcomes. However the key features of what makes these clubs health enhancing needs to be further articulated, as there are instances when participation can be health damaging.

The perspectives of Bourdieu, Coleman, and Putnam have been helpful in defining social capital as it relates to young people and facilitating its measurement. Rather than placing them in opposition, a more inclusive approach allows us to embrace the idea that young people's health experience is influenced by a range of environments and their interactions. Advancing the theoretical aspects of social capital may be more easily achieved if we make more explicit our intentions and goals for young people. The relative benefits of individualistic versus collective approaches to social capital can be assessed against this desired endpoint. It might be that in some scenarios they can co-exist together.

It is clear that social capital can make a contribution to promoting and protecting the health of young people and as such can be seen as a key health asset.

8 IMPLICATIONS FOR RESEARCH AND PRACTICE

8.1 SPECIFIC RESEARCH RECOMMENDATIONS

There are number of research areas which could be pursued to advance social capital research on young people.

Firstly, a systematic review of the literature to synthesis what we already known about the most relevant definitions, measurements and theoretical perspectives that can used to generate future hypothesis of how to make social capital work for young people. This would by necessity take a mixed method approach to the task.

Secondly, the universality of the findings in this thesis could be tested by others using the same framework but in different country and cultural contexts and in different population groups.

Thirdly, qualitative research is needed to understand the types of clubs and organisations that would encourage young people to participate in social and civic life. This research would also explore the characteristics of clubs that make them health enhancing.

Fourthly more research exploring the inter-relationships between the different domains of social capital might illuminate possible pathways to health that could be tested longitudinally or in action (intervention) research programmes.

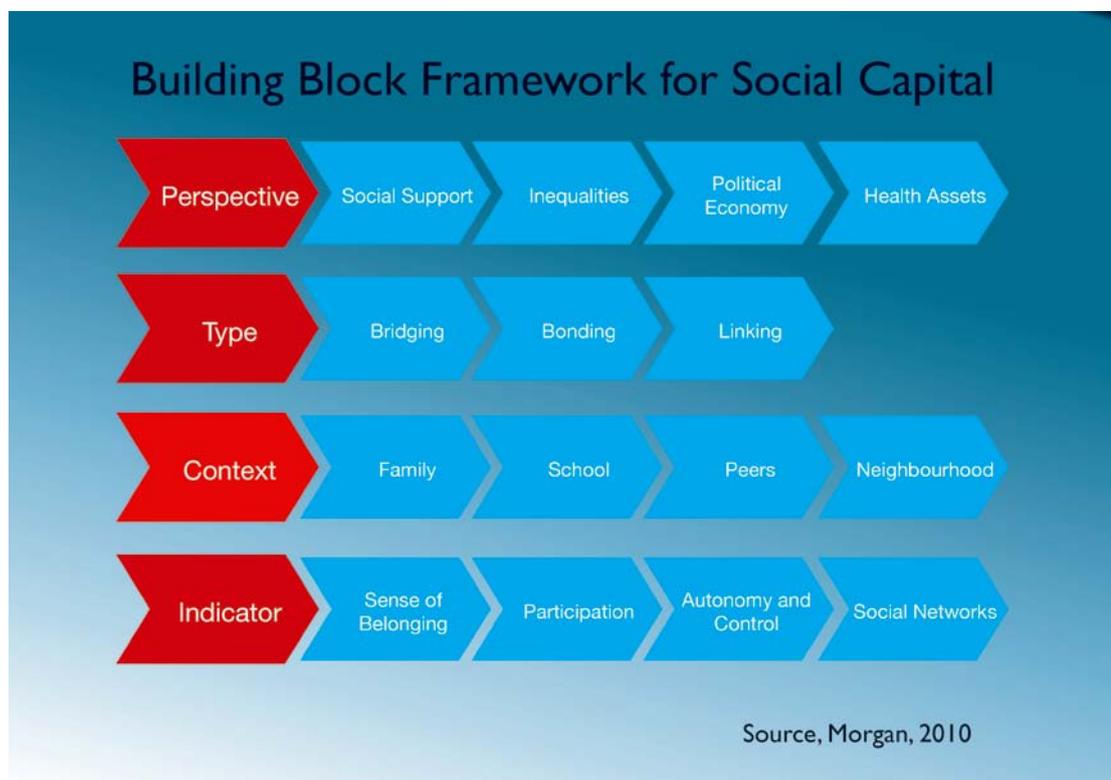
Finally Papers III and IV planted the seed for thinking about broader asset based approaches to young people's health and wellbeing. Further research is needed to identify key assets for health, whether some are more mportant than others and whether there is benefit in accumulating them. Some countries in HBSC have now included a 'sense of coherence' scale in their questionnaire. Establishing the relationship between social capital and sense of coherence as an intermediary outcome along the pathway to health would be supportive of the overall goal of the asset approach.

8.2 A BUILDING BLOCK FRAMEWORK FOR SOCIAL CAPITAL RESEARCH

Preliminary research as always when exploring the potential of new health concepts, is helpful in identifying some of the basic questions about their usefulness. In the case of social capital those questions included: how should it be defined, what are the best ways of measuring it; and what is its relative importance compared to other influences on health. This thesis has contributed to answering those questions with regard to young people.

The evidence base as to why policy makers and practitioners should invest it, needs now to be built more coherently, so that as research accumulates better synthesis of it is possible. Figure 3 shows an outline for a building block framework that can help us in this task. Further details can be found in Morgan (2010).

Figure 3 Building block framework.



8.3 IMPLICATIONS FOR PRACTICE

In general there is a trend in international and national policy making (CSDH, 2008, Allen, 2011) to place a disproportionate emphasis on targeting resources at the under 5's as a means of securing the health of future generations. Reviews indicate that interventions during the first years of life are likely to be most cost effective, but that important changes do take place in later childhood and that investment in early years will not be fully effective unless it is followed up in the school years and particularly with high quality and more intensive interventions for those who need them most (Field 2010, Weare 2011).

It is therefore worth reiterating here the argument put forward by the recent UNICEF (2011) report that adolescence represents a time of opportunity; both for youth development and to create actions that enable positive health and well-being to be sustained into adulthood. This fits with asset based approaches that suggest that more we provide young people with opportunities to experience and accumulate the positive effects of protective factors (health assets), the more likely they are to achieve and sustain health and wellbeing during childhood and through their adult lives.

So how can the findings in this thesis help? Whilst clearly not definitive they point to the need for families to find opportunities to engage in a diverse range of activities with children that may provide them with the skills and competences necessary to be able to participate in and gain access to a wide set of health promoting networks outside the home (Stewart-Brown and Shaw, 2004).

Whilst not a direct finding from the thesis it might be that these bonding characteristics are enhanced when young people are given the opportunity to be part of decision making processes in the home particularly with regards to their own time. Again those young people who have opportunities to have their say might be more confident and more likely to feel they can contribute to decision making outside the home.

Parent programmes that recognise that the types of skills that may have protected and nurtured their child in earlier years may no longer be appropriate to guide their adolescent child through the transition to adulthood. Skills that demonstrate the benefit to parents of investing in high quality communication with their adolescent children can contribute to their overall health and wellbeing (Bornstein, 2003), particularly when this involves shared decision making.

The findings also support the growing recognition that schools have a role to play beyond promoting higher academic achievement, including promoting students' health and well-being (Jourdan et al, 2008). A positive school climate can be addressed both at the classroom and school levels. Developing partnerships between young people and staff to formulate, implement and evaluate organisation-wide approaches to promote health and wellbeing might change teacher / student dynamics to be health enhancing.

Finally paper II supports the notion that encouraging participation in a range of associations is a useful and beneficial policy goal especially for young people, increasing their facility to access and become part of wide ranging networks outside the home and school. This encouragement needs to be fostered by listening to the voices of young people, to ensure that participation is not seen as an oppressive request and the types of clubs that are made available have been driven in part at least by their own ideas and requests.

Many such policies already exist of course, but the implementation of them can so easily fail without proper attention to what makes them work in practice. This thesis has shown that social capital is not a 'one size fits all' idea and that what works in one context might fail in another. The Asset Model (Morgan and Ziglio (2007) aims to support the action and evaluation phase of asset based programmes by providing the tools and techniques that can help professionals work more effectively with those they are trying to serve. Further details of the model can be found in Ziglio et al, 2011.

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The road has been a long one. I don't want you to imagine that I have been sitting at my desk writing since early 2003 as I haven't. PhD studies need and deserve time and dedication, and trying to complete one with a full time job, has been very difficult. That said the work that I have been involved with over the last decade in my 'day job' has been very helpful in helping to formulate my ideas for my studies.

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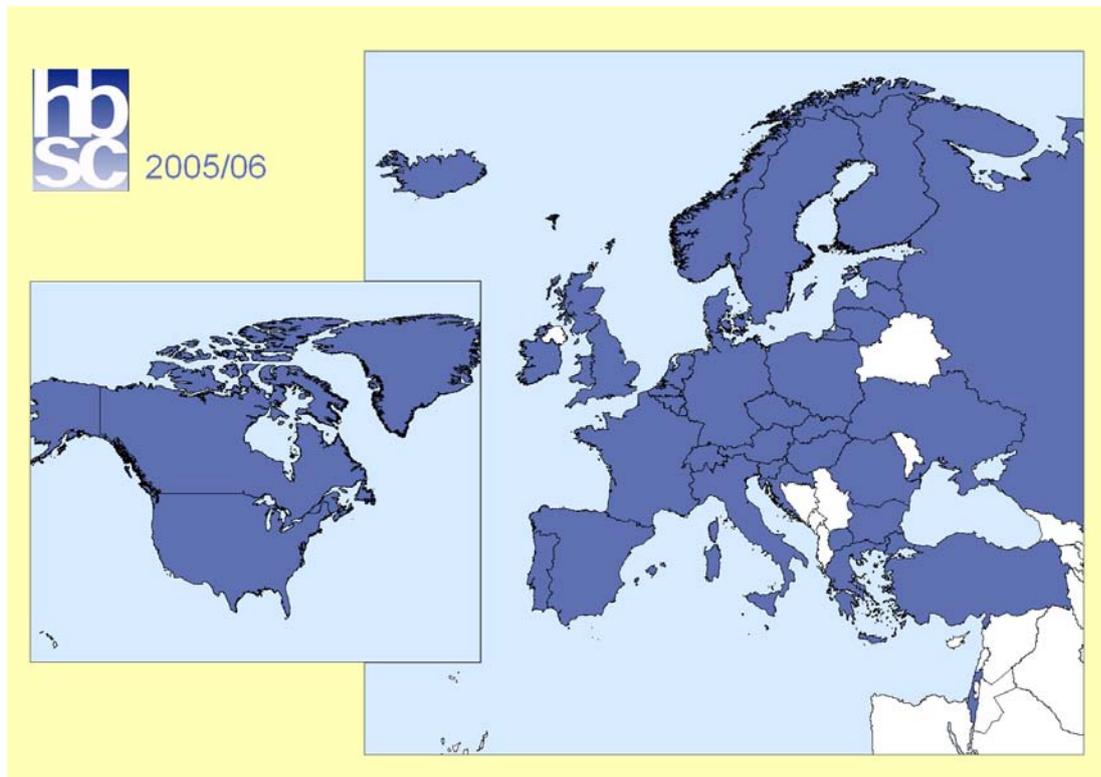
11 APPENDICES

11.1 APPENDIX 1: THE HBSC NETWORK

11.1.1 Introduction to HBSC

The WHO HBSC is a unique cross-national research study of the health behaviours and health of adolescents across a large number of countries. It is a European and North American research study, conducted in collaboration with European Region of the WHO. HBSC was initiated in 1982, by researchers from three countries Finland, Norway and England. Shortly after, the project was adopted by WHO-Euro as a collaborative study. Following the first survey in 1983/84, which was carried out in the founder countries and Austria, surveys have been conducted at four year intervals since 1985/86 in a growing number of member countries. Figure 4 shows participating countries for 2006. The map for 2010 is not yet available.

Figure 4: HBSC Participating Countries 2006



The HBSC survey instrument is an international standard questionnaire used by all participating countries. The data collected in each country is compiled into an international data file according to the protocol for each survey wave.

The international standard questionnaire enables the collection of common data across all participating countries and thus enables the quantification of patterns of key health behaviours, health indicators and contextual variables. These data allow cross-national comparisons to be made and, with successive surveys, trend data is gathered and may be examined at both the national and cross-national level.

As the number of countries has grown, so has the need to secure the methodological quality of the international study viable and robust. Roberts et al (2009) have recently summarized the in depth procedures that are involved in making the international dataset a valid and robust research instrument. In doing so, they outline some of the current challenges involved in maintaining it as a viable and reliable source of information on adolescent health.

As well as being a research and monitoring study, HBSC also aims to inform and have impact on health promotion and health education policy, programmes and practice aimed at young people at both national and international levels. As well as the regular international reports it publishes, the network has worked with WHO to develop the WHO/HBSC Forum series have brought a range of national and international policy makers researchers and practitioners together to translate HBSC into effective action. So far 3 Forums have been held: on physical activity and healthy eating; mental wellbeing; and unintentional injuries the common thread being the social determinants of health. Further details of these forums can be found in Koller et al., 2009.

11.1.2 Member countries and joining HBSC

Forty one countries took part in the 2010 survey. As one of the primary aims of the study is to produce data of the highest possible quality, membership of HBSC is strictly dependent upon adherence to the International Research Protocol (see www.hbsc.org for further details) for each survey. New countries join the study as associate members and attain full membership status once they have successfully completed a survey and their data has been accepted for inclusion in the international data file. The ultimate sanction for non-compliance with the International Protocol is loss of membership and this has been utilised by the Assembly (Network members) on occasion.

The rapid expansion of the study during the 1990s necessitated a formalisation of the process for joining the study and the procedures for applying are outlined in detail in the Terms of Reference (www.hbsc.org). In short, applicant Principal Investigators (PIs) and their teams are required to demonstrate the following:

- Experience in survey research and expertise in social, behavioural and health sciences
- Facilities and resources, including personnel, to carry out the HBSC survey and data analysis.
- Commitment to conducting at least two consecutive surveys and contributing to the development of the study
- Adequate funding to cover all national research costs and attendance of biannual meetings

In addition to ensuring that the necessary requirements are in place to produce high quality data, HBSC has aimed to create and maintain a dynamic international network in the field of adolescent health. This network is one in which members are expected to contribute to and gain from the increasing wealth of expertise within the international group and the opportunities that it offers for collaboration and the sharing of knowledge.

11.1.3 HBSC organisational structure

The study is essentially a network of individual researchers based in University departments, research centres or organisations, government or other institutions (the Principal Investigators and their national teams) working in collaboration with WHO. It comprises a number of working groups with specific responsibilities within the network.

In addition to these working groups and WHO representation, there are two roles to which individual members are elected: the International Coordinator (IC) and the Data Bank Manager (DBM). The IC is responsible for the overall coordination of the study and acts as the key link with WHO. The DBM is responsible for the organisation of the international data file, the standards for data inclusion, the codebook and all such related matters.

There are presently over 400 individuals included in the HBSC membership list, comprising Principal Investigators (PIs) and their national teams.

. The main decision-making body is the **Assembly**. The Assembly consists of all national PIs and votes on all major issues relating to the study's scientific, policy and

organisational development. Decisions and elections are taken on a simple majority vote on the basis of one team – one vote. (Voting is restricted to Full member PIs but Associate members attend Assembly meetings and participate in discussions).

The **Coordinating Committee** (CC) is the body that advises and supports the IC in reviewing the management, organisation, activities and progress of the study.

The CC comprises:

- the International Coordinator
- the Data Bank Manager
- a representative from the Scientific Development Group
- a representative from the Policy Development Group
- a representative from each of the 5 country zone groups

Working groups

After the 1998 survey, the HBSC group designed, planned and implemented a major organisational re-structuring with advice from an external consultant. The rapid growth in membership had meant that the existing organisational structure was not effectively representing the views and aspirations of all members. In addition, there was a strong desire within the membership to re-evaluate the process of determining the content of the survey instrument and to develop new approaches for the production of the 2002 International Protocol. A set of Focus Groups (FG) were set up and they are the main driving force behind the development of the 4-yearly protocols

Network members can choose which FG they belong to. The topics covered currently are: Eating and Dieting; Physical Activity; Risk Behaviour; Violence and Injuries; Family Culture; Peer Culture; Positive Health; School; and Social Inequalities.

The FGs have responsibility for all areas of work within their area, from conceptual development and the production of a scientific rationale for the development of new items.

Overseeing the work of the Focus Groups is the **Scientific Development Group** (SDG). Each Focus Group has an elected coordinator (elected by Focus Group members) who represents the FG on the SDG. The SDG is chaired by the International Coordinator and is responsible for reviewing and coordinating the FG Group work, refining the overall conceptual framework and the final production process of protocols.

Each Focus Group also has a representative on the **Policy Development Group** (PDG). This group has the task of devising a policy framework, including a production and dissemination strategy for International Reports and for initiating opportunities to raise the profile of HBSC in policy forums. I have chaired this group since 2000.

Communication within the HBSC network

The membership meets twice a year with a full scientific meeting in the Spring open to all members, and a Focus Group/SDG/PDG working meeting in the Autumn..

11.2 APPENDIX 2: SURVEY PROCEDURES ENGLISH SURVEY 2002

This thesis used data from three HBSC surveys, 2002, 2006 and 2010. Details of the survey procedures and methods for the HBSC survey carried out in England in 2002. Subsequent surveys followed the same basic framework.

11.2.1 The questionnaire

The international standard questionnaire is made up of two components – the core section that remains largely unchanged over time and the special focus modules that changes every four years. Individual member countries can then include additional questions according to national needs. In addition to the core questionnaire, the English questionnaire included the following international modules:

- Social Inequalities
- Family Culture
- School Setting

Nation specific questions included the influence of school on health, involvement in school affairs, involvement in community affairs, family life, use of safety belts/helmets and school breakfast and other food services.

11.2.2 Selection of schools

The sample universe consisted of pupils in the maintained and non-maintained sectors, with the exception of special and hospital schools. The aim of the sampling process was to be able to select an equal number of pupils in each year that the school covered in years 7, 9 and 11. This entailed selecting schools with a probability proportionate to the number of pupils in the year. The sample frame was stratified both explicitly and implicitly in order to ensure a representative sample was drawn.

Schools who had recently taken part in similar surveys were flagged so they were not selected, although they remained in the database so they would contribute toward pupil totals in their strata.

The sample was stratified by the number of years covered by the school (within the years 7, 9 and 11) and within those covering 3 years it was further stratified by the type of school (community, foundation and independent). Within these strata there was implicit stratification by the actual years covered (e.g. within those schools

covering 2 years, those covering years 7 and 9 were grouped together first with those covering years 9 and 11 grouped at the end of the stratum). The list was also ordered by region (North, Midlands, London, South based on LEA) and by size of school.

A sample of 120 schools was selected with two matched samples of schools, as reserve samples. If the school in the first sample refused to participate then the matched school was approached. If they also refused then the second matched sample was approached. If they also refused then no further substitute was approached.

Schools were selected with probability proportionate to size (number of pupils). If a school was selected with less than the necessary number of pupils they were replaced with the closest school in the strata with the required number of pupils.

11.2.3 Recruitment of schools

Following selection of the schools their co-operation was sought. A letter was sent to all head teachers of the initial sample explaining the purpose of the survey and asking if they would be willing to participate. They were then phoned to check they would be willing to participate and to check details such as the number of years covered by the school. Incentives were not offered, but any costs incurred (e.g. photocopying and postage costs) were reimbursed. In addition a copy of the summary report was also offered.

Total response from the sample of schools issued was 36%. This consisted of 38% amongst the first sample, 30% of the first back up sample issued, and 41% of the third back up sample issued. In total 222 schools were issued as sample and 80 schools took part. Eight schools initially agreed and dropped out at a later date. These were replaced from the back up samples. Within the schools that took part, 3 schools out of 73 with a year 9 refused to include their year 9 pupils, and 4 schools out of 69 with a year 11 refused to include their year 11 pupils.

Despite the efforts to avoid selecting schools who were known to have participated in recent surveys, the main reason for refusal was "survey fatigue". Schools felt they had too many demands on their time to set aside the time to participate in this survey. The sampling procedure which selects pupils at random across the year rather than taking a whole class at one time was considered to be disruptive by

some. Other circumstantial reasons were also given such as OFSTED inspections, or forthcoming examinations.

11.2.4 Selection of pupils

The schools which had agreed to participate were visited by a fieldwork supervisor who selected the pupils who were to take part in the survey. Pupils were selected at random from a list of all pupils in the year. Those selected were given a letter explaining the purpose of the survey. A letter was also provided to be sent to parents if the school wished to notify them. Schools were reimbursed for the costs incurred if requested.

11.2.5 Completion of questionnaires

The selected pupils completed the questionnaires under the supervision of an interviewer. The international protocol was followed in their administration. The questionnaire took around one hour to complete.

Details of the number of pupils selected, the number who completed the questionnaire and reasons for non-attendance (where known) were recorded. In total, 6436 questionnaires were returned of which 11 were unusable. The overall response rate of useable questionnaires returned was 76%.

The response was lower among year 11 pupils – this is probably related to the timing of the fieldwork in March-May when this school year would be preparing for their GCSE examinations.

11.3 APPENDIX 3: SUMMARY OF SOCIAL CAPITAL INDICATORS

The optional package on social capital developed as part of the 2002 survey comprised a set of items taken from the previous survey and newly developed items that were subject to piloting in various countries. Existing items were taken from the family, school and peer focus areas either intact or adapted to take account of current knowledge about the definition of social capital.

The indicators of social capital which were existing HBSC items are either based on well established scales from other studies or developed specifically for use in the HBSC study. These cover the indicators relating to the family, school and peer context.

New items were developed to reflect social capital in the neighbourhood. Social networking (the extent of participation in clubs) was successfully piloted in 6 HBSC countries in 2000. Neighbourhood sense of belonging was developed through use of 6 new items. Two items (you can trust people round here; most people would take advantage of you) were modified from Kawachi et al. (1997) in their examination of the association between social trust and mortality in the USA. The remaining four were piloted in 6 HBSC countries.

Further details on how the optional package was developed can be found in Currie, C et al., (2002). Health Behaviour in School Aged Children: Research Protocol for the 2001-2 Study. RUHBC, Edinburgh. Available at: www.hbsc.org

The tables below detail the items used to develop the indicators used in this thesis.

Table 4a: Social capital domain: sense of belonging	
Survey Year and Paper	
	Family
2002 Paper I	How often do you and your family usually do each of these things all together: <i>going for a walk; sit and talk about things together; visiting friends and relatives; go places together</i>
2002 Paper III	How often do you and your family usually do each of these things all together: <i>going for a walk; sit and talk about things together; visiting friends and relatives; go places together; watch TV or video together; play indoor games together; eat a meal together; play sports together</i>
2010 Paper IV	How often do you and your family usually do each of these things all together: <i>going for a walk; sit and talk about things together; visiting friends and relatives; go places together; watch TV or video together; play indoor games together; eat a meal together; play sports together</i>
	School
2002 Paper I	Here are some statements about your school. Please show how much you agree or disagree with the statements: <i>The students in my class enjoy being together; I feel I belong at this school; I feel safe at this school.</i>
2002 Paper III	Here are some statements about your school. Please show how much you agree or disagree with the statements <i>The students in my class enjoy being together; other students accept me as I am; students are kind and helpful.</i>
2010 Paper IV	Here are some statements about your school. Please show how much you agree or disagree with the statements <i>The students in my class enjoy being together; other students accept me as I am; students are kind and helpful.</i>
	Neighbourhood
2002 Paper I	Here are some statements about your school. Please show how much you agree or disagree with them. <i>You can trust people around here; I can ask for help from friends and neighbours; most people around here would try to take advantage of you.</i>
2002 Paper III	Here are some statements about your school. Please show how much you agree or disagree with them. <i>You can trust people around here; I can ask for help from friends and neighbours; most people around here would try to take advantage of you; it is safe for young people to play outside during the day; people stop and talk to one another in the street; there are good places to spend your time during the day.</i>
2010 Paper IV	Here are some statements about your school. Please show how much you agree or disagree with them. <ul style="list-style-type: none"> • <i>You can trust people around here; I can ask for help from friends and neighbours; most people around here would try to take advantage of you;; people stop and talk to one another in the street;</i> • <i>There are good places to spend your time during the day; there are good places to spend your free time (leisure centres; parks; shops.</i> • <i>It is safe for young people to play outside during the day; I feel safe in the area where I live.</i>

Table 4b: Social capital domain; autonomy and control	
Survey Year and Paper	
	Family
2002 Paper I	Respondent asked the following question of mother and father separately: <i>My mother/father tries to control everything I do (always sometimes, never)</i>
2002 Paper III	Respondent asked the following question of mother and father separately: <i>My mother/father tries to control everything I do; lets me do the things I like doing; likes me to make my own decisions; treats me like a baby (always sometimes, never)</i>
	School
2002 Paper I	Here are some statements about your school. Please show how much you agree or disagree with them: in our school the students take part in making the rules; my school provides me with the opportunity to be actively involved in decisions (2 separate indicators)
2002 Paper III	Here are some statements about your school. Please show how much you agree or disagree with them: <i>our teachers treat us fairly; I am encouraged to express my own views in class</i>
2010 Paper IV	Here are some statements about your school. Please show how much you agree or disagree with them: <i>our teachers treat us fairly; I am encouraged to express my own views in class</i>
	Neighbourhood
2002 Paper I	For each of the organisations (parent/teacher organisations; school associations; religious organisations; other community groups e.g. neighbourhood watch); <i>are you ever given the opportunity to make suggestions about the ways in which they are run?</i> Yes/no

Table 4c: Social capital domain: social networking	
Survey Year and Paper	
	School
2002 Paper I	How many days a week are you involved in a school club? Never; Less than once a week; 1-7
	Neighbourhood
2002 Paper I	How many days a week are you involved in the following clubs? Never; Less than once a week; 1 through to 7: youth clubs; swimming athletics/church/choir; drama/dance; cadets/scouts; other clubs or organisations
2006 paper II	Are you involved in any of the following clubs; <i>sports club; voluntary (or charity) group; political organisation; cultural group (music, science, book club); church or religious group; youth club; some other kind of club; I am not involved in any kind of club</i>
2010 Paper IV	Which one of these types of organised activities do you usually do in your leisure time; <i>team sport activities; organised individual physical activity (swimming, cycling, dancing); individual music activities; political organisations; voluntary or charity activities; organised group activities (church, activities, scout)</i>

Table 4d: Social support	
Survey Year and Paper	
	Family
2002 Paper III	<i>My mother/father; helps me as much as I need; understands my problems and worries; makes me feel better when I am upset; almost always; sometimes never</i>
2010 Paper IV	<i>How easy it is for you to talk to your mother/ father /sister/brother about things that really bother you; very easy to very difficult;</i>
	School
2002 Paper III	Here are some statements about your teacher. Please show how much you agree or disagree with them <i>Most of my teachers are friendly; my teachers are interested in me as a person; when I need extra help I can get it;</i>
2010 Paper IV	Here are some statements about your teacher. Please show how much you agree or disagree with them <i>Most of my teachers are friendly; my teachers are interested in me as a person; when I need extra help I can get it;</i>
	Peers
2002 Paper III	<i>How easy it is for you to talk to your friends (same sex friends and opposite sex friends separately) about things that really bother you; very easy to very difficult;</i>
2010 Paper IV	<i>How easy it is for you to talk to your friends (same sex friends and opposite sex friends separately) about things that really bother you; very easy to very difficult</i> <i>How many days a week do you usually spend time with your friends after school; how many evenings per week do you usually spend out with your friends;</i>

11.4 APPENDIX 4: HBSC QUESTIONNAIRE 2002

11.5 APPENDIX 5:PAPERS I-IV