Community Sport Programme Participant Survey

Phase II Report

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EXECUTIVE SUMMARY

This report has been produced by the Sport Industry Research Centre (SIRC) at Sheffield Hallam University on behalf of the Sports Council for Northern Ireland (SCNI). The objective of this research was to conduct a survey of participants on the Community Sport Programme (CSP) which comprised five area based pilot projects and one nationwide disability sport intervention.

The aims of the CSP focused on increasing levels of sustained participation in areas of high social and economic deprivation and among groups traditionally marginalised through the development and delivery of programmes. It was hoped that the CSP would lead to the improved health and well-being of programme participants.

Methodology

The methodology remained similar to that employed in Phase I, with minor changes to specific interventions. A longitudinal survey was designed to monitor the effect of the CSP on participants, with specific reference to physical activity levels, diet, alcohol and tobacco intake, social capital and self-esteem. Phase II used the same three questionnaires, each designed specifically for the requirements of the corresponding target group (primary school children, secondary school children and adults). A synopsis of the CSP in each region and the strategic approach implemented to ensure the most effective surveying is provided in section two of the report.

Results

Initially Phase I results are reiterated. These results were based on 777 responses, with the main finding suggesting that the majority of CSP participants are fitter, healthier and have higher self-esteem than the average populations of Northern Ireland and the UK. The Phase II results are subsequently presented, these are based on 400 'matched pairs' (respondents for whom both Phase I and Phase II data was collected) at two time points approximately six months apart. This enables a 'before and after' analysis of any change that has occurred between Phase I and Phase II. The exceptionally high benchmarks achieved in Phase I, resulted in the Phase II results being slightly lower in most of the key areas. Nonetheless, adults and children monitored in the study engaged in frequent and intensive physical activity, had low BMI values, ate healthily, consumed minimal levels of alcohol and tobacco and had high social capital and self-esteem, more so than the average population of Northern Ireland.

- In Phase I, respondents took part in physical activity on an average of 5.6 days per week. In Phase II, this frequency of participation had decreased to 5.2 days per week, possibly as a consequence of seasonal factors but nonetheless remains very high. Furthermore, the number of hours respondents participated in physical activity decreased marginally from an average of 12.1 hours per week to 11.9 hours per week. Although there has been a slight reduction in both the frequency and intensity of participation in physical activity, both findings remain well above the Chief Medical Officer's recommendations.

- Phase I results revealed relatively high consumption of fruit and vegetables for both adults and children and equated to an average of 4.4 portions per day. The Phase II

findings were similar with the overall average increasing to 4.5 portions per day across the sample. Although the average is slightly below Department of Health recommendations of 5 portions of fruit and vegetables per day, the level of consumption compares very favourably with the UK and NI averages.

- Government guidelines on alcohol consumption recommend that women should not consume more that 14 units per week, and men no more than 21 units. In Northern Ireland, 37% of men and 20% of women exceed the recommended level of alcohol consumption. Phase I reported that only 2% of both male and female survey respondents consumed alcohol at this level, this trend is continued in Phase II.

- Northern Ireland's Health and Lifestyle Survey (2002) identified that 22% of respondents were current smokers. Our research findings indicate that 85% of adults surveyed in Phase II did not smoke compared with 80% in Phase I. This increase in the number of adult non-smokers re-emphasises that the individuals surveyed exhibit characteristics that are well below national averages.

- In terms of social capital the survey of CSP adult participants in Phase I reported that 82% of respondents had some trust for the people in their neighbourhood; this increased to 90% in Phase II. Furthermore, consistent with the Phase I findings a high proportion of adults were active members of clubs and associations in Phase II.

- Self-perceptions held by primary and secondary school respondents were predominantly positive. Consistent with the Phase I findings over 62% of primary school respondents described relationships with their families as very good in Phase II. Adults also had relatively high levels of self-esteem in both Phase I (63% rating between 31 - 40) and Phase II (64% rating between 31 - 40).

The CSP aim is to increase levels of sustained participation in areas of high social and economic deprivation and among groups traditionally marginalised through the development and delivery of programmes. It is widely accepted that people living within areas of higher social deprivation are on average less healthy, less physically active and have lower social capital and self-esteem, than those living in more affluent areas. The research findings contradict this expectation as the people that responded to the survey can justifiably be held up as examples of the potential benefits of sport and physical activity as they are much fitter, healthier, have higher self-esteem and social capital than the average population.

It remains our view that the respondents to the participant surveys on the Community Sport Programme are not necessarily those at whom the programme was directed. In marketing terms what appears to have happened is 'market penetration' (existing customers making more intensive use of existing products) rather than 'market development' (new customers for existing products). This is a common problem with community based interventions.

It is important to remember that this research evaluates the pilot CSP through a snapshot in time, and only incorporates participants who were involved in the pilot CSP during the Phase I survey (April - June 2005). It does not take into account any subsequent developments associated with the wider CSP roll-out. This evaluation should provide the stimulus for a continuous programme of improvement for the CSP and can provide recommendations of how further research can be developed to maximise learning potential and to accurately monitor the participants at whom the programme was originally designed.

1. INTRODUCTION

This report has been produced by the Sport Industry Research Centre (SIRC) at Sheffield Hallam University on behalf of the Sports Council for Northern Ireland (SCNI). The report provides comprehensive analysis of a longitudinal participant survey and physiological testing programme designed to assess the impact of the pilot Community Sport Programme (CSP).

Prior to considering the research findings, it is useful to set the context of this Community Sport Initiative. An understanding of the original programme rationale and specific objectives provides a constructive starting point.

The long term focus of the Community Sport Initiative is on improving health and helping those with long term health problems or a disability to have an improved quality of life. It aims to connect with the broader government outcomes of crime reduction and encouraging active citizenship. Through work conducted over the past 20 years, SCNI has learned that the kind of benefits that can accrue from upholding these values are relatively easy to secure among groups of people with already strong sporting networks - largely the sporting middle classes in Northern Ireland where there are high levels of belief and confidence and a strong capacity to deliver sporting opportunities. The challenge is to secure benefits for people who often lack the same self confidence and capacity and who at the same time, lack the levels of resources of already well established sporting networks. The establishment of the CSP aims to begin addressing these key issues and sets targets for increasing sustained participation and building the structures to support this long term objective.

1.1 Strategic foundation of the CSP

The strategic arguments for the original Community Sports Programme focused on the following areas:

- Increasing physical activity levels in order to confer cardio-protective and other health benefits.

- Reducing the long standing inequalities in participation.

- Contributing directly to four key priorities within the Northern Ireland Executive's 'Programme for Government'. These are 'Growing as a community', 'Working for a healthier people', 'Investing in Education and Skills', and 'Securing a competitive economy'.

- Working towards DCAL's strategic goals of increasing participation in culture, arts and leisure through enhancing access and improving the quality of facilities and services, and of levering resources to maximise positive social and economic impact.

- Supporting the 'Strategy for the Development of Sport in NI 1997-2005' and 'Strategy on Sport for Young People 2002-2011'. The CSP will meet the aims of 'starting well' and 'staying involved' through creating locally available

opportunities and enhancing sports structures, and increasing the network of community sports development officers and community coordinators.

- Contributing to the issue of youth offending and reducing criminalities, as outlined in the 'Creating a Safer Northern Ireland Through Partnership' consultation document.

- Supporting the work of the 'Drug Strategy for NI' and the 'Strategy for reducing alcohol related harm' through the 'Sport and Leisure' sub-groups that have been created to 'promote the use of sport and leisure as a medium to educate people in the prevention of drug and alcohol related harm'.

- Operating consistently with the objectives of the 'New Targeting Social Need' initiatives through its focus on Northern Ireland's most disadvantaged communities, and ensuring the promotion of equality of opportunity.

1.2 The pilot CSP

The original project aim was to initiate community sport development programmes in 40 of Northern Ireland's most disadvantaged communities. These are communities that demonstrate disadvantage on a range of indices including those highlighted in the Nobel Index of Deprivation. Due to a reduction in available funding, a pilot project focusing on six interventions was agreed which could operate within the resources available at the time. It remains the intention to roll out the CSP across 40 communities within Northern Ireland as funding becomes available and currently there are 20 CSPs operating across the country.

The broad outcomes for the programme were unchanged, however revised outputs were set for the pilot CSP to take into account the reduced project scale. The agreed pilot CSP included the appointment of five Community Sports Development Officers, one Disability Development Officer and six Community Co-ordinators. In reality it was not possible to make all the appointments concurrently and the roll out of the CSP was staggered across the six pilot interventions, from October 2003 to July 2004. Table 1.1 highlights wards / areas targeted by the Programme as well host organisations identified to manage each Community Sport project.

Table 1.1: The Pilot CSP

Target Wards/Areas	**Host Organisation**
Ballykeel, Fairgreen, Moat and Dunclug	Ballymena Borough Council
Bawnmore/Longlands, Whitecity, & North Rathcoole	Newtownabbey Local Strategy Partnership
Brandywell, Creggan South, Creggan Central, Beechwood, Westland	Derry City Council
Ballymcarrett, Woodstock, The Mount and Island	East Belfast Partnership Board
Armoy, Ballylough, Bushmills, Dunseverick, Glendun, Kinbane and Knocklayd;	Moyle District Council
Northern Ireland Wide	Disability Sport NI

The specific pilot CSP targets (taken from SCNI's Addendum to the Strategic Business Case, July 2003) include:

- 6% increase in the number of people actively participating in sport and physical activity by 31st March 2006.

- 20 new sports/physical activity sessions to be established catering for people of all ages and abilities in the local communities by 31 March 2006.

- 5% increase in the range of sporting opportunities by 31 March 2006.

- 10% increase in opportunities available to disabled people by 31 March 2006.

- 200 new coaches and sport leaders trained in 15 sports by 31 March 2006.

- 400 coaches and sports leaders trained in child protection and equity issues by 31 March 2006.

- 20 programmes focusing on access for people with disabilities and wider health issues by 31 March 2006.

1.3 Developing 'communities through sport' and 'sport in the communities'

The Community Sport Programme involves developing ‘communities through sport’ and developing ‘sport in the communities’. The pilot CSP aims to develop capacity and build community participation and cohesion, and to establish and support the development of structures to sustain the longer term provision of the CSP across Northern Ireland. The existing traditional networks of sports clubs and structures are failing to connect with people living in disadvantaged areas who wish to participate in a wide range of sports. The CSP involves the development of existing and new sporting structures and opportunities with people experiencing high levels of social need, in an attempt to reduce exclusion, build community cohesion, social capital and increase participation in sport and physical activity.

In terms of the development of ‘sport in communities’, the desired sporting outcomes include:

- The removal of barriers to participation in sport within the community;

- Innovative opportunities to progress and to develop sporting skills and expertise;

- New opportunities to move from recreational participation to competition or excellence;

- Network of skilled leaders and coaches; and

- Established links between school, sports clubs and the wider community.

In addition to developing sport in communities, a key objective is to use sport as a mechanism to achieve broader societal outcomes. The programme will use sport to address social inclusion and promote aspects of personal and community development. The delivery of the pilot Community Sport Programme is taking place at a time when there

is a significant focus in government policy on improving health and well-being, community cohesion and social capital.

In providing a community based programme of sport and physical activities in communities of high social need, the CSP aims to make a significant contribution to the delivery of key strategic policy objectives supporting the health, well being and social development of children, young people and adults most at risk in these communities.

1.4 Fundamental CSP aims

The implicit aims of the Community Sports Programme which are to be evaluated through the pilot programme are:

1. To increase levels of sustained participation in sport and physical activity in areas of high social and economic disadvantage and among those groups traditionally marginalized through the development and delivery of programmes.

2. To improve the health and well-being of programme participants through involvement in sport and physical activity programmes.

3. To develop capacity and build community participation and cohesion through coordinated training programmes and activities.

4. To establish and support the development of structures to sustain the longer term provision of the Community Sport Programme across Northern Ireland.

5. To effectively implement and manage the overall delivery of the Community Sport Programme.

The main research methods utilised to evaluate the pilot CSP will be a longitudinal participant survey and a programme of physiological testing. The initial 'Phase I' survey commenced in April 2005 and the complementary programme of physiological testing was scheduled in May 2005. The 'Phase II re-test' commenced in November 2005 and the repeat programme of physiological testing was undertaken in December 2005. Due to various data collection difficulties (as outlined in section 2) both participant surveys took several months to complete.

It is acknowledged that the aim to increase levels of sustained participation in areas of high social and economic deprivation and among groups traditionally marginalised through the development and delivery of programmes is challenging. It is widely accepted that people living within areas of higher social deprivation have lower levels of participation in sport and physical activity, and are on average less healthy, less physically active and have lower social capital and self-esteem, than those living in more affluent areas.

It can therefore be expected that people living within areas of high social and economic deprivation will have low levels of physical activity, low levels of self perception in terms of activity, health and self esteem, unhealthy lifestyles in terms of smoking, alcohol and fruit / vegetable consumption, and low levels of social involvement in local communities. From this theoretical basis, the research hypothesis to check these assumptions (through

the Phase I survey) and to evaluate the impact of the CSP on participants (through the Phase II survey) was formulated.

1.5 Terms of reference

The terms of reference for this research outlining the specific requirements are detailed below:

- To pilot test the participant survey developed as part of the Community Sport Programme monitoring and evaluation framework;
- To conduct a sample survey of participants using the agreed survey format;
- To obtain Body Mass Index (BMI) data and conduct an appropriate fitness test for the sample population;
- To collate and analyse survey data and provide an electronic file containing all data to the Sports Council for Northern Ireland.

1.6 Structure of the report

This report provides comparative survey analysis of longitudinal research carried out to assess the pilot Community Sport Programme.

Following this introduction, section two looks at the methodology which details the means by which the data was collected for both Phase I and Phase II, and which also appraises the strengths and weaknesses of the different approaches used. The methodology will also highlight any caveats that the research is constrained by.

Phase I findings are reported in section three. The rationale behind this evaluation consists of measuring intended change. This change must be attributed to the action of the interventions and for this reason the Phase I survey is vital to establishing a baseline against which any change can be measured by the Phase II survey.

Subsequently, section four identifies Phase II results and in order to illustrate the change from Phase I to Phase II three sets of results are presented on each graph. First, the results of the Phase I survey are presented to provide an appropriate base line. Second, the Phase I results for the 400 respondents that completed both the Phase I and Phase II surveys are isolated and analysed. This enables a 'before' and 'after' measurement of the same 400 respondents. Third, the Phase II results based on the sample of the same 400 respondents will illustrate any effects of the intervention.

Section five focuses on the physiological testing; this section takes a similar format to that of section five and enables measurement 'before' and 'after' exposure to the CSP intervention. Finally, section six concludes the report bringing together the results from Phase I and Phase II.

2. METHODOLOGY

2.1 The research design

The research design takes a longitudinal approach focusing on the '*theory of change'* model. This method facilitates the description of subject's change over time and explains these changes in terms of other characteristics. The 'theory of change' refers to the causal processes through which change comes about as a result of an intervention's strategies and action. The evaluation of the CSP consists of measuring intended change. The word 'intended' is important because change is constantly happening and evaluation must focus on the changes that can actually be attributed to the specific intervention.

The participant survey was distributed pre-intervention and again on a second occasion approximately six months afterwards to measure any behavioural changes that may have occurred within this period. However it is difficult to establish causality (to attribute behavioural changes to the CSP) because of the complex nature of influencing behavioural change and the number of variables that may have an effect on any such change. When conducting social research that cannot be undertaken in 'laboratory' conditions it is not possible to control all the variables to which an individual is exposed or to account for these variables in an explanatory model.

The use of a control group can help to overcome some of the issues surrounding attributing causality, however this measure was not deemed practical or ethical in this case as it would have denied some residents the opportunity of participating in the CSP.

2.2 The research process

2.2.1 Questionnaire design / critique

The survey questionnaires were originally designed collaboratively by SCNI and consultants working on their behalf, and were subsequently sent to SIRC for peer review and validation. The questionnaires were originally of a format that combined administering the surveys and self completion. The initial intention was for this to be undertaken in 15 minute (young people) or 30 minute (adult) one-to-one meetings between the researcher and the participant. Due to the time intensive nature of this method and the associated difficulties in administering the questionnaires, an alternative approach utilising self completion in captive group situations was favoured, with the option of boosting the sample by postal surveys if necessary.

A comprehensive review of the proposed questionnaires incorporating in-house piloting was undertaken by SIRC. For operational purposes it was suggested that several changes were made to the proposed questionnaires. It was important to ensure that all categories were 'discrete' in nature and had continued relevance for the re-test survey (in six months time). The importance of filtering out any implicit assumptions, eliminating 'memory test' questions and ensuring that questions were consistently clear and logical so as not to confuse respondents was discussed. It was also highlighted that for questions to be valid they must include all eventualities. The format of some questions was changed to enhance the value of repeat data collection. A health perception question was added to support the fitness rating and dynamic question. It was suggested that several survey questions should be moved to the participant registration form.

A key consideration regarding the survey instrument was agreeing an appropriate and ethical measure of self esteem suitable for both children and adult respondents. After much discussion, including consultation with the University's internal ethics committee and researchers specialising in this field, it was agreed that the traditional Rosenberg scale could be used for measuring the self esteem of adults, with an adapted version of this utilised for children.

The Rosenberg scale provides a 'self esteem score' which can be interpreted as 'high', 'moderate' and 'low'. There are no appropriate validated 'self esteem' questions for young people that are similar to the Rosenberg questions and can be used to compute an overall self esteem 'score'. This is not problematic as the real area of interest lies in the dynamic between the pre and post intervention which can be measured without a numerical comparison. On the children's surveys 'self perception' questions are included which utilise a standard five-point likert scale to evaluate how children feel about their family, school work, body and looks, friendship and self. These 'self perception' questions adhere to the University's internal committee and the Regional Ethics Committee's regulations. The research also builds in the safeguard of parental consent for all children completing the questionnaire.

Three different types of questionnaire were proposed, each one to cater specifically for the requirements of the target groups.

In the case of the young people's survey, the issue of obtaining the permission of a parent or guardian before the questionnaire could be administered / completed was paramount. Solutions that were efficient in terms of both time and administration were agreed. Some primary school age children would be given the questionnaires to take home to complete with their parents. This method simultaneously overcame the twin issues of child protection and literacy. In the case of captive group surveying of primary school children, both permission from the school and informed consent from the respondent's parents was sought in advance. Young people aged 11+ to 16 (secondary school age) were able to complete the questionnaires on the same basis as adults.

2.2.2 Piloting the Survey

The adult questionnaires were piloted amongst project stakeholders at a workshop held in early 2005. Community Sport Development Officers (CSDOs) representing each intervention completed a questionnaire, as did the SIRC research management team and representatives from the Sports Council for Northern Ireland (SCNI).

The Manager of SCNI's CSP initiated a pilot study based on the questionnaire specifically targeted at adults, whilst the Director of SIRC coordinated a pilot study aimed at primary school children within a local Sheffield school.

The aim of these pilot surveys was to test the construct validity of the proposed questionnaire. A range of issues including the method of delivery, parental consent, consistency of meaning, terminology used and ethics, were identified and resolved. The proposal to utilise separate questionnaires for primary school (6–11 years), secondary school (aged 11–16) and adult participants (over 16 years) was confirmed. This was in response to both operational and ethical issues.

These pilot studies successfully served as an objective measure to approve survey content and confirm the operational methodology.

2.2.3 Communicated status of the Community Sport Programmes

The Phase I report is based on analysis of data drawn from 777 completed questionnaires. In April 2005, the CSDOs reported that the current number of known registered CSP participants was 1,448, of which 50% were primary school children. At this time the input of CSP participants onto databases was ongoing, and after consultation with the CSDOs the overall number of people involved in the CSP was estimated to be around 2000.

The number of people involved in each project varied significantly, for example Disability Sport N.I. 150, Newtownabbey 505, Derry 800+. Furthermore the focus of the CSP varied by intervention e.g. Newtownabbey reported primarily running adult programmes, whereas Derry's programmes appeared to be focused mainly at primary school children. Given the considerable variations it was agreed that a 'one size fits all' approach would be unlikely to work and that the research would need to be intervention-specific to have any chance of success.

There was clear variation in the status of databases by region. This ranged from databases not yet being operational (this applied to one area), databases 'in need of attention' (one database had only 12% of participants input), through to databases being 'pretty up to date' (around half of the databases fell into this category and had over 70% of participant details recorded). Throughout this research project the SIRC research team have only had sight of two regional databases, those from Newtownabbey and Moyle.

Despite the initial CSDO reports, the actual number of participants registered onto CSP databases was much lower than the original estimates. It also became apparent that the number of CSP participants engaged in regular and sustained participation through the CSP was below the intended levels. Further problems were created by the incomplete nature of the databases and the duplication of participant's records. The initial Phase I response rate was commendable given the nature of the CSP and the databases at the time of data collection.

The data collection for Phase II was targeted only at the 777 respondents of Phase I due to the comparative nature of this evaluation. Participant attrition is inevitable and is discussed in greater detail in section 2.2.5. Accounting for the unavoidable attrition the response rate of 51% should be regarded as a highly positive outcome.

2.2.4 Intervention specific overview

2.2.4.1 Ballymena

The appointment of a CSDO for Ballymena took place just prior to the scheduled Phase I data collection period. As a result there was no sustained CSP in place and an intervention database was yet to be established. The data collection for Phase I was delayed until July 2005 as a result of the timing of the CSDO appointment.

The CSP participants were surveyed and then entered onto the intervention database retrospectively. The data collection for Phase II was initially conducted via a postal survey

coordinated by SIRC researchers from the database that had been developed after Phase I. This yielded a response rate of just over 35%. A follow-up postal survey to the non-respondents succeeded in increasing the overall response rate to 49%, providing a sample of 69 respondents for the 'matched pairs' analysis.

2.2.4.2 Derry

Derry appears to manage the most sustainable programme of initiatives, with numerous CSP programmes running through local schools, and for the secondary school age children, through local youth groups. This is likely to be a consequence of the genuine community development work undertaken by the CSDO in this area.

The majority of the Phase II data collection was undertaken in primary schools in captive group situations with the CSDO guiding the young people through the survey. There were some data collection issues resulting from the fact that some primary school children, originally interviewed in captive groups, had progressed to different secondary schools.

In Phase I, a total of 295 usable questionnaires was achieved. The Phase II response rate was 62% (182 respondents), this was accomplished despite a lower level of available resources to assist with Phase II data collection.

2.2.4.3 Disability Sport NI

The main point of note is that not every person registered on this CSP was disabled. The number of disabled participants registered on this programme remains unknown.

As a result of the national remit of this programme a postal survey was the only viable method of data collection. There was also provision to follow-up the postal survey with telephone interviews should it have been deemed necessary based on the overall response rate.

The Phase I postal survey yielded a response rate of 50% (75 usable questionnaires), a response rate of 50% was also achieved in Phase II which resulted in 37 respondents for 'matched pairs' analysis.

2.2.4.4 East Belfast

There was a change in CSDO for East Belfast between the Phase I and Phase II research. The Community Coordinator covered the CSDO post on a part-time basis, prior to the permanent appointment of a new full-time CSDO. This change in personnel created additional administrative difficulties. The newly appointed CSDO did not attend any of the initial CSP training courses and was required to engage with the research process mid-way through it.

It was communicated to SIRC during the Phase I data collection that the only way to ascertain responses would be via the CSDO's local knowledge. The original CSDO identified people who had attended more than one activity session and contacted these people directly, either through captive group surveying or hand delivering questionnaires. This created increased difficultly for the Phase II data collection which was carried out by a new CSDO - who did not initially have the same degree of local knowledge as her

predecessor. Of the 98 individuals surveyed in Phase I just 14 of these participants completed the questionnaire in Phase II.

Due to the low response rate, investigation of the operational difficulties encountered was undertaken. The CSDO provided a summary of the data collection outcomes. In total 37 of the primary school children that were surveyed in Phase I had since progressed to secondary school. Questionnaires were sent to their new secondary schools but only two were completed. It was reported by the CSDO that it was not possible to track 16 of the original respondents, although reasons for this operational difficulty were not specified. A further 13 of the original secondary school respondents had left school and no personal contact details were available. Of the original 32 adult respondents, 12 completed a Phase II questionnaire, 11 were recorded as "no longer part of the CSP", two had emigrated and the remaining 7 individuals were recorded by the CSDO as 'non-respondents'.

2.2.4.5. Moyle

The methodology used for the Phase I data collection was a postal survey of all 280 individuals on the database, of these 69 replied. For Phase II an initial postal survey was sent to the 69 respondents of Phase I. This yielded a response rate of 26 (37%). Although this was a reasonable return, the introduction of a new CSDO provided the data collection process with new impetus.

The new CSDO put a great deal of time and effort into instigating a follow-up campaign, which included visiting the local schools in person, delivering and collecting questionnaires from the homes of participants, and conducting a number of telephone interviews (after tracking down participants who had since moved out of the area). This commendable personal commitment to the research succeeded in increasing the matched pair sample size to 78% (54 respondents).

2.2.4.6 Newtownabbey

There was a change in CSDO for Newtownabbey between the Phase I and Phase II research. This change in personnel created additional administrative difficulties.

The Phase I data collection utilised a combination of captive groups (where possible) and postal surveys for the remainder of registered participants. In Phase II, captive group surveying was not possible as no activities involving the original respondents were taking place so all data collection was initiated via postal surveys. The initial response rate to the postal survey was disappointing; therefore a follow up campaign of telephone reminders was instigated by SIRC.

In total 44 completed questionnaires were received from the Newtownabbey CSP area, a matched pair response rate of 44%. Unfortunately the follow-up campaign of telephone reminders had very little impact on the response rate.

2.2.4.7 Key findings

- The staggered appointment of the CSDOs caused operational difficulties during the Phase I survey.

- There was a limited amount of regular and sustained physical activity evident, thereby rendering the proposed plan of captive group surveying redundant.

- The status of intervention databases was inconsistent. Many were incomplete, and many included duplicate entries for individual participants.

- In most interventions postal surveys were the only practical data collection method, due to the piecemeal nature of the CSP.

- There were further data collection issues in Phase II resulting from the fact that some primary school children had progressed to secondary schools and home contact details were unavailable.

- Changes in CSDO posts generated additional difficulties for the data collection and process 'buy in' during Phase II.

2.2.5 Operational considerations

There are a number of key operational considerations surrounding longitudinal research. The main factors in respect of this research design are as follows: establishing an accurate baseline, non-standardised CSPs, ensuring a robust method for tracking subjects, changes to the research team (CSDOs), participant maturation, seasonality and attrition. These require consideration in order to enhance internal validity.

Establishing a 'true' baseline

It is important to establish true baseline data, prior to any exposure to the CSP, in order to measure any changes that may have occurred against this. The baseline should primarily focus on the levels of participation in sport and physical activity in the areas in which the CSP operates, as this is what the CSP seeks to increase.

SCNI undertook this task as part of devising the original monitoring and evaluation framework. Primary data collection was not possible however a general baseline was calculated through re-analysing the Continuous Household Survey (CHS) 2003/04 dataset. This created a new participation variable which was then cross-tabulated with a set of social variables from the CHS dataset to enable examination of the target areas. This baseline can, at best, only give an approximation of the likely participation levels within each area at an aggregate level. It does not follow that all people from deprived areas are uniformly disadvantaged compared with the population as a whole.

It was intended that this baseline data would be available prior to the participation surveys however unfortunately the document was not finalised until December 2005.

Establishing the 'pre-intervention' baseline position for CSP members was problematic due to the staggered roll out of the CSP across the six pilot interventions, the first commencing in October 2003 and the last in July 2004. One way to eliminate this problem would have been to survey only participants newly registering on the CSP, however in practice this would create serious limitations on the achievable sample size and therefore was not feasible.

Non-standardised CSPs

The original research brief specified that the application of the CSP interventions would follow a 'Community Development' model. Concerns regarding whether this would equate to each area's programme being tailored to meet specific local needs were raised at the outset, as this would generate a situation where the data collected for each intervention could not be compared on a 'like-for-like' basis. Assurance that the same process of interventions, insofar as they would be participation and personal development programmes to impact on health improvements and social capital was received. However it was acknowledged that the application of a community development model may result in variance in the management of the CSPs and the type of interventions / programmes on offer to participants.

To account for this possible variation in CSPs by intervention, the questionnaires for Phase II were revised to include two additional questions. First, levels of engagement were measured by asking participants "Do you consider yourself to be a member of the Community Sports Programme?" Second, to measure levels of exposure to the CSP, participants were asked "Over the last six months how many CSP activities have you taken part in?" This additional data will enable the research findings to be put into context by exploring commonality, and will be more meaningful in terms of cause and effect.

Robust method for tracking subjects

The system utilised to track subjects between the test and re-test Phases was through specially designed databases commissioned by SCNI. The CSDOs reported issues regarding contacting some participants who had moved from primary to secondary school within the timeframe of the research. It is assumed that home addresses for these participants were not provided on the intervention databases and hence they were no longer deemed to be on the CSP.

Changes in the research team

Unfortunately two CDSOs (from the East Belfast and Newtownabbey interventions) resigned from their posts between the completion of the Phase I research and the commencement of the Phase II research (re-test) six months later. This created additional administrative difficulties for the newly appointed / interim CSDOs as they had not attended any of the initial CSP training courses and had to engage with the research process mid-way through it.

Attrition

When conducting longitudinal research even if the sample is representative of the population when the research commences, it cannot be guaranteed that it will remain so. Drop-out rates of 40 to 60% have been shown to be "not uncommon" within longitudinal research projects (Bijleveld et al, 1998). Participant attrition is progressive and accumulative. It is necessary to start with a sample large enough to counteract this problem, however even this does not account for the attrition not being random "those who drop-out, who disappear, who refuse to co-operate…usually deviate in a systematic manner on a number of relevant characteristics that usually bear relevance to the topic under investigation" (Bijleveld et al, 1998. Pg 11[1]). This phenomenon cannot be prevented, however diligence, hard work and innovative tracking can be used to minimise the problem.

[1] Bijleveld, C.J.H.C. & van der Kamp, L.J.T. et al. (1998). **Longitudinal data analysis: designs, models and methods.** London: SAGE.

When presenting the research results throughout this report, the findings from the full Phase I sample (n=777) will be displayed, in addition to the matched 'test and re-test' sample (n=400). This will allow the effect of participant attrition to be considered and conclusions on whether this attrition was systematic to be made.

Maturation

Maturation is a further threat to internal validity because the children participating within the study may have physiologically and psychologically matured within the six month period. As an illustration of this, BMI was not used as a key performance indicator, as was originally proposed, because natural changes in BMI as a result of the growth in height of the child were anticipated - irrespective of any increased physical activity as part of the CSP.

Seasonality

There are seasonal factors that will have influenced the research findings. Both Phases of data collection took much longer than originally intended and the survey distribution was delayed (the original timescale for Phase I was January to March). The information to facilitate the Phase II data collection was sent to all CSDOs in October 2005 but the minimum response rate of 50% was not reached until the end of February 2006. As a consequence of such delays, the Phase I data collection was undertaken in late spring / summer and the Phase II data collection was carried out in winter. The delays may have resulted in more pronounced seasonal influences on the data collected. There are a number of factors relating to almost all the variables measured that may be different in the winter to the spring / summer. Examples of these changes include: less outdoor physical activity and walking due to weather conditions and the reduced hours of daylight, a change in dietary patterns (an increase in eating 'comfort' food) possibly resulting in weight gain through the winter months and the weight gain commonly associated with the Christmas period. These factors are also likely to impact upon both self esteem and social capital, as people often go out less in the winter due to the dark and cold conditions.

It is important to consider these factors when analysing and interpreting the research findings to ensure that the results remain in context and that causality is not attributed inappropriately to the research findings.

2.2.6 Survey administration and distribution

Distribution methods were agreed individually with each CSDO to take into account participant types, regional differences and CSDO preferences. The research methods employed by each intervention in Phase II primarily followed the methods utilised for the Phase I data collection. In summary, Derry focused on captive group situations as the main data collection method, whereby all other interventions relied mainly on postal surveys. In an attempt to boost the initial response rate in some interventions an extended range of methodologies was utilised, including telephone reminders, telephone interviews, and the pre-arranged hand delivery / collection of questionnaires.

2.3 Sample Statistics

2.3.1 Phase I survey - nature of the sample

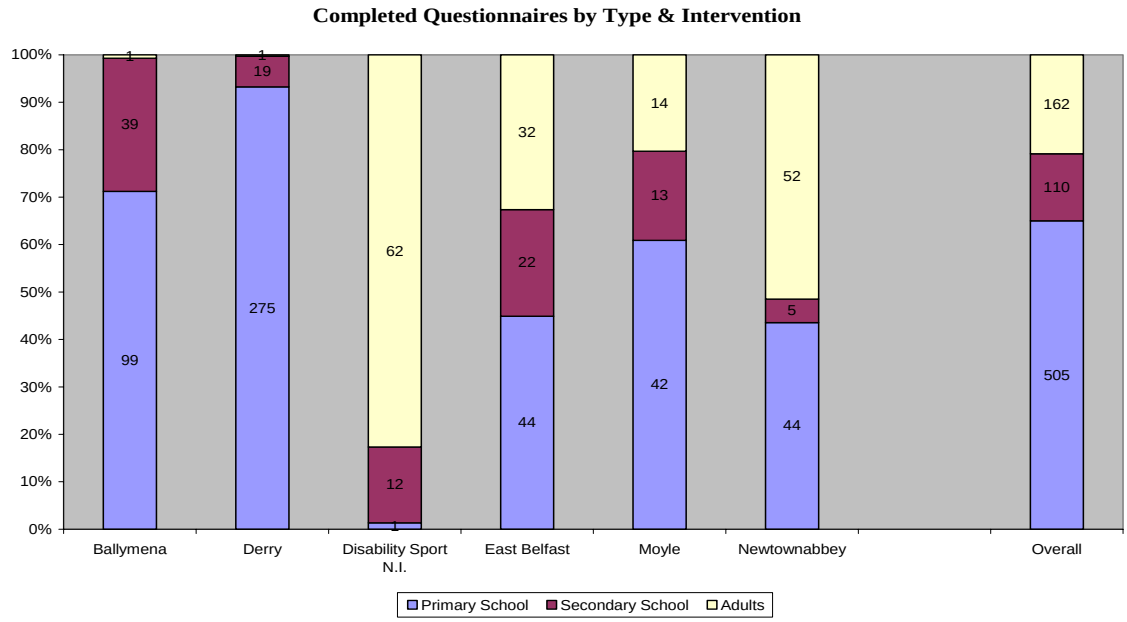
In total 777 completed questionnaires were received. A breakdown of the questionnaires received by intervention is provided below in Table 2.1.

Table 2.1: Completed Questionnaires by Intervention

Intervention	No. of Questionnaires Issued	No. of Completed Questionnaires	% of Overall Survey
Derry	295	295	38%
Ballymena	700	139	18%
Newtownabbey	340	101	13%
East Belfast	300	98	12%
Disability Sport N.I.	150	75	10%
Moyle	288	69	9%
Total	**2073**	**777**	**100%**

It should be noted that captive group surveying was utilised in Derry, rather than postal surveying which was utilised in most areas, this explains the seemingly perfect (100%) response rate. Further breakdown of the questionnaires received by intervention is provided in Graph 2.1, which illustrates that almost two-thirds of the sample were primary school age.

Graph 2.1: Completed Questionnaires



As indicated in the intervention specific overview, the majority of CSP's focused on primary school age children. In total 65% of the questionnaires completed as a part of the Phase I survey represented the responses of primary school children. Questionnaires completed by secondary school children constituted 14% of this survey, with adults making up the remaining 21%.

Interpretation of the survey results was subject to a caveat in terms of the disproportionate representation of primary school children. The difference in the sample sizes between each survey 'group' (primary = 505, secondary = 110, and adult = 162) was significant. Therefore any interpretation of analysis conducted by survey type must take into account the sampling error, for example analysis of secondary school surveys was subject to a much higher sampling error than analysis of primary school survey data. Furthermore combined analysis by survey type and intervention results in small sub-sample sizes and therefore larger sampling error. As such, any sub-group results should be interpreted with

caution. In many cases the actual number of respondents in a sub group was reported to ensure that this analysis is interpreted in context.

2.3.2 Phase II survey - nature of the sample

In total 400 completed questionnaires were received. A breakdown of the questionnaires received by intervention is provided below in Table 2.2.

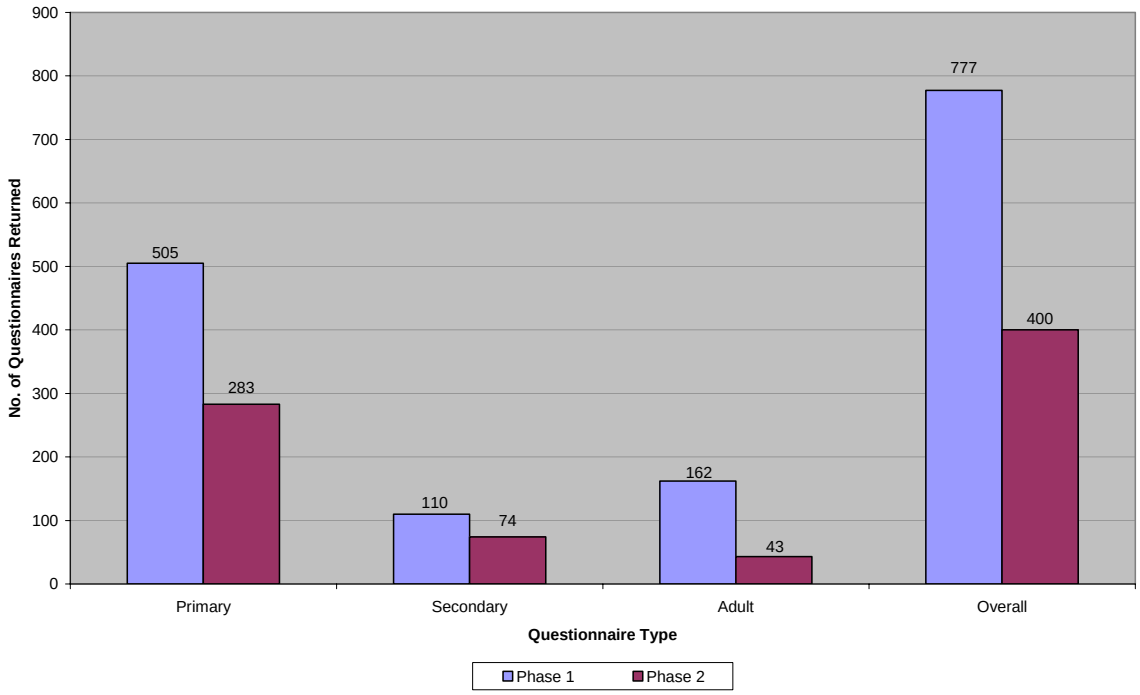
Table 2.2: Completed Questionnaires by Intervention

Intervention	Primary	Secondary	Adult	Phase II Total by Area	Phase I No. of Questionnaires	% Return
Derry	177	0	5	182	295	61.7
Ballymena	51	0	18	69	139	49.6
Moyle	35	10	9	54	69	78.3
Newtownabbey	19	24	1	44	101	43.6
Disability Sport NI	1	28	8	37	75	49.3
East Belfast	0	12	2	14	98	14.3
Total by age group	**283**	**74**	**43**	**400**	**777**	**51.5**

The overall response rates highlight a large disparity between interventions. The response rates vary from 14% in East Belfast to 78% in Moyle. In absolute terms the response rate ranges from 182 questionnaires in Derry to just 14 in East Belfast. Respondents from Derry represent almost half of all respondents (46%) Possible reasons for these varied response rates were indicated within the intervention specific overviews in section 2.2.4.

A breakdown of the questionnaires received by age group is provided in Graph 2.2. This illustrates that over 70% of the respondents were primary school children.

Graph 2.2: Completed Questionnaires



Attrition is a serious concern in longitudinal methodology. In this research, participant 'drop out' is quantified at 48.5%, this is within the anticipated 'common' levels of attrition

of between 40% and 60% (Bijleveld et al, 1998). In absolute terms 377 CSP participants who completed a Phase I questionnaire did not complete a Phase II questionnaire. Therefore there is no comparative data for these 377 individuals.

Participant attrition is usually systematic. Table 2.3 shows that attrition was not consistent across the age groups, varying from 74% of adults, to 44% of primary school children and 33% of secondary school age participants. This illustrates that the highest proportion of 'drop out' was by adult participants. Additional factors indicative of systematic attrition are discussed throughout the Phase II results.

Table 2.3: Participant Attrition

Questionnaire Type	**Phase 1**	**Phase 2**	**% Returned**
Primary	505	283	56.0
Secondary	110	74	67.3
Adult	162	43	26.5
Overall	777	400	51.5

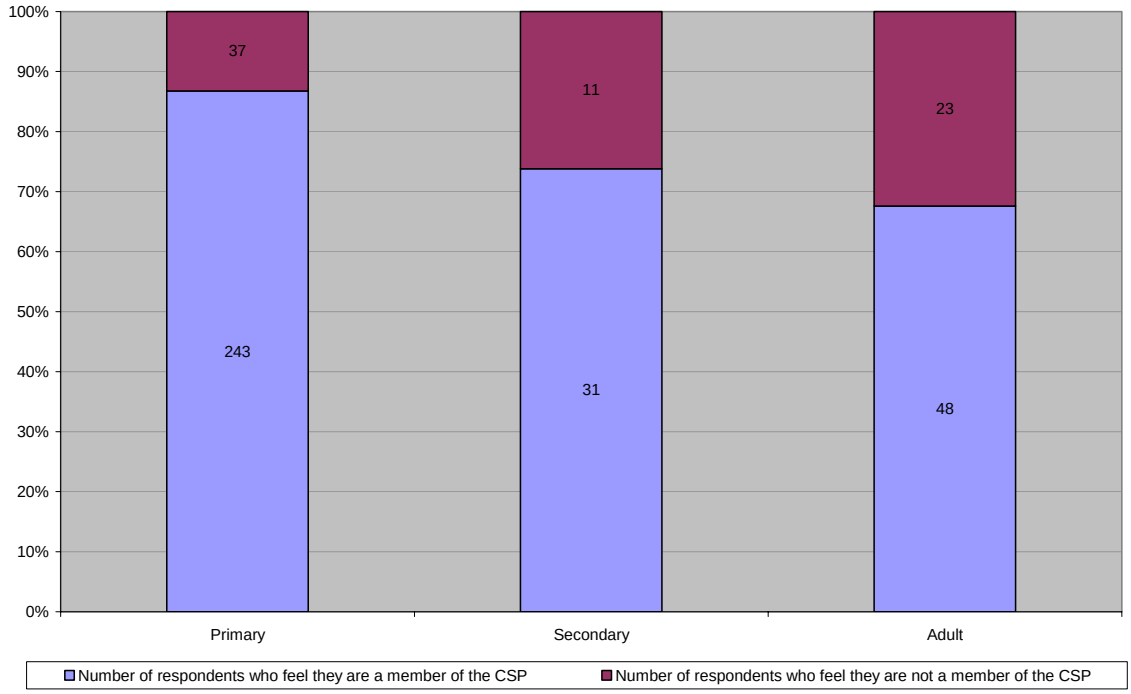
The Phase I research results based on 777 respondents were presented by survey type and also by intervention where possible. Due to the reduced sample size of the Phase II research to 400 respondents and the resultant increased sampling error, it is not worthwhile conducting any further sub-sample analysis by intervention. As a measure of good practice when working with small sample sizes the actual number of respondents in a sub group is reported, in addition to a percentage value, to ensure that this analysis is interpreted appropriately.

2.3.3 Degree of involvement in the CSP

Through the course of this research it has become evident that the degree of involvement that many CSP participants have had in the programme has not conformed to the 'regular' and 'sustained' participation that was originally intended. In order to quantify this degree of involvement, two additional questions were asked during the Phase II research. These questions were: "Do you consider yourself to be a member of the Community Sport Programme" and "Over the last six months how many CSP activities have you taken part in?"

The majority of respondents did consider themselves to be members of the CSP. There was however some degree of variance between the different age groups, with 87% of primary school age respondents considering themselves as members, in comparison to 68% of adult respondents. This finding supports the earlier notion of higher attrition amongst adult participants.

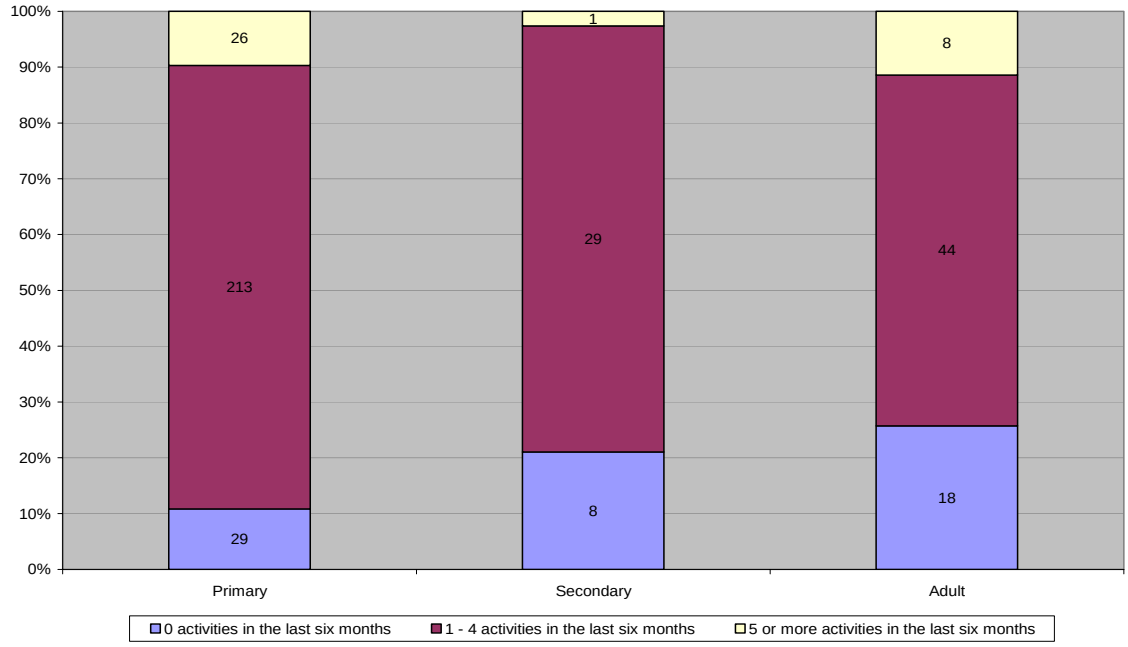
Graph 2.3: The number of respondents who feel they are a member of the CSP



Respondents were asked to report how many CSP activities they had attended in the previous six months. Only 9% of respondents had attended five or more activities. Overall 15% of respondents had not participated in any CSP activities over the last six months. This suggests that there have been few participants attending regular or sustained programmes of activity.

Closer examination of the highest levels of participation was undertaken. Participation in five activities in the last six months equates to a participation rate of less than one activity per month - this is clearly insufficient to generate any beneficial physiological changes. Sub-sample analysis by age group and intervention further highlighted the overall infrequency of participation. For example only 3% (8 / 268) of primary school respondents, one secondary school respondent and 7 adults had participated on more than five occasions in the last six months. Further analysis identified two 'regular' adult participants - one individual recorded participation in 24 activities, another in 26 - this equates to attending an activity approximately once per week. Graph 2.4 below illustrates the key findings by age group.

Graph 2.4: The number of CSP activities attended in the last six months



The following sections present detailed analysis of the Phase I and Phase II survey results. The Phase I results are presented retrospectively with the aid of graphical illustrations where appropriate, in the section that follows.

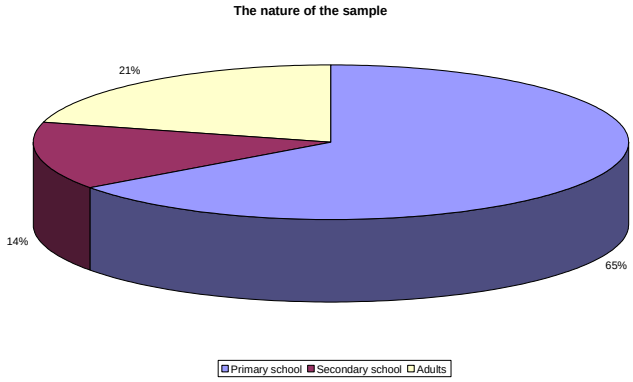
3. PHASE I RESULTS

This section presents detailed analysis of the findings from the Phase I survey. The analysis is presented in seven sections each covering a specific area of investigation on the survey questionnaire.

For clarity of interpretation all graphs relating to sub-groups display each intervention in alphabetical order. As a result of this it is easy for any individual reading these Phase I findings who is interested in the results of one area intervention only, to review such results and benchmark them to the overall survey findings.

Where appropriate, selective use is made of sub-sample results i.e. interventions and survey types, subject to the *caveat* that such sub-samples are subject to relatively high sampling error.

In total 777 completed questionnaires were received.



The sample consisted predominantly of primary school children (65%), with the remaining 35% made up of secondary school children (14%) and adults (21%).

A breakdown of the questionnaires received by intervention is provided below in Table 3.1.

Table 3.1: The sample by intervention

Intervention	No. of Completed Questionnaires	% of Overall Survey
Derry	295	38%
Ballymena	139	18%
Newtownabbey	101	13%
East Belfast	98	12%
Disability Sport N.I	75	10%
Moyle	69	9%
Total	**777**	**100%**

3.1 Physical Activity

Physical Activity - Overall

Participation in physical activity was measured by respondents reporting the number of days per week and the number of hours per week that they participated in various types of activity. This enabled analysis of both the frequency and intensity of participation.

Children's physical activity was classified into 'sport', 'exercise or active play' and 'jobs around the home'. The aim was to include in the analysis all activities that a person had been involved in that would raise the heart rate, therefore having the potential to impact on their cardiovascular fitness. Specific examples of activities illustrating each classification were provided to enhance consistency. However, due to the age of respondents there may have been some degree of overlap between the 'sport' and 'active play' categories. Physical activity undertaken by adults was categorised into vigorous activity, moderate activity and walking.

The analysis of physical activity within this report is extensive and very detailed; therefore the presentation style of this section incorporates 'bullet points' for ease of interpretation.

To put these findings into context it should be noted that the current guidance regarding the recommended amount of physical activity from the Chief Medical Officer is at least 30 minutes of exercise per day, 5 times per week for adults and one hour per day for children. Physical activity is vital to reducing the risks of cancer, heart disease and obesity. The scientific evidence in relation to this is described by the Chief Medical Officer as 'compelling'.

Around three in four women and three in five men in the UK do not take enough exercise according to the Chief Medical Officer. SIRC conducted a Yorkshire and Humber Sport and Physical Activity Participation Survey for Sport England that supported these claims. The report concluded that fewer than two in every five people living in Yorkshire (37%) participated in moderate physical activity of 30 minutes in duration at least 3 times per week. In Northern Ireland the proportion of adults not taking the recommended level of physical activity is 72%.

The 2001 Northern Ireland Health and Social Wellbeing Survey reported that one quarter of all adults are physically inactive (they had not taken any activity of at least a moderate level, lasting 20 minutes, on one or more occasion in the 7 days preceding the survey). In total 28% of adults in Northern Ireland had taken the recommended level of physical activity (5 x 30 minutes per week). Almost a half (47%) of all adults had taken an intermediate level of physical activity in the previous 7 days (above the inactive sedentary level but not sufficient to meet recommended levels).

The survey findings are presented below. As a result of the nature of the deprived areas targeted by the CSP low levels of participation were expected. In contrast to this, the results highlighted that participants took part in significantly more exercise than the current recommendation, in all areas.

Overall, respondents had taken part in physical activity on an average of 5.6 days in the week prior to the interview. On average this constituted 12.1 hours of physical activity per week.

- Analysis by survey type informed that the average number of days on which respondents participated was 5.8 for primary school children, 5.3 for secondary school children, and 5.2 for adults.

- The mean amount of time per week spent taking part in physical activity was 12.1 hours overall - 12.3 hours for primary school children, 14.3 hours for secondary school children and 9.6 hours for adults.

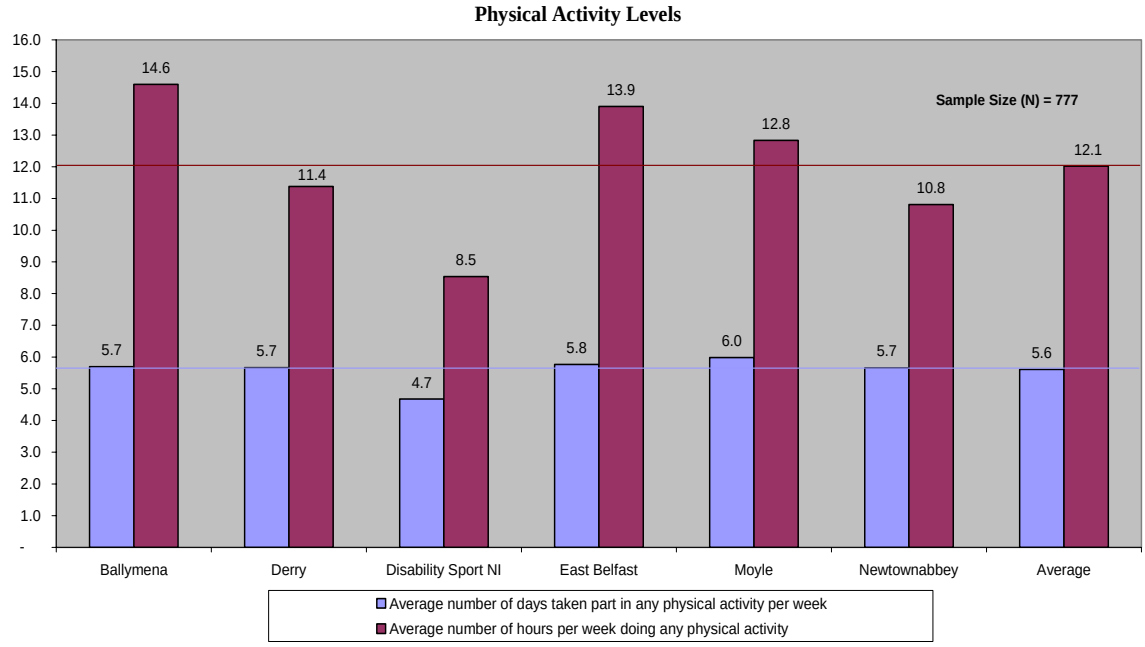
- The average number of days on which participants engaged in physical activity each week was fairly consistent across the inventions, although the Disability Sport NI participants reported slightly lower weekly participation.

- The average number of hours of physical activity each week varied considerably as shown below in Graph 3.2. Ballymena reported the highest participation levels (14.6 hours per week), in contrast to Newtownabbey (10.8 hours per week) and the DSNI programme (8.5 hours per week).

- Overall 62% of primary school children and 69% of secondary school children were members of local sports clubs away from school.

The results suggested that adults engaged in less physical activity than children. The frequency of participation (number of participation days) did not differ considerably between interventions; however there was significant variance in the volume of participation (number of hours per week) between interventions. A synopsis of this data is provided in Graph 3.2.

Graph 3.2: Participation levels measured by 'days' and 'hours' per week



The physical activity data was then subjected to sub-group analysis by survey type and intervention.

Physical Activity - Primary School Children

Respondents were asked to provide details on their weekly activities in terms of playing sport, undertaking physical activity and doing jobs around the home.

- On average, primary school children took part in both sport and physical activities on 5 days per week, and carried out jobs around the home on 2.5 days each week.

- The number of days per week on which participants engaged in sport and physical activity was fairly consistent across the interventions.

- The number of days per week on which participants engaged in household jobs ranged from 1.7 days in Moyle to 3.3 days in Derry.

- Not surprisingly, primary school children spent far more time on sport and physical activity than household jobs.

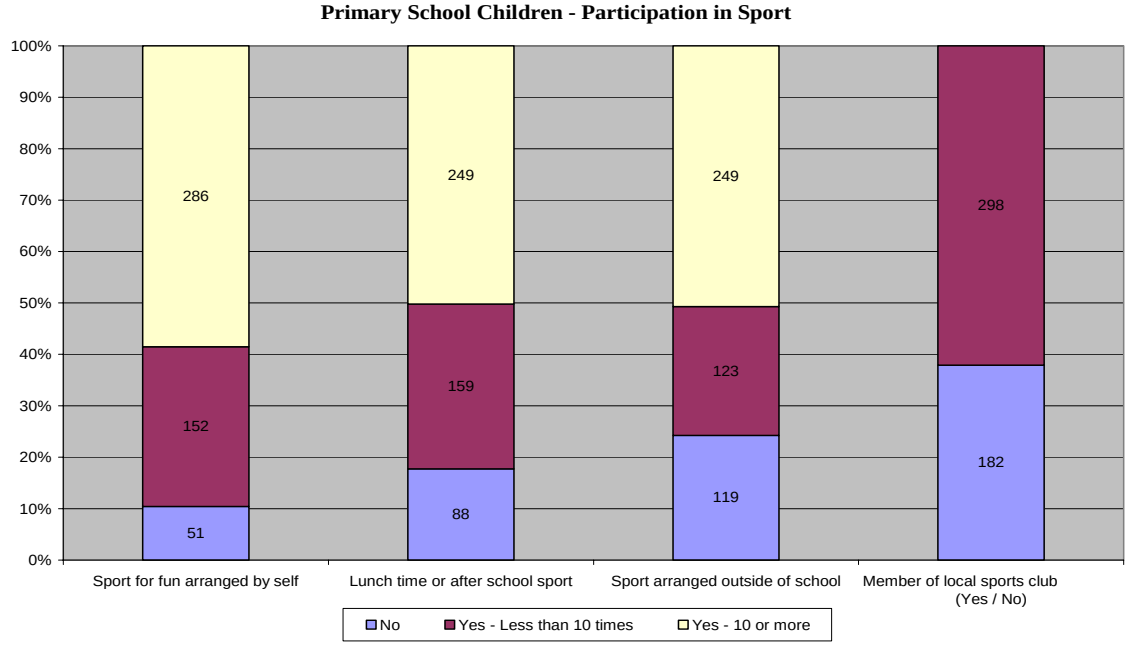
- Primary school children in Derry spent considerably less time engaged in physical activity (based on the three activity types combined) than the other five interventions. They did however spend a higher proportion of time engaged in household jobs (almost 25% of the total hours from all interventions).

- Children from Ballymena had the highest overall participation levels.

- Whilst the activity patterns for Disability Sport N.I. appeared to differ to those of any of the regional interventions, closer inspection confirmed that such findings related to a sample size of just one primary school child and therefore could not be subject to further analysis.

Further questions were asked to generate an overview of participation in relation to school sport at lunchtimes and after school, sport arranged outside of school, sport for fun and sports club membership. These results are presented in Graph 3.3.

Graph 3.3: Primary School Participation



Overall 90% of primary school children had played sport for fun in three months prior to the Phase I survey. Derry had the highest number of children not taking part in any sport

in the three months prior to the Phase I survey (15%). All respondents interviewed from Newtownabbey had taken part in some form of sport in the preceding three months, closely followed by East Belfast and Moyle. It is important to point out that these samples were relatively small compared to Derry and were therefore subject to a higher sampling error.

Overall 82% of primary school children took part in some sport either at lunchtime or after school. This is a very positive finding. However there are some areas of concern, in total 18% (88 children) did not take part in any sport at lunchtime or after school in the three months preceding the start of the Phase I survey. This was the highest in Newtownabbey with 27% of children not participating. On a further positive note, East Belfast and Moyle both had high proportions of primary school children participating in sport 10 or more times in the three months prior to the Phase I survey.

In total 76% of primary school children had taken part in sport outside of school. This indicated that 24% (119 children) did not take part in any arranged sport outside of school. Derry had the highest proportion of respondents who played sport outside of school (27%). Moyle had the highest proportion of primary school children participating in sport outside of school 10 or more times in the three months prior to the Phase I survey.

Overall 62% of primary school respondents were members of a sports club. This ranged from 41% of respondents in East Belfast to 71% of respondents in Moyle.

Physical Activity - Secondary School Children

Respondents were asked to provide details of their weekly activities in terms of playing sport, undertaking physical activity and doing household jobs. It is important to consider the caveat in relation to sample sizes when interpreting the results of this secondary school survey, these results were based on a maximum of 110 responses (assuming that all respondents had answered every question, which in practice was unlikely.)

- On average, secondary school children had taken part in sport on 4.5 days each week, physical activities on 4.1 days each week, and carried out jobs around the home on 1.9 days per week. These figures represented lower frequencies of participation than those of primary school children.

- The number of days per week on which participants engaged in sport and physical activity varied across the interventions.

- Participation in sport ranged from 2.9 days per week for respondents on the DSNI programme to 6 days in both East Belfast and Newtownabbey.

- Physical activity ranged from an average of 2.4 days per week in Derry to 6 days per week in East Belfast.

- Not surprisingly, secondary school children spent far more time on sport and physical activity than household jobs. The exception to this was Newtownabbey where the average number of days doing household jobs (4.4) exceeded physical activity days (3.6), however this was skewed by the very small sample size (just 5 respondents).

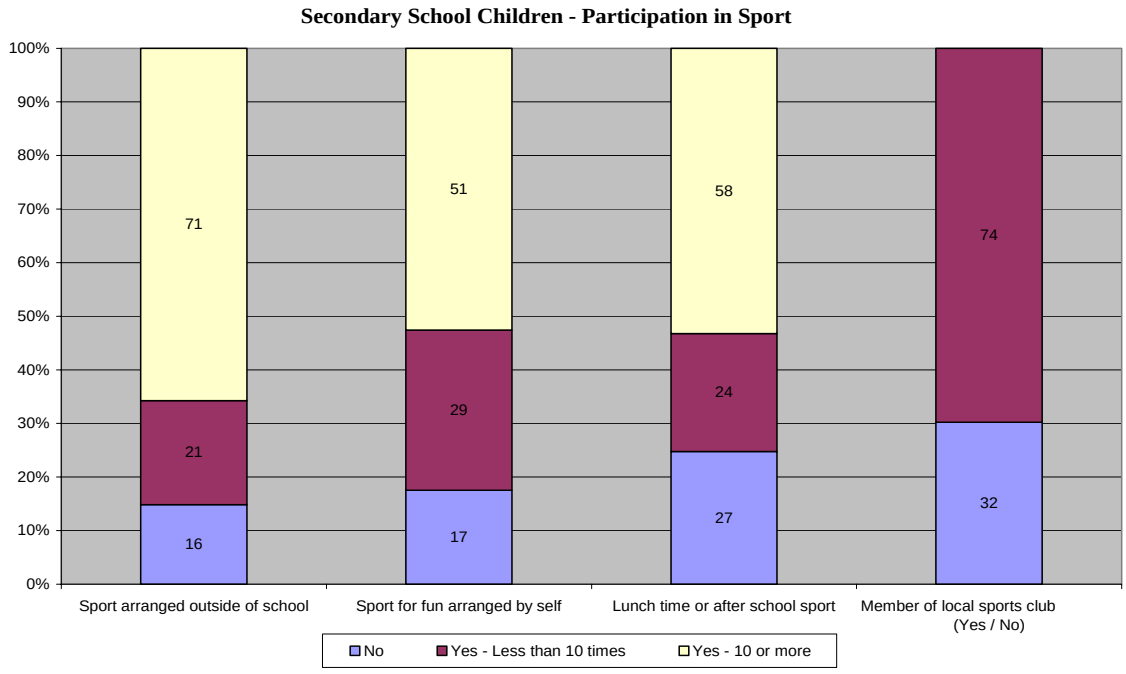
- Secondary school children in Moyle and those on the DSNI programme spent considerably less hours engaged in all physical activities (based on the three activities combined) than respondents from the other four interventions.

- Secondary school children from East Belfast had the highest overall participation levels.

- East Belfast had the highest proportion of secondary school children participating in physical activity (almost one third of the total hours for the whole sample), and sport (24% of the entire sample.) The East Belfast sub-sample represented 22 secondary school children.

Further questions were asked to generate an overview of participation in relation to school sport at lunchtimes and after school, sport arranged outside of school, sport for fun and sports club membership. These results are presented in Graph 3.4.

Graph 3.4: Secondary School Participation



In total 85% of secondary school children had taken part in sport outside of school. This compares positively with the primary school survey results, in which only 76% of respondents engaged in sport outside of school. Overall approximately two thirds of secondary school children participated in sport 10 or more times in the three months prior to the Phase I survey, this again exceeded primary school participation. The vast majority of secondary school children in Derry, Moyle, Newtownabbey and Disability Sport NI had participated in sport 10 times or more in the three months prior to interview. Ballymena had a disproportionate number of secondary school children not participating in any sport outside of school which may have skewed the overall results.

Overall 82% of secondary school children had played sport for fun in the three months prior to the Phase I survey. Ballymena (21%) had the highest proportion of children who had not taken part in any sport in those last three months. All respondents interviewed from Newtownabbey and East Belfast had taken part in some form of sport in the last three

months prior to the survey. Overall 18% of secondary school children (17 out of 97) had not taken part in sport for fun in the three months prior to completing the Phase I survey.

In total 75% of secondary school children had taken part in some sport either at lunchtime or after school. This was slightly lower than the primary school finding of 82%. More than 50% of respondents had participated at least 10 times in the last three months prior to the Phase I survey. Newtownabbey and Moyle had high proportions of secondary school children participating in lunchtime / after school sport 10 or more times in the three months prior to the Phase I survey, although the sample sizes in both cases were very small.

Overall 70% of all secondary school respondents were members of a sports club. This ranged from all respondents from East Belfast to 51% of respondents in Ballymena. These findings are encouraging and show a higher proportion of sports club members within secondary school children, than amongst those of primary school age. In terms of absolute figures, the survey identified 298 primary school children and 74 secondary school children who were members of local sports clubs.

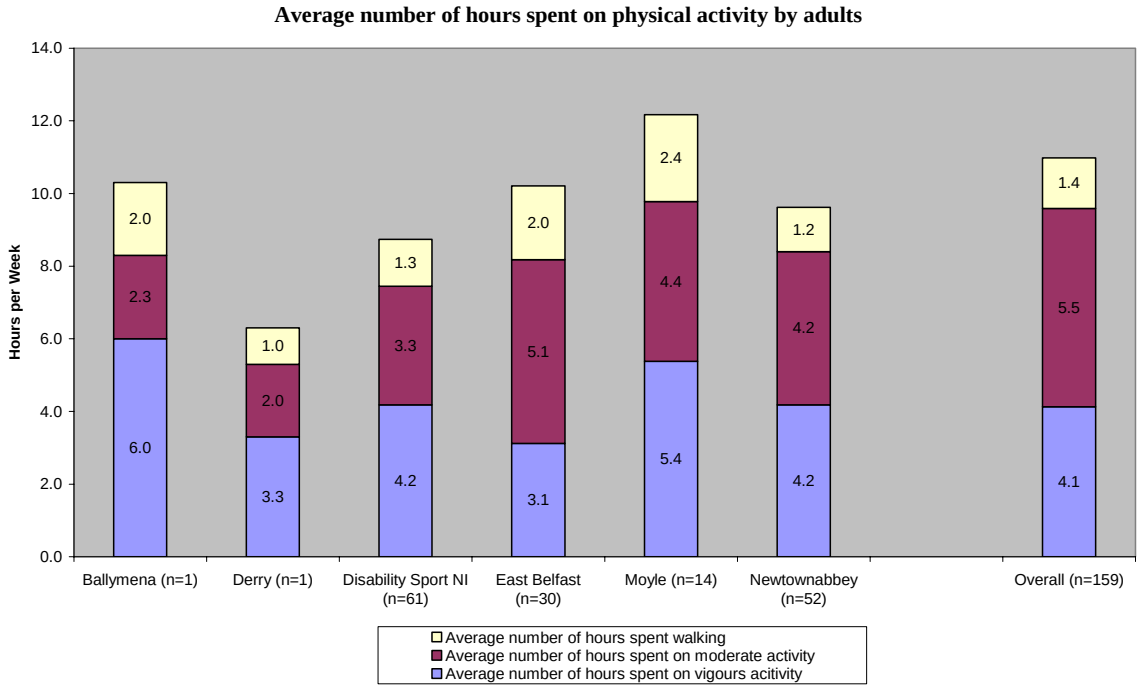
Physical Activity - Adults

Participation in physical activity by adults was measured in terms of the volume and type of participation.

- Adults spent a much higher proportion of their time either walking (on average 4.1 hours per week) or participating in 'moderate' physical activity (5.5 hours per week) than engaging in 'vigorous' activity (1.4 hours per week.)
- In terms of the actual proportions on average 13% of all activity monitored was 'vigorous', 50% was 'moderate' and the remaining 37% of the overall activity time was taken up by walking.
- To enable clear distinctions, examples of 'vigorous' activity included running, digging, swimming, football etc. whereas activities classified as 'moderate' exercise included mowing the lawn, cycling on the flat, carrying light loads etc.
- On average adults spent between 3.1 hours (East Belfast) and 5.4 hours (Moyle) walking each week. Moderate physical activity ranged from 3.3 hours (Disability Sport N.I.) to 5.1 hours (East Belfast). Participants from Moyle spent the highest amount of time engaged in vigorous activity (an average of 2.4 hours per week). The findings from Ballymena and Derry were excluded from this analysis as they were based on samples of just one respondent.
- Overall, participants from Moyle were the most active, with participants from Disability Sport N.I. the least active.

Graph 3.5 provides an overview of these findings.

Graph 3.5: Adults Weekly Physical Activity



Whilst differences between sub-groups are discussed it is important to bear in mind that in all cases, participation in physical activities were very high, and the majority of participants were exceeding the recommended guidelines from the Chief Medical Officer. The expected physical activity levels were low however the actual findings highlighted very high levels of participation.

3.2 Perceptions of Health & Fitness

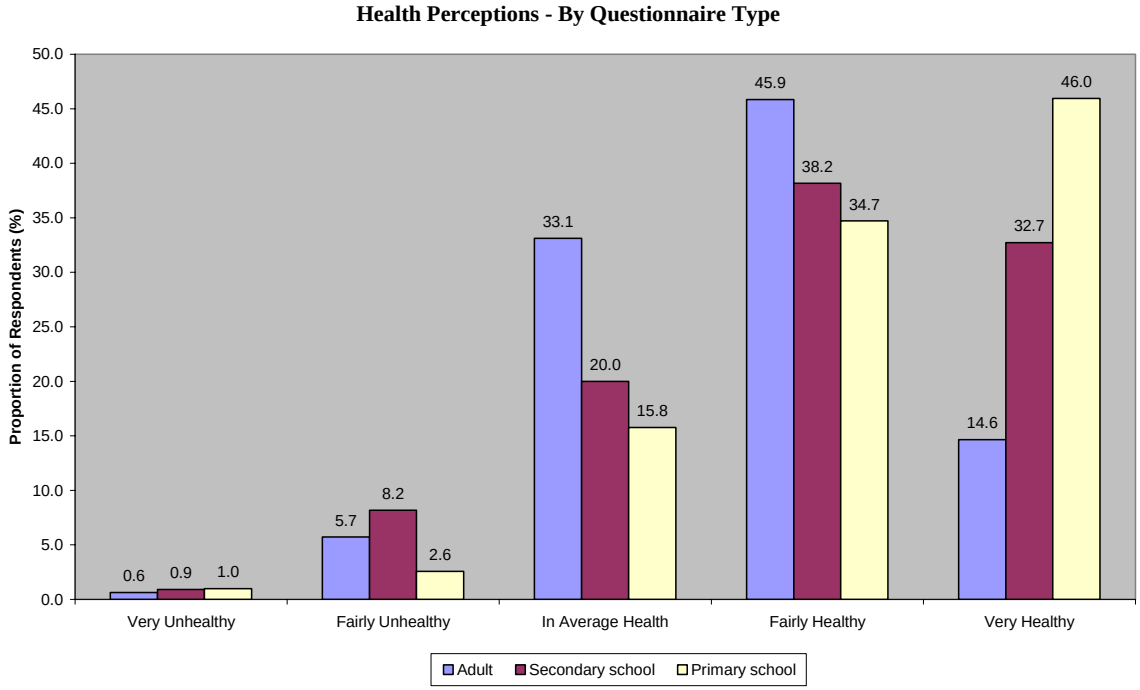
Not surprisingly, strong correlations were identified between how active respondents believed themselves to be and their perceived level of fitness. When questioned on their activity levels only 4.2% of primary school children, 9.1% of secondary school children and 7.4% of adults described themselves as either fairly inactive or inactive. Primary school children believed themselves to be the most active, almost half of respondents having described themselves as very active (compared with a third of secondary school children and less than one quarter of adults). The majority of respondents (90%+) viewed their fitness as average or above.

Perceived fitness levels mirrored the activity level findings. Only a minority of respondents of all ages believed themselves to be either fairly unfit or very unfit (12% of adult respondents, 9% of secondary school respondents and 3% of primary school respondents). As with the activity levels, the majority of respondents (88%+) viewed their level of fitness as average or above, with adults viewing their fitness levels more negatively than children. Almost 40% of adults viewed themselves as average in terms of fitness, a further 40% described themselves as fairly fit. Only 8.7% of adults described themselves as very fit, compared to 27.3% of secondary age and 41.8% of primary age respondents.

The findings relating to fitness and activity levels can be developed by analysis of health perceptions. Graph 3.6 shows that the majority of respondents perceived their health to be average or better. Overall 46% of primary school children perceived themselves to be very healthy, whilst 46% of adults perceived themselves to have fairly good health. Less than 1% of adults, secondary and primary school children described themselves as very unhealthy. The expectation was that health perceptions would be low however these findings illustrate very positive health perceptions.

Further analysis of the activity level findings by intervention now follows.

Graph 3.6: Health perceptions



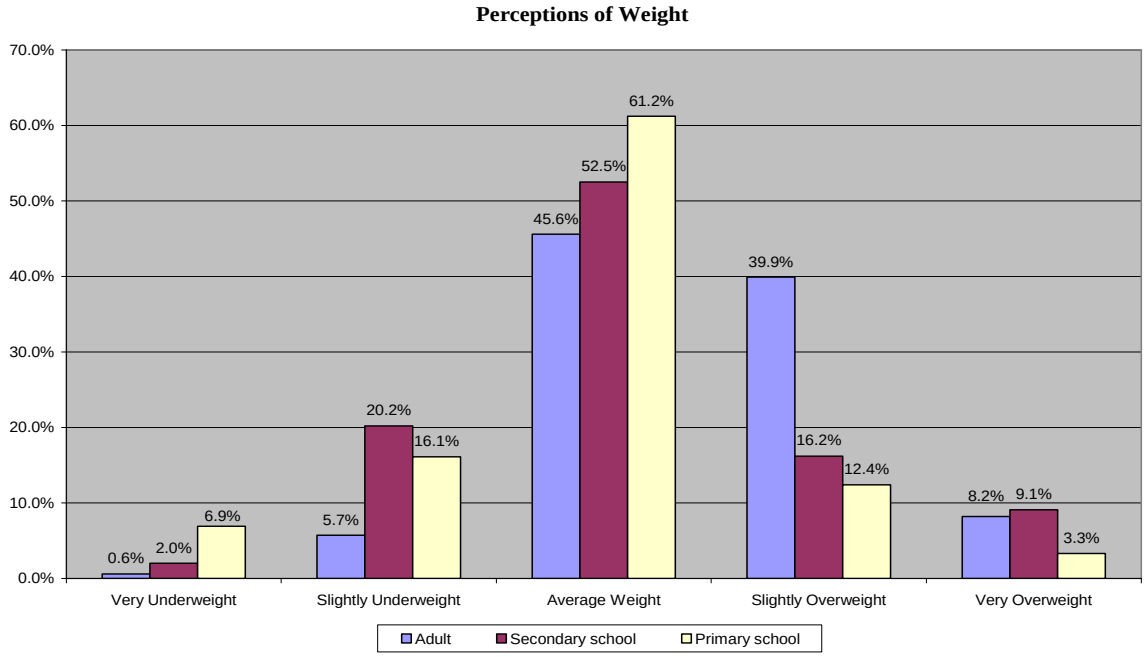
Derry had higher than average proportions of very active secondary school children and a high proportion of very active primary school children (144 respondents). Ballymena had the highest proportion of inactive / fairly inactive secondary school children, although these represented a minority. Over 50% of adults from Moyle described themselves as very active, although in absolute terms this represented 8 out of a total of 15 respondents. East Belfast and Disability Sport N.I. had lower than average proportions of very active adult respondents.

Analysis of fitness perceptions by intervention highlighted some consistency between the pilot areas. There was little difference in the reported fitness of primary school children by intervention, other than a slightly higher proportion of very fit children in Derry. In line with the activity level findings, Ballymena had the highest proportion of unfit secondary school respondents, although at the opposite end of the scale, they also had equally the highest proportion of very fit respondents. Adult fitness perceptions were consistent across the interventions, although Moyle had no respondents reporting that they were unfit.

In terms of health perceptions, the primary school findings were again consistent between the interventions, although Derry reported the highest proportion of very healthy respondents. In line with this Derry reported the highest proportion of very fit respondents. Again mirroring the fitness level findings, Ballymena had both the highest proportion of

unhealthy and very healthy respondents. Similarly, all respondents from Moyle reported average or better levels of healthiness, correlating with the self-reported fitness. This sub-analysis by intervention excluded all regional analysis where the number of respondents was 5 or fewer, as valid results cannot be drawn from such small sample sizes. Graph 3.7 supplemented the health findings with data relating to participant perceptions of their weight. In total 40% of adults reported being slightly overweight, and a further 8% being very overweight. Over a quarter of secondary school respondents viewed themselves as either slightly or very overweight. This figure reduced to 16% for primary school children.

Graph 3.7: Weight



3.3 Body Mass Index (BMI)

The assessment of Body Mass Index (BMI) is a simple, non-invasive and commonly used measure for determining the prevalence of overweight and obese people in various population groups. The efficacy of BMI as an appropriate measure of the impact the CSP had on participants was met with reservations. In the case of adults, height is fixed and therefore the only variable that can change is mass. Consequently, changes in BMI were a function of changes in weight.

There are difficulties associated with the interpretation of body mass index in childhood, which depends not only on height but also on sex and pubertal status. Children's body fat changes over the years as they grow. Also, girls and boys differ in their body fat levels as they mature. BMI for children, also referred to as BMI-for-age, is plotted on gender specific growth charts to take account of these factors and ensure correct interpretation. Each of the BMI-for-age gender specific charts (for people aged 2 to 20 years) contains a series of curved lines indicating specific percentiles. These established percentile cut-off points allowed the identification of underweight and overweight children. In summary, $\leq 5^{th}$ percentile indicates underweight, 6 - 84 percentile indicates normal BMI, 85 - 94 percentile indicates at risk of overweight and $\geq$ 95 percentile indicates overweight.

Weight loss is linked not only to increased physical activity but also improvements in diet which in turn may or may not be part of the programme. Furthermore there were significant numbers of CSP participants for whom weight loss was neither necessary nor desirable. Thus the use of BMI as a measure of the CSP's effectiveness is limited and the programme should not be judged on this measure alone.

BMI is calculated by the formula:

$$\frac{\text{Mass (kg)}}{\text{Height (m)}^2} \quad \text{for example} \quad \frac{75\text{kg}}{1.75^2} = 24.5$$

Each type of survey requested that participants recorded their height, in either feet and inches or centimetres, and their weight, in stones and pounds or kilograms. Where possible (i.e. within captive group surveying) height and weight measurements were taken by a member of the research team. Under the originally proposed methodology (captive group surveying) all participants would have had height and weight measurements taken by the research team to ensure accuracy. Unfortunately this method was not practical for all CSP participants, due to the piecemeal nature of the programmes, therefore in many cases the measurements were taken by the respondents themselves.

Guidance for the measurement process was provided with the questionnaires, this was emphasised in the case of assistance from parents for CSP participants under the age of 16. These measurements were then standardised (imperial measurements were converted into metric) and used to calculate of the BMI of participants.

BODY MASS INDEX	
Underweight:	less than 20
Normal weight:	20 - 25
Overweight:	25 - 29.9
Obese:	over 30
Morbidly obese:	over 40

The thresholds for underweight / normal / overweight / obese for adults are displayed to aid interpretation. BMI is age and gender specific, women are more likely to have a higher percent of body fat than men for the same BMI. At the same BMI, older people have more body fat than younger adults.

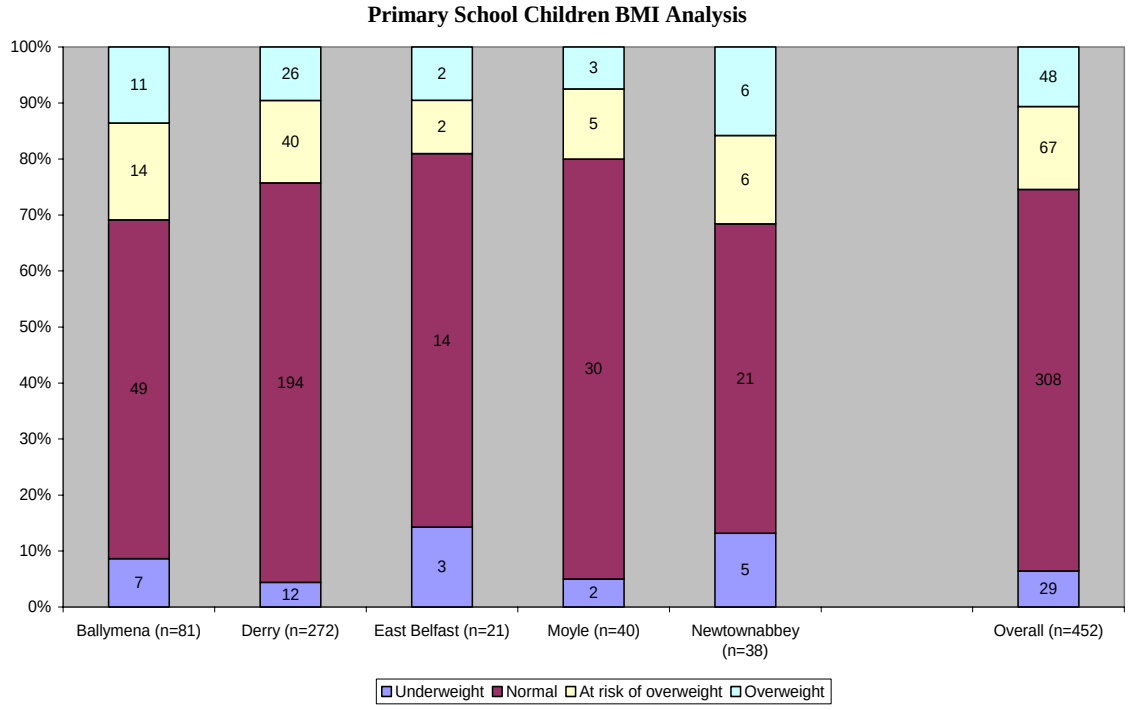
The 2002 NI Health and Lifestyle Survey found that nearly half (46%) of males aged 18 and over were overweight and 16% were obese. Less than one third (31%) of females aged 18 or over were overweight and 17% were obese. These findings are consistent with the Health Survey for England conducted by the Department of Health (DH) in 2001 which found that 47% of males and 33% of females were overweight.

One study on children's weight in Northern Ireland (Yarnell et al, 2001)[2] found that 16% of boys were overweight and 4% were obese. The proportion of girls who were overweight was also 16%, however the prevalence of obesity in girls was lower at 2%.

The results of BMI analysis by age are illustrated below.

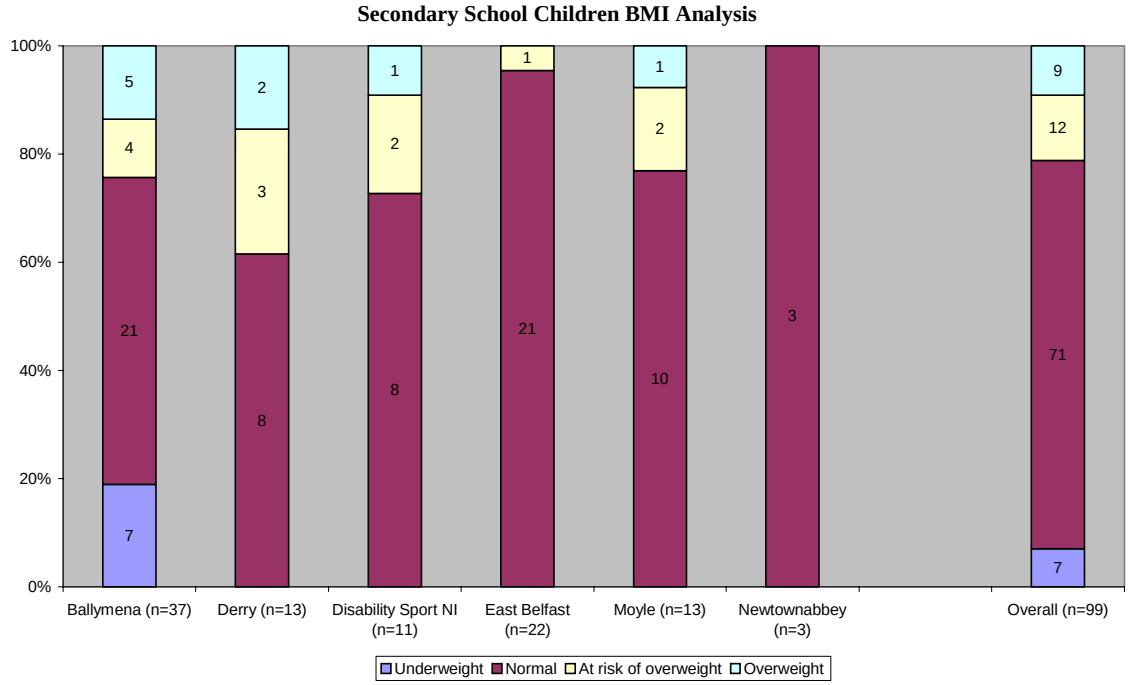
[2] Yarnell, JWG, McCrum EE, Paterson CC, Skidmore P, Shields MD, McMahon J and Evans AE (2001) Prevalence and awareness of excess weight In 13 and 14 year olds in Northern Ireland using recent international guidelines. Acta Paediatrica, 90, 1435-1439.

Graph 3.8: Primary school respondents - BMI



As illustrated by Graph 3.8, nearly 70% of primary school children had a 'normal' BMI. Newtownabbey and Ballymena both showed that over 30% of primary school children in the area were at risk of becoming overweight or were in fact overweight. Disability Sport N.I. is not included in this graph as none of the respondents from this intervention provided data. The BMI values were fairly consistent for both male and female primary school respondents.

Graph 3.9: Secondary school children - BMI

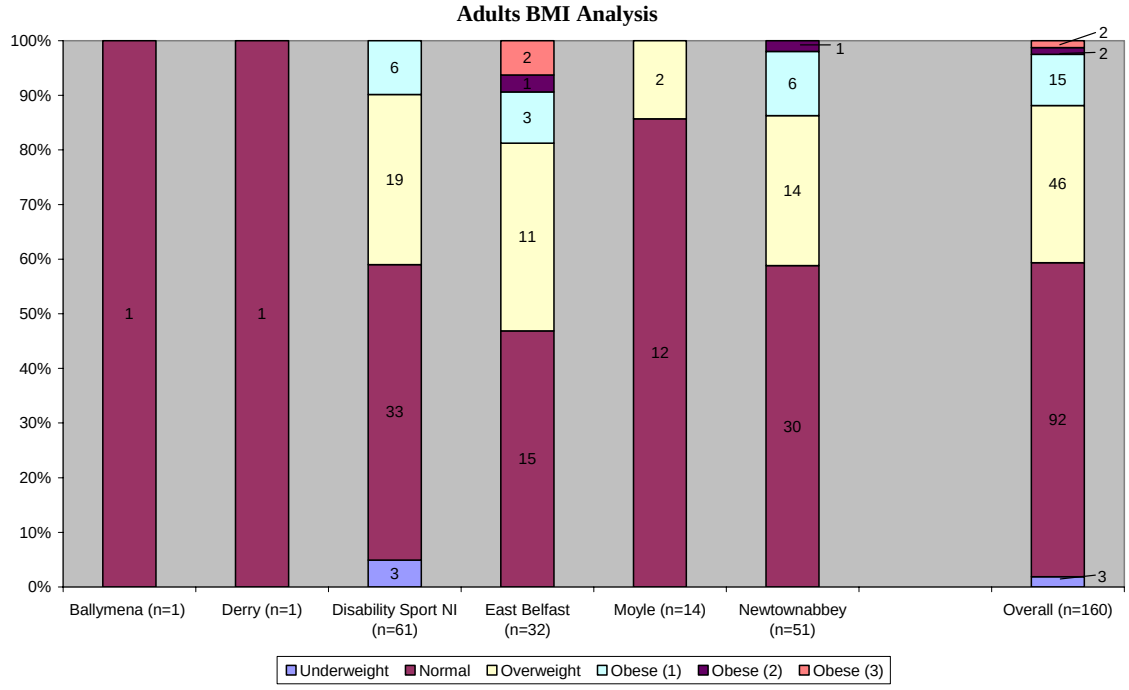


Over 70% of secondary school children had a BMI that was categorised as 'normal', this was very similar to the primary school survey findings. Ballymena was the only area that reported any underweight respondents (20%). The number of children that were overweight or at risk of becoming overweight ranged from 38% in Derry to 5% in East Belfast (as shown in Graph 3.9).

In terms of analysis by gender, unlike the primary school survey, significant gender differences were identified amongst secondary school children. All respondents that were identified as being underweight were male. The majority of respondents that were either overweight or at risk of becoming overweight were female - with 38% of females in this risk group compared to 12% of males.

Adult BMI profiles differed significantly to that of primary and secondary school children, as shown in Graph 3.10. Only 58% of adults were classified as being of normal weight (compared with 70+% in the surveys of children), with over 40% of adults classed as overweight or obese. Disability Sport N.I. was the only category where there were underweight adults. In contrast East Belfast was the only area where there were obese individuals in the highest category.

Graph 3.10: Adult - BMI



3.4 Healthy Eating

Respondents were asked to provide details on the amount of fruit and vegetables they had consumed on the day before completing the questionnaire. Detailed guidance in relation to the quantity of fruit / vegetables that constitute a 'portion' was provided, along with details of what foods are eligible to be included as fruit / vegetable consumption. As this survey question took only a snapshot in time (one day's consumption) further information on typical consumption was also sought to validate these findings. Specifically respondents were asked to what extent their daily consumption as reported via the questionnaire represented a typical day's consumption. Respondents were requested to state whether

they consumed more or less fruit and vegetables on the day in question or whether their consumption represented a typical day.

In the primary school survey, significant variance between usual and reported consumption levels was identified. It is possible that the accuracy level of the data reported may have been affected by the young age of the respondents, and the difficulty in estimating exactly how many portions of fruit or vegetables were contained within food (e.g. cooked meals that in all likelihood they did not prepare).

Furthermore, primary school questionnaires may have been completed by or with assistance from, the subject's parents. This raises issues regarding the accuracy of reporting if someone is reporting on the behaviour of another individual. For example, if a child had a 'school lunch' rather than a meal brought from home, the parent may be unable to make an accurate judgement on the fruit / vegetable content. These issues raised are unavoidable and therefore it is useful to consider them prior to the interpretation of results.

A further consideration for children and adults alike is that research has shown that people's perceptions of their food consumption are very different to their actual consumption.

An American study for the U.S. Department of Agriculture by Nutrition Insights in 2000 concluded that on average males aged 19 to 50 believed they consumed 2.1-2.2 servings of fruit on a given day, but based upon food diaries they actually consumed less than 1 serving. This held true across genders and age groups. Likewise adult females perceived they consumed more vegetable servings per day (2.5-2.6) than their actual consumption (1.7-2.2 servings).

The report concluded that "the difference between what people thought they ate and the number of servings they consumed may be the result of their not understanding what constitutes a serving". To illustrate this UK guidelines explain that 2 satsumas, 2 kiwi fruits or 5-6 passion fruits all constitute just 1 portion of fruit. Therefore it may be fair to assume that a proportion of those completing surveys may have counted portions incorrectly, i.e. 2 satsumas as 2 portions. Significant steps to educate people in this respect have been taken, and the packaging on many food items now indicates what proportion of your '5 a day' recommended intake the item constitutes. It is therefore likely that the misinterpretation of portion sizes may become less of an issue in future research.

The DH recommends that a healthy diet should include at least five portions of a variety of fruit and vegetables (excluding potatoes) a day. Data from the 2000-01 National Diet and Nutrition Survey showed that overall 13% of men and 15% of women aged 19 to 64 in Great Britain had consumed this amount on an average daily basis.

As shown in the Table 3.2, 64% of men and 61% of women had consumed less than 3 portions of fruit and vegetables

Table 3.2: The UK average consumption of fruit and vegetables

Average daily portions of fruit and vegetables consumed[1]: by sex and age, 2000-01[2]

Great Britain Percentages

	Average number of portions per day					
	None	Above 0 but less than 1	1 but less than 3	3 but less than 5	5 or more	All
Males						
19-24	6	32	57	5	0	100
25-34	1	26	49	17	7	100
35-49	0	14	45	27	14	100
50-64	1	6	38	31	24	100
All males aged 19-64	1	17	46	23	13	100
Females						
19-24	2	34	47	13	4	100
25-34	1	18	52	20	9	100
35-49	1	15	45	22	17	100
50-64	0	7	37	34	22	100
All females aged 19-64	1	15	45	24	15	100

1 Fruit and vegetables including composite dishes (all fruit juice counted as one portion; all baked beans and other pulses counted as one portion).
2 July 2000 to June 2001.

Source: National Diet and Nutrition Survey, Office for National Statistics

The Northern Ireland Health Promotion Survey in 2001[3] showed that on average 19% of adults consumed the recommended level of fruit and vegetables. Around one third (35%) of adults consumed between 3 and 4 portions, with 11% not consuming any fruit or vegetables on an average day. In terms of typical consumption, 51% of respondents reported consumption of the same amount of fruit and vegetables as usual, with a further 31% reporting that they consumed more than the usual amount, with the remaining 18% reporting lower than average consumption.

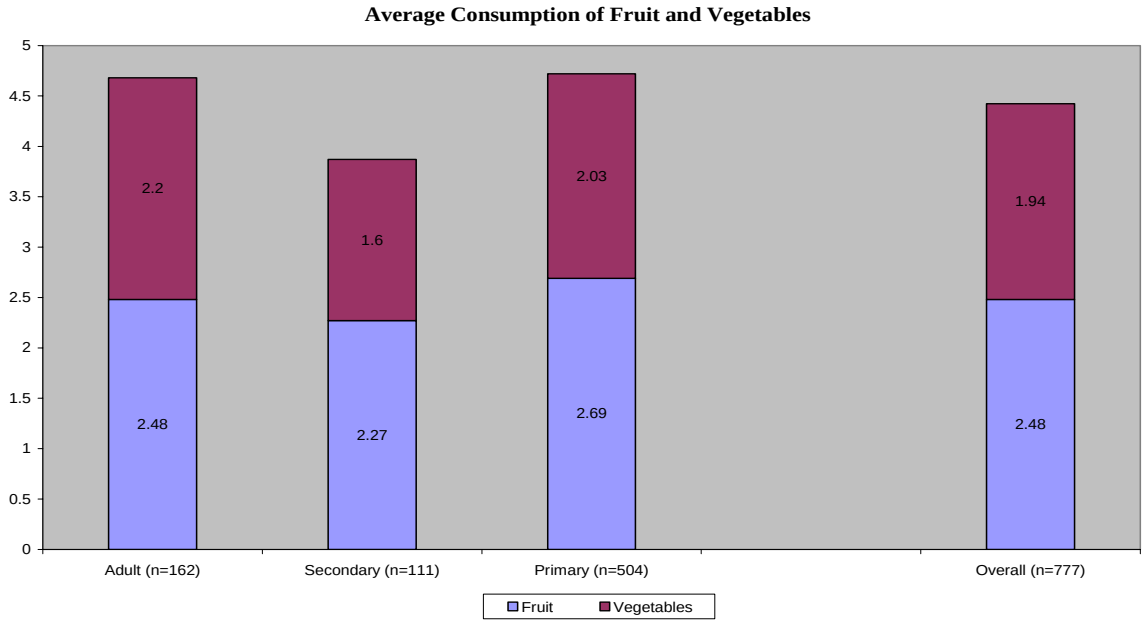
Relating to children's consumption, the National Diet and Nutrition Survey published in July 2000, found that children ate only two portions of fruit and vegetables a day, compared with expert recommendations for five. One in five children ate no fruit in a week and three in five ate no leafy green vegetables. Children in low income groups were 50% less likely to eat fruit and vegetables. The equivalent 2001 HPA 'Eating for Health' survey[4] investigating children's consumption of fruit and vegetables, found that 11% of children consumed the recommended 5 portions of fruit and vegetables. In total 20% of young people consumed no fruit or vegetables on an average day.

Caution is required when comparing the national data relating to the consumption of fruit and vegetables by adults and children because of the different ways in which this question has been posed. For example the HPA survey of children in 2001 asked only those that consumed fruit and vegetables on 'most days' what their actual consumption was in terms of number of portions. The consumption of 'fruit' and 'vegetables' is often measured separately because surveys are usually designed with these as two separate questions so it is easier for the respondent to remember / estimate their consumption. These issues aside, the national data does provide an approximate benchmark which enables us to clarify that the consumption of fruit and vegetables identified within this survey exceeds average national consumption by a considerable amount.

[3] Eating for Health? A survey of attitudes, awareness and eating habits among adults in Northern Ireland. Sept 2001, Health Promotion Agency (HPA).
[4] Eating for Health? A survey of eating habits among children and young people in Northern Ireland. March 2001. HPA.

Analysis of the fruit and vegetable consumption by adults and primary school children in the sample highlights very high consumption. The findings are on the whole very positive (see Graph 3.11). The average consumption of fruit and vegetables for the overall sample was 4.42 portions per day. The average consumption for the overall sample was below the recommended intake of five portions of fruit and vegetables per day, but compared very favourably with the UK averages for consumption as discussed above.

Graph 3.11: Overall Consumption of Fruit and Vegetables



Analysis by intervention and survey type identified some interesting contrasts. Primary school children from Newtownabbey had the lowest level of consumption, a combined average of 3.45 portions per day, whilst Derry reported the highest consumption which exceeded the recommended daily amount at 5.29 portions. This finding perhaps reflects the fact that Derry CSP is linked to other interventions which have included initiatives relating to healthy lifestyles. The overall average for primary school children was 4.72 portions, just below the recommended guideline of 5 portions per day.

Secondary school children consumed on average less than 4 portions of fruit or vegetables per day. Ballymena and Moyle reported the highest consumption (4.35 and 4.30 respectively), whilst Derry reported the lowest (3.21). This contrasts with the primary school findings whereby Derry reported the highest level of consumption.

Adults reported average consumption of slightly less fruit and vegetables than primary school children (4.68 portions). This was below the recommended level of consumption but not significantly so, and was considerably higher than the average person's consumption in the UK. It was sufficiently higher that the expected levels. As with the secondary school survey, adult respondents from Moyle reported the highest level of consumption of all the interventions, in this case the average consumption exceeded the recommendation guidelines (5.36 portions). East Belfast adults reported the lowest average intake of fruit and vegetables (4.09 portions), although this consumption is much higher than UK averages.

Overall an average of 60% of respondents said that their consumption of fruit on the day prior to the interview was the same as usual and 53% said that their intake of vegetables was fairly typical of their diet.

Analysis by age shows that the reported consumption of fruit and vegetables by adults was the most typical of daily consumption, whereas children reported a greater difference between consumption on the day before completing the questionnaire and their diet on an average day. It is noted that primary school children had the greatest difference between their reported consumption and typical diet, with in excess of 40% of children not eating a typical diet on the day in question (this equates to over 200 children.)

In summary, it was clear that both adults and children were eating far more fruit and vegetables than the UK average. Whilst overall consumption fell slightly short of the recommended 5 portions of fruit and vegetables per day, consumption was not far away from this benchmark.

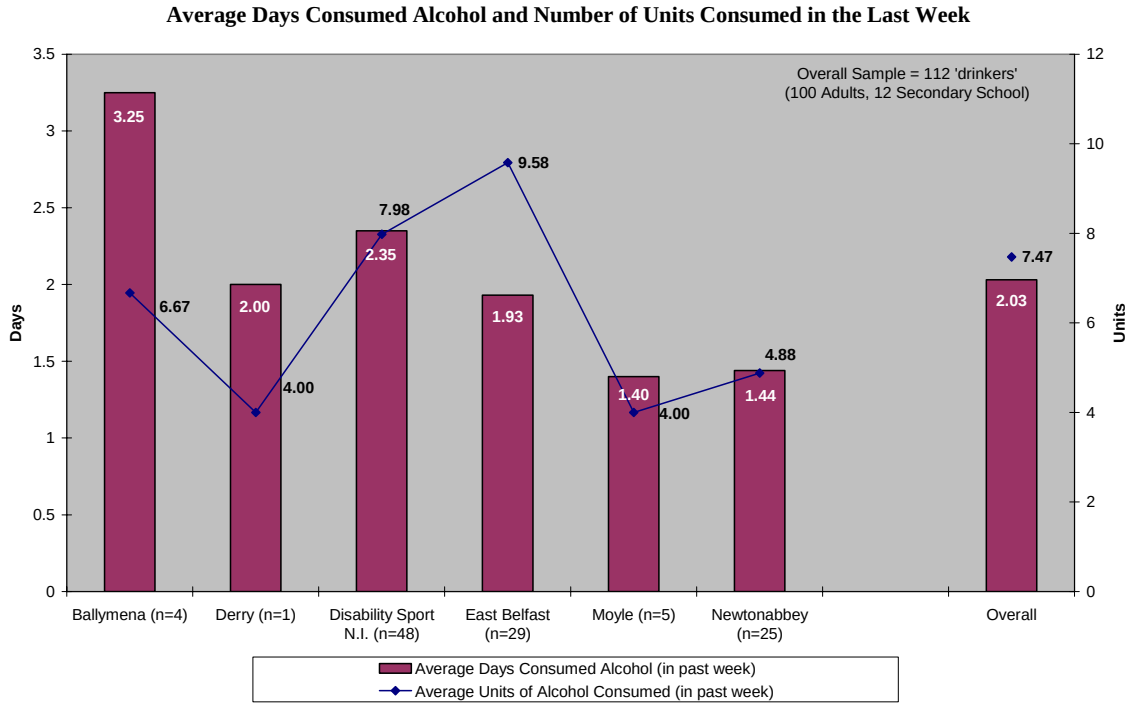
3.5 Drinking & Smoking Habits

Questions relating to alcohol consumption were excluded from the primary school survey, hence the overall sample size for these questions is reduced to 273. Overall, 62% of adults and 11% of secondary school children consumed alcohol in the week prior to completing the questionnaire.

One hundred adults had drunk alcohol in the week prior to completing the Phase I questionnaire, consuming an average of 7.5 units. Overall 38% of adults had not consumed any alcohol during the preceding week. A further 31% of adults had consumed alcohol once in the week in question, 17% had consumed alcohol twice and 14% (22 respondents) had consumed alcohol on more than two days in the week before the survey.

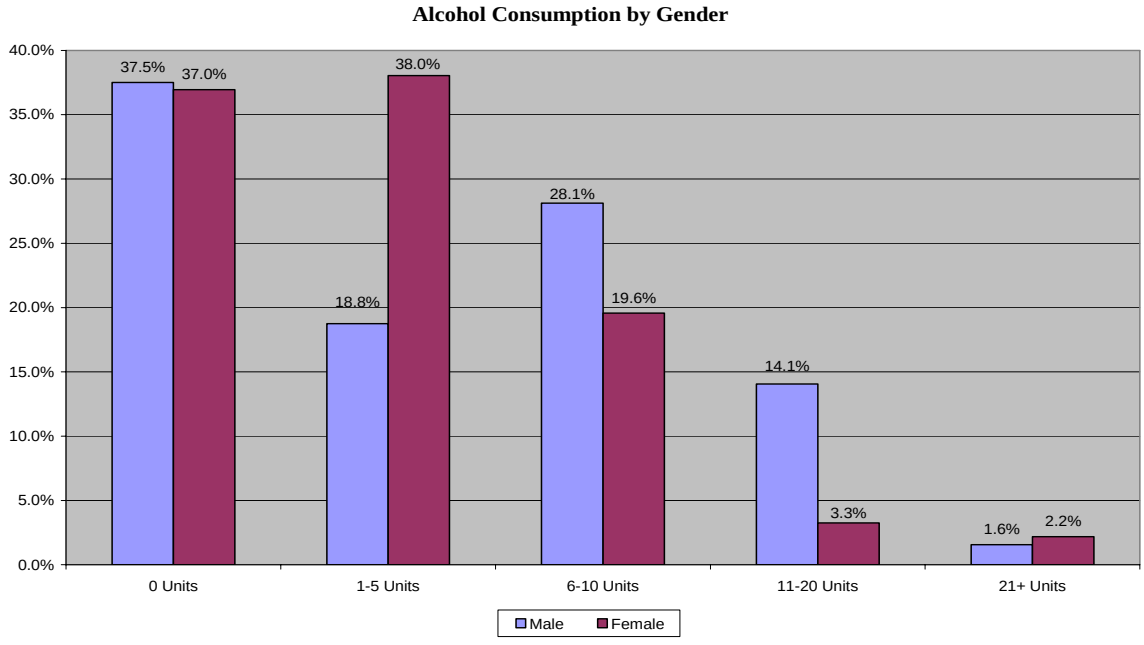
Only 12 secondary school respondents (11% of the sample) consumed alcohol in the week prior to completing the questionnaire. Of these, four respondents had consumed alcohol just once per week, six people had consumed alcohol twice during the previous week, one person had consumed alcohol on three different occasions, and just one respondent reported alcohol consumption on all seven days of the preceding week. Secondary school children who reported alcohol consumption were drinking on two days per week and consumed an average of nine units of alcohol.

Graph 3.12: Overall Alcohol Consumption



Alcohol consumption was also analysed by gender. This analysis had only been undertaken for adults due to the small sample size of secondary school children who consumed alcohol. Graph 3.13 provides a synopsis of this data which is subsequently discussed in conjunction with national data on alcohol consumption to put these findings into context.

Graph 3.13: Alcohol Consumption by Gender



The number of respondents who did not consume alcohol is equally split by gender. A higher proportion of female respondents reported consumption of between one and five

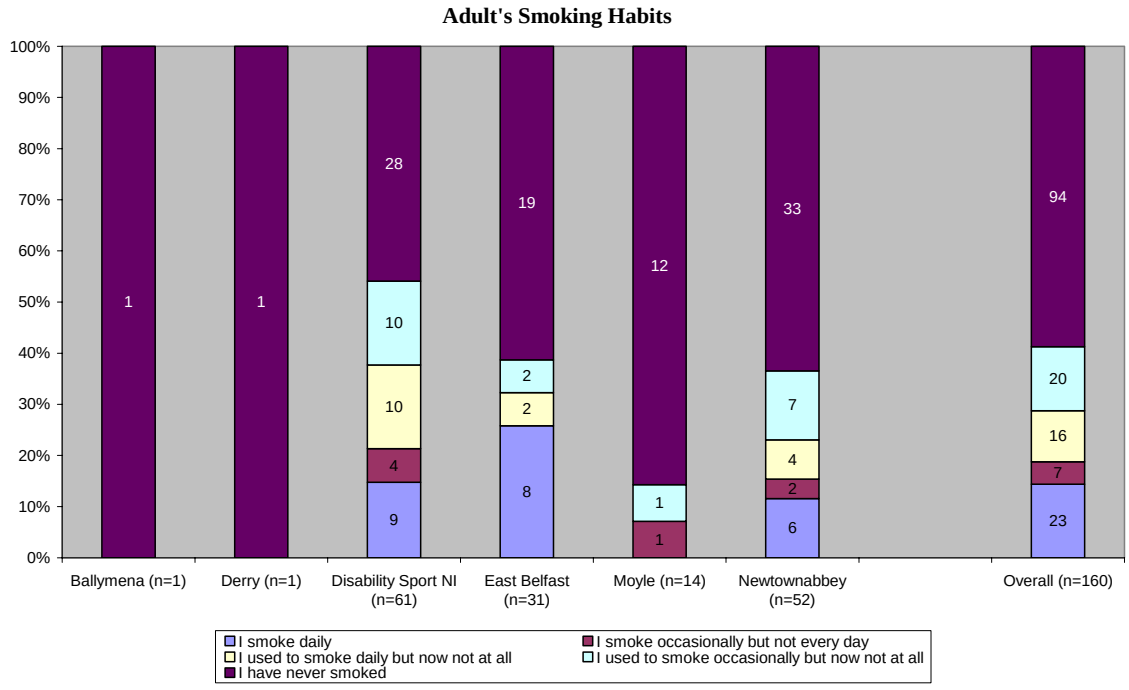
units of alcohol per week, with more male respondents having a weekly consumption of between 6 and 20 units.

Government guidelines suggest that women should consume no more than 2-3 units of alcohol per day, and men should not consume more than 3-4 units per day. It is recommended that women should not consume more than 14 units per week, and men no more than 21 units.

Department of Health statistics tell us that on average 30% of men and 16% of women drink 21 or more units of alcohol per week. In Northern Ireland, 37% of men and 20% of women exceed the recommended level of alcohol consumption[5]. As illustrated in Graph 3.13 only approximately 2% of both male and female respondents reported consumption at this level, significantly below the national averages. These benchmarks enabled us to conclude that the levels of alcohol consumption identified within this survey are significantly lower than UK averages, and are well within the recommended guidelines for 'responsible' consumption. This is particularly surprising because the CSPs are operating in areas of high deprivation and as such high alcohol consumption would be expected.

This lifestyle analysis was extended to incorporate smoking habits (for adults and secondary school children only), as shown in Graph 3.14.

Graph 3.14: Smoking Habits



Overall, approximately 60% of adults had never smoked. Only 23 individuals (14%) of respondents smoked on a daily basis, with a further 4% stating that they smoked occasionally. To contextualise this, 81% of the adults surveyed did not currently smoke. The proportion of respondents expected to be smokers was high however the research findings illustrated that the proportion of smokers was low.

[5] Adult drinking patterns in Northern Ireland. December 2002. HPA

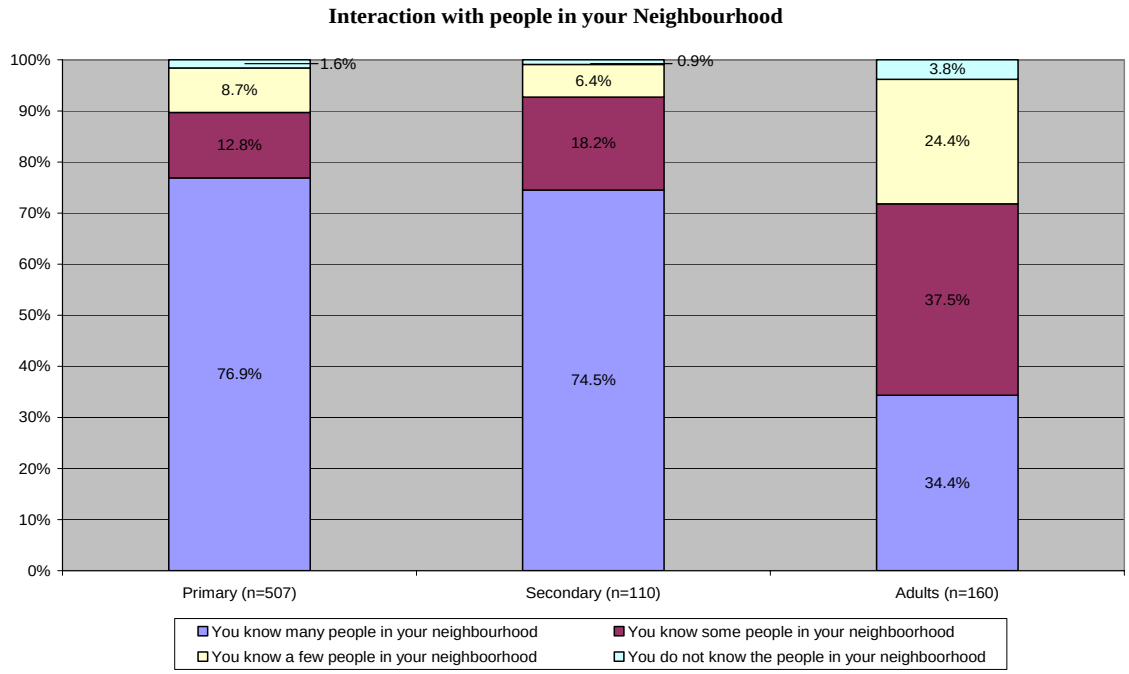
East Belfast had the highest proportion of adults that smoked daily (26%). Disability Sport N.I. had the highest proportion of smokers overall (54%).
Over 95% of secondary school children in the sample did not smoke. The 5% of secondary children that did smoke constituted only five individuals from Ballymena. Four of these five individuals disclosed the number of cigarettes that they smoked each week; the average was 62 cigarettes, equivalent to nine cigarettes per day.

In 2003/04, 26% of adults aged 16 or over in Great Britain smoked cigarettes[6]. Similarly, 22% of respondents in Northern Ireland's Health and Lifestyle Survey (2002) were current smokers. In 2002, 10% of secondary school children aged 11-15 in England were regular smokers (DH, 2003)[7]. No comparable findings specifically relating to Northern Ireland were identified. Our research findings show that 18% of adults and 5% of secondary school respondents were smokers, clearly well below the UK average.

3.6 Social Capital - Your Local Community

Social capital describes the pattern and intensity of networks among people and the shared values which arise from those networks. Greater interaction between people generates a greater sense of community spirit. Measuring the social capital in communities was achieved through establishing levels of trust, membership of groups and associations and assessing social networks. Each survey type included questions regarding an individual's current feelings and sense of belonging in relation in their local community. The adult surveys incorporated further questions designed to facilitate a more detailed assessment of social capital. These questions enabled time series analysis of whether participation in sport activities helps to strengthen local communities.

Graph 3.15: How well do you know the people in your neighbourhood?



[6] Source: National Statistics website - www.statistics.gov.uk/cci/nugget.asp?id=866. Data compiled from the General Household Survey, 2003-04.
[7] Smoking, drinking and drug use among young people in England in 2002. Department of Health, 2003. http://http://www.dh.gov.uk/assetRoot/04/11/92/19/04119219.pdf

Graph 3.15 provided a comparison of the extent to which respondents know members of their local community by survey type. Primary school children had a very strong connection within their local community, as you would reasonably expect for children of these ages. This is a likely consequence of the importance of school and the local network of peers generated through this forum, and the accepted tradition of playing with friends of a similar age that live on the same street or within the immediate surroundings. These findings can be equally applied to secondary school respondents; however analysis of the adult survey identified very different characteristics.

The highest proportion of adult respondents reported that they knew some people within their neighbourhood. Approximately one third of respondents reported knowing many people within their neighbourhood, in contrast to approximately three quarters of primary and secondary school children.

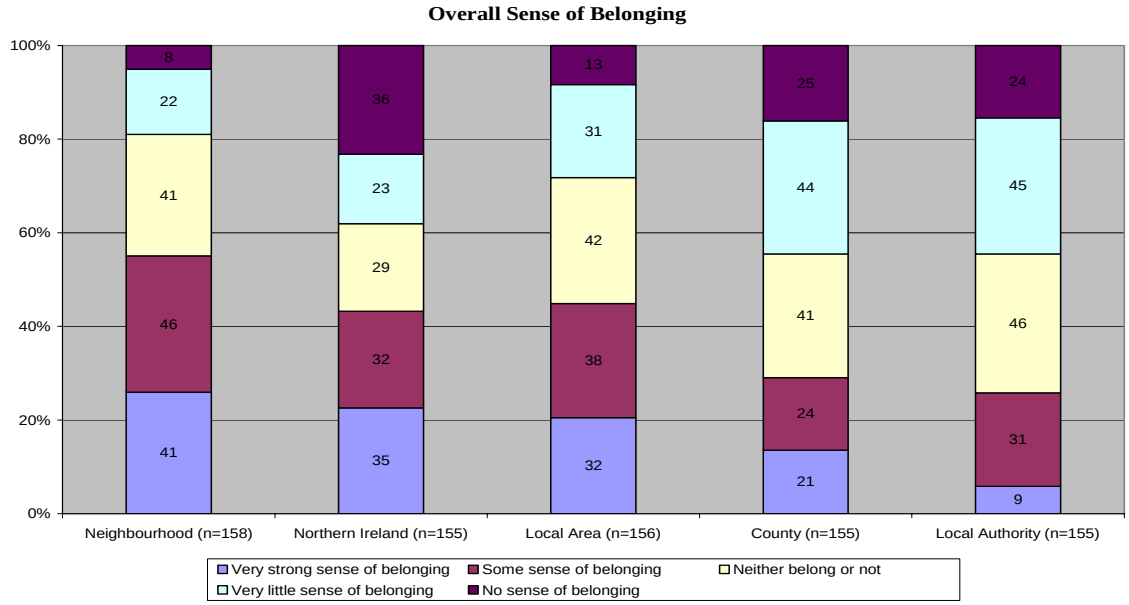
Intervention specific analysis highlighted consistency across primary school respondents. The percentage of secondary school respondents that reported knowing many of the people in their neighbourhood varied from 50% of respondents on the Disability Sport N.I. programme to 95% of respondents from Derry. In the adult survey 93% of respondents from Moyle reported knowing many people in their neighbourhood, in contrast to 39% in Newtownabbey, and less than one quarter of respondents from both East Belfast and Disability Sport N.I. It should be noted that the sampling error for the 14 respondents from Moyle was much higher than the other three interventions discussed.

Further to the social network data, 90% of primary school children in the sample had some friends in their local area. Over 20% of primary school children had all their friends residing in their local area, a further 34% reported that most of their friends live locally. Derry had the highest proportion of primary school children not knowing anybody in their neighbourhood (just over 10%).

The majority of secondary school respondents (95%) had some friends in their local area, 59% of secondary school children reported that most of their friends reside locally. Only 13% of secondary school children reported having 'all their friends' living locally, in comparison to 21% of primary school respondents. East Belfast had the highest proportion of respondents (27%) with all their friends living locally.

Adult respondents were asked to express how strong their sense of belonging was on a local, regional and national basis. A synopsis is provided in Graph 3.16.

Graph 3.16: Sense of belonging



Respondents expressed the strongest sense of belonging in relation to their neighbourhood, 55% of respondents reported at least some sense of belonging. Five percent of respondents reported no sense of belonging in relation to their neighbourhood. Twenty-three percent of respondents felt a strong sense of belonging to Northern Ireland, with a further 21% expressing some sense of belonging. In contrast, a further 23% of people reported feeling no sense of belonging to Northern Ireland. Forty-five percent of adult respondents reported either some sense of belonging or a strong sense of belonging to their local area. In relation to a respondent's county and local authority, a lesser sense of belonging was noted, with 45% in each case feeling very little or no sense of belonging.

Sub-analysis by intervention identified a very strong sense of belonging to neighbourhoods and local areas by respondents from Moyle. In contrast Moyle had the highest proportion of people reporting that they had no sense of belonging within Northern Ireland (although it should be noted that the sample size for Moyle was just 14). Respondents from Newtownabbey and Disability Sport N.I. reported the highest sense of belonging to Northern Ireland.

Adult respondents were asked to consider all the people that live in their neighbourhood and give their opinions on whether they felt that people within their community were trustworthy. Only around 1% of respondents stated that none of the people in their neighbourhood could be trusted. Forty six percent of respondents felt that some people in their neighbourhood could be trusted with over one third of respondents of the opinion that most people in their neighbourhood could be trusted, this equates to an overall expression of trust by 82% of respondents. Respondents from Moyle and Disability Sport N.I. reported the highest feelings of trust towards their neighbours and stated that many could be trusted (50% and 45.2% respectively.) These were very positive findings and it is hard to imagine how they might increase in Phase II as a result of taking part in the CSP. The findings are indicative of high social capital, this opposes the low levels of social capital that were predicted at the onset.

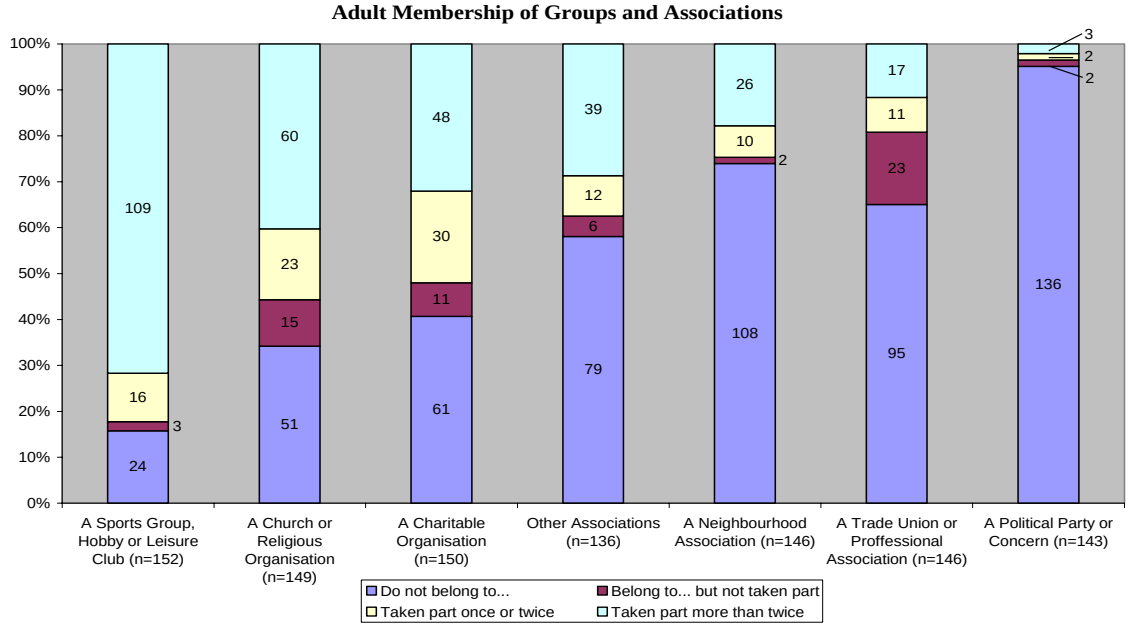
To put these findings into a UK context, 'neighbourliness' was measured within the General Household Survey (2000). Just under half of people (46%) said that they knew most or many people in their neighbourhood, while more than half (58%) felt they could trust most or many people in their neighbourhood. Whilst not directly comparable (our findings measure 'many/some' rather than 'many/most'), with regards to neighbourliness the survey findings were very positive and show that 72% of respondents knew people within their community, and that 82% had some level of trust for their neighbours.

Adults were also asked to specify the extent of their involvement with groups and associations. Graph 3.17 provides an overview of these results, ranked by frequent involvement.

Overall 72% of adults had taken part in the activities of a sports group, hobby or leisure club more than twice in the year prior to the Phase I survey. This fell to 40% for at least twice yearly involvement with a church or religious group and 32% for a charitable organisation. This compared with 37% of respondents in the 2002 Health and Lifestyle Survey that were members of a church / charitable or voluntary organisation. Trade unions or professional associations had the highest proportion of people that were members of these groups but had not taken part in any activity in the past year. Political party concerns had the lowest overall membership.

Analysis by intervention highlights that 100% of respondents from Moyle were members of a sports, hobby or leisure club. This compared with 82% of respondents from Newtownabbey, 69% in East Belfast and the lowest proportion of respondents on the Disability Sport N.I. programme (58%). Moyle had the highest proportion of people that attended a church or religious organisation on more than two occasions each year (54%) compared with East Belfast which had the lowest (23%).

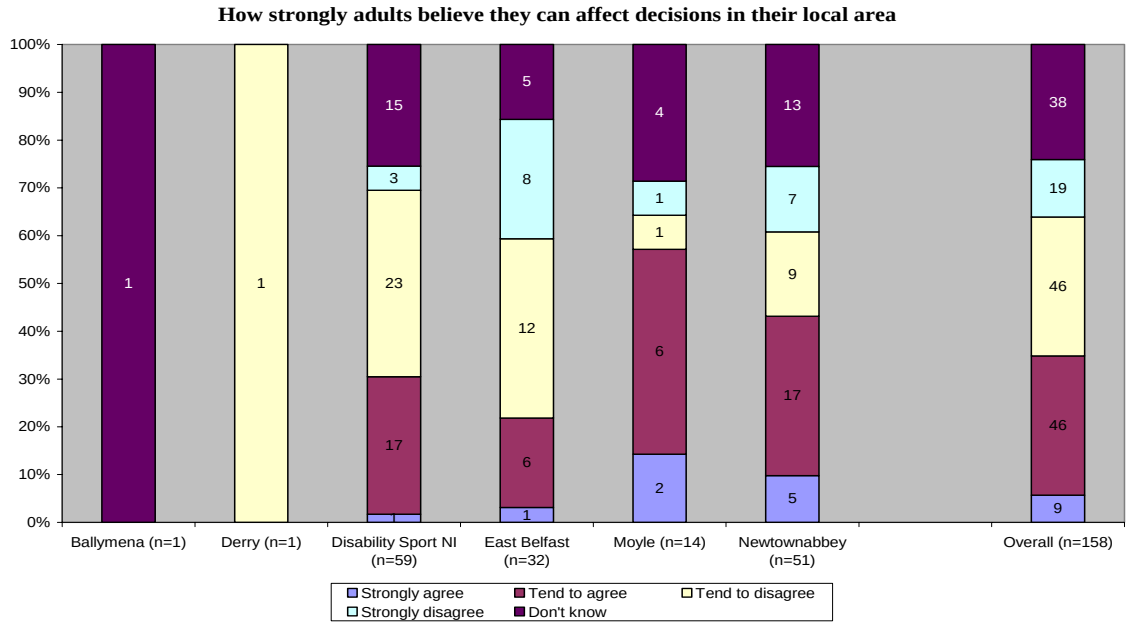
Graph 3.17: Membership of Groups / Associations



Adults were also asked to consider the extent to which they felt able to influence decisions in their local area. Overall a majority of respondents felt unable to influence decisions (41%). This data varied by intervention, with 57% of respondents from Moyle agreeing

that they were able to influence decisions, in contrast to only 22% of respondents from East Belfast agreeing with the statement.

Graph 3.18: Influencing Local Decisions



3.7 Self Esteem

In simple terms, self-esteem is a measure of how you estimate yourself. There is a widespread view that low self-esteem is a risk factor for a broad range of psychological and behavioural problems[8]. Numerous studies have identified that exercise can have positive effects on self esteem for men and women of all ages, and as such sport can be used as a tool to increase self esteem.

Self esteem in adults was measured using the renowned Rosenberg 'Self-Esteem Scale'. This is a brief and unidimensional measure of global self-esteem. The Rosenberg Self-Esteem Scale has demonstrated good reliability and validity across a large number of different sample groups. It consists of 10 statements related to overall feelings of self-worth or self-acceptance. The items are answered on a four-point scale ranging from strongly agree to strongly disagree. Self esteem was measured by summing the ratings assigned to all the items after reverse scoring the positively worded items. As such scores ranged from a low of 10 (a score of 1 for all 10 questions) to a high of 40 (a score of 4 for all 10 questions).

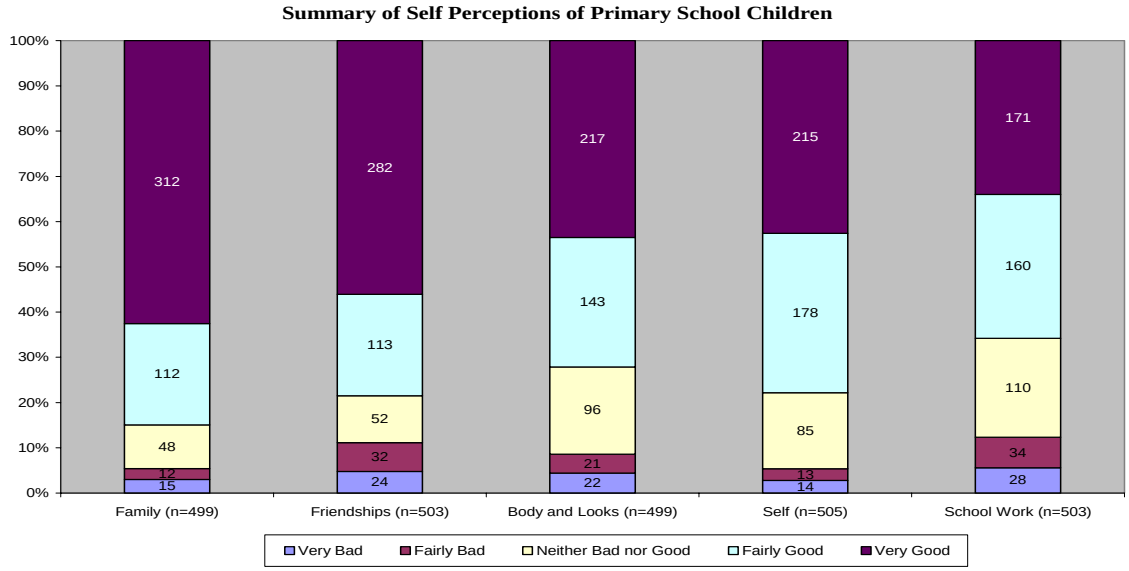
Self esteem was measured slightly differently for adults and children within this research, due to moral and ethical implications. Children were asked basic questions relating to how they feel about themselves; responses were measured on a 5-point Likert scale ranging from very bad to very good. This was based on an adapted version of the Rosenberg scale which was more easily understandable to the children surveyed.

Self perceptions held by primary school respondents were predominantly positive, with family and friendships viewed the most positively, followed by body, looks and self, then

[8] Self-esteem: The costs and causes of low self-worth. Nicholas Emler, 2001.

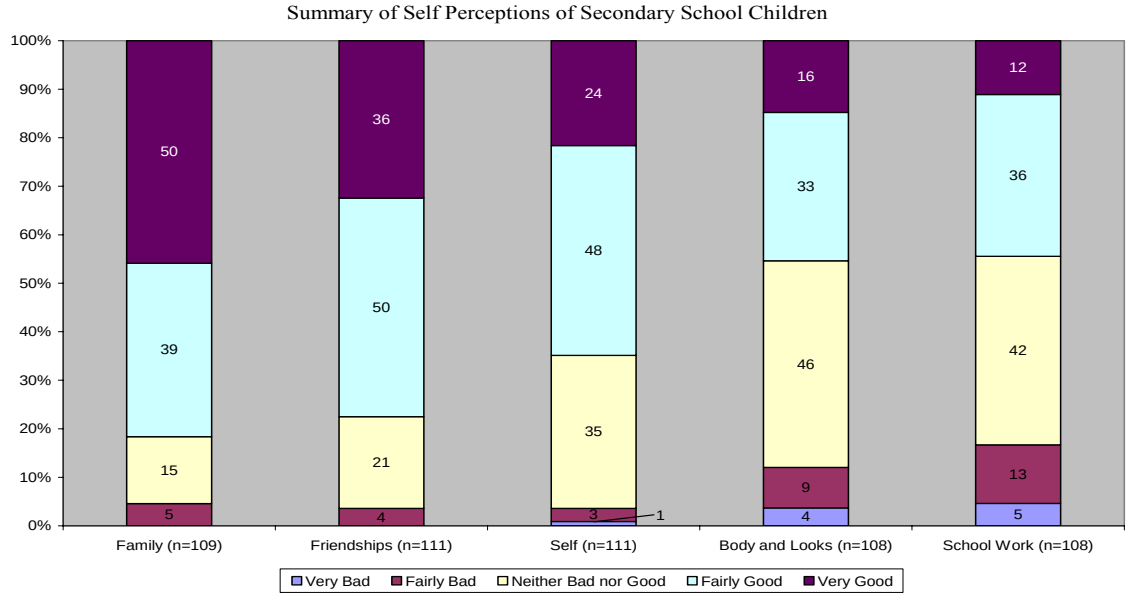
school work. Over 62% of respondents described relationships with their families as very good, with a further 22% describing these relationships as fairly good. The highest level of bad feelings were associated with school work, however these were only expressed by a minority of respondents (12% described how they felt about school work as fairly or very bad).

Graph 3.19: Self Perceptions - Primary school respondents



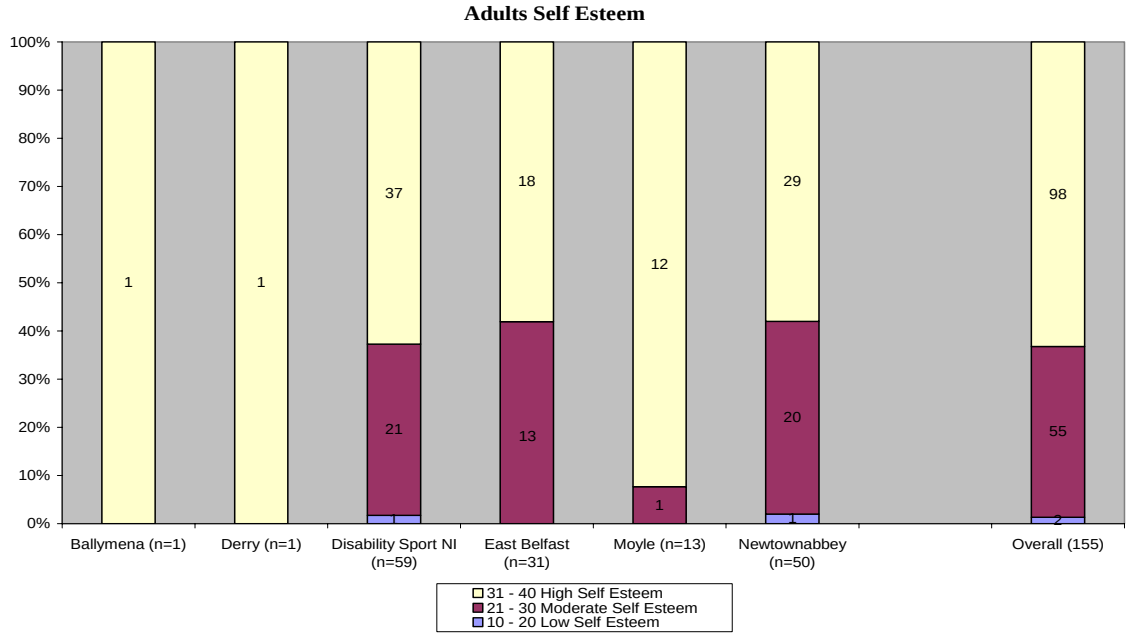
Graph 3.20 illustrated how secondary school children felt about themselves. In comparison to primary school perceptions, these results showed fewer respondents who were very happy with their lives, but a higher proportion of respondents who were fairly happy and a greater expression of neutral responses. There was no significant difference in the number of primary and secondary children describing aspects of their lives as fairly or very bad, it was marginal in all cases.

Graph 3.20: Self Perceptions - Secondary school respondents



Continuing with this positive trend, adults had relatively high levels of self esteem, with 63% rating between 31 and 40, which is classified as high self esteem, and 35% rating between 21 and 30, which equates to moderate self esteem. Only two individuals were classified as having low self esteem.

Graph 3.21: Adult Self Esteem



3.8. Key Findings

Analysis of the CSP participant surveys completed in Phase I of this research brought us to the conclusion that the majority of CSP participants were fitter, healthier and had higher self esteem than the average population of both Northern Ireland specifically and the UK as a whole. More specifically, the adults and children monitored in Phase I engaged in more frequent and intensive physical activity, had lower BMI values, ate more healthily, consumed less alcohol and tobacco and had higher social capital than the average UK population.

These findings were a stark contrast to those that were expected. It is widely accepted that people living within areas of higher social deprivation are on average less healthy, less physically active and have lower social capital and self esteem, than those living in more affluent areas. It was therefore predicted that CSP participants would engage in low levels of physical activity, have low perceptions of health, fitness and weight, consume high levels of alcohol and tobacco, have low levels of fruit and vegetable consumption, and have low self esteem and social capital. This research has shown that in this case the opposite of these assumptions were true, the CSP participants were of above average health.

- The current guidance regarding the recommended amount of physical activity from the Chief Medical Officer is at least 30 minutes of exercise per day, 5 times per week. The Northern Ireland Health and Social Wellbeing Survey reported that just 28% of all adults in Northern Ireland had taken the recommended level of physical activity. Overall, survey respondents took part in physical activity on an average of 5.6 days in the week prior to the interview. On average this constituted 12.1 hours of physical activity per week. It is clear that CSP participants were exceeding the

recommended physical activity guidelines by a significant margin. Whilst analysis by survey types and interventions identified some variance in the frequency and duration of participation by survey respondents (for example we can derive that adults engage in less physical activity than children) in relative terms all survey the findings were extremely positive.

- The Department of Health (DH) recommends that a healthy diet should include at least five portions of a variety of fruit and vegetables (excluding potatoes) a day. The Northern Ireland Health Promotion Survey in 2001 showed that on average 19% of adults consumed the recommended level of fruit and vegetables. Overall analysis of the fruit and vegetable intake by both adults and children in the sample indicates very high consumption, an average of 4.42 portions per day. The average consumption for the overall sample was below the recommended intake of five portions of fruit and vegetables per day, but compared very favourably with the UK averages.

- Government guidelines recommend that women should not consume more than 14 units per week, and men no more than 21 units. In Northern Ireland, 37% of men and 20% of women exceed the recommended level of alcohol consumption. Only 2% of both male and female survey respondents reported consumption at this level, significantly below the national averages. These benchmarks enable us to conclude that the levels of alcohol consumption identified within this survey are significantly lower than UK averages, and are well within the recommended guidelines for 'responsible' consumption.

- Northern Ireland's Health and Lifestyle Survey (2002) identified that 22% of respondents were current smokers. In 2002 10% of secondary school children aged 11-15 in England were regular smokers. Our research findings showed that 18% of adults and 5% of secondary school respondents were smokers in the sample, clearly well below the UK average.

- Measuring the social capital in communities can be achieved through establishing levels of trust, membership of groups and associations and assessing social networks. The General Household Survey (2000) found that (46%) of people said that they knew most or many people in their neighbourhood, while more than half (58%) felt they could trust most or many people in their neighbourhood. The survey of CSP adult participants identified that 72% of respondents knew people within their community, and that 82% had some level of trust for their neighbours. Furthermore, a high proportion of adults were active members of clubs and associations, particularly sports, hobby and leisure clubs and religious associations.

- Self perceptions held by primary and secondary school respondents were predominantly positive. Over 62% of primary school respondents described relationships with their families as very good, with a further 22% describing these as fairly good. Positive relationships with friends, and positive perceptions relating to body, looks and self were also identified. Adults had relatively high levels of self esteem, with 63% rating between 31 and 41 (high self esteem) and 35% rating between 21 and 30 (moderate self esteem). Only 2 individuals within the adult sample were classified as having low self esteem.

One of the CSP aims is to increase levels of sustained participation in areas of high social and economic deprivation and among groups traditionally marginalised through the development and delivery of programmes. It is widely accepted that people living within areas of higher social deprivation are on average less healthy than those living in more affluent areas. They would be expected to participate in less physical activity and have lower self esteem and social capital.

It is our view that the respondents to the three surveys of participants on the Community Sport Programme were not necessarily those at whom the programme was directed. In marketing terms what appears to have happened is 'market penetration' (existing customers making more intensive use of existing products) rather than 'market development' (new customers for existing products). This is a common problem with community based interventions.

However, the people who did respond to the survey can justifiably be held up as examples of the potential benefits of sport and physical activity. The key challenge for the CSP is to test whether it is possible to deliver interventions with people who are not currently engaged in sport and physical activity and to establish whether their scores on the indicators used in this research are below average at the start of the intervention. Having then followed some sort of sport or physical activity based intervention via the CSP, it will be interesting to discover if there has been an 'improvement' in scores, and if so, whether this improvement can be attributed to the effects of the programme concerned.

Phase II of the research conducted re-tests with the sample of 777 respondents from Phase I in November and December 2005. Thus this report should be regarded as a baseline and partial view of the CSP. From the 'before' and 'after' data presented in the section that follows a more comprehensive assessment can be made of the impact of the pilot projects. However, given the nature of the respondents, who might be regarded already as 'model citizens', it is difficult to see how further improvement on the key indicators can be achieved.

4. PHASE II RESULTS

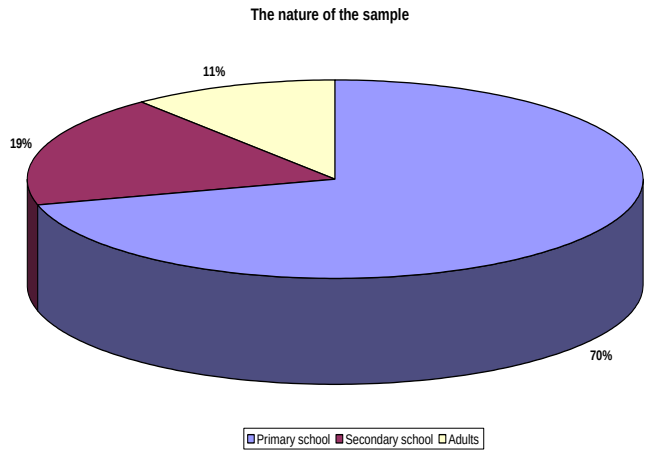
This section presents detailed analysis of the Phase II survey findings. The analysis is presented in seven sections each covering a specific area of investigation on the survey questionnaire.

There are 400 respondents for which both Phase I and II data were collected. As a result the Phase II research takes the format of analysing 400 'matched pairs'. Responses from the same 400 people are measured at two time points (approximately six months apart). This enables a 'before and after' analysis of any change that has occurred between Phase I and Phase II.

In order to illustrate this change three sets of results are presented in each graph. First, the results of the Phase I survey (incorporating 777 participants) are presented to provide an internal baseline figure. Second, the Phase I results for the 400 respondents that completed both the Phase I and Phase II surveys are shown (this will be labelled as Phase 1 'Matched Pairs n=400'). Third, the Phase II results based on the sample of the same 400 respondents will illustrate the effect of the intervention (labelled as Phase 2 n=400).

To enable accurate interpretation of the Phase II results it is important to consider both the nature of the sample and the degree of involvement of CSP participants as discussed in detail in section 2.

Figure 4.1: Nature of the sample



The sample consists predominantly of primary school children (70%) with the remaining 30% made of secondary school children (19%) and adults (11%).

In terms of the degree of involvement, only 3% (8 / 268) of primary school respondents, one secondary school respondent and seven adults have participated in CSP activities on more than five occasions in the last six months.

Furthermore 15% of respondents have not participated in any CSP activities over the last six months. It is important to have a clear picture of this contextual information in order to enable accurate interpretation of the Phase II results.

4.1. Physical Activity

Physical Activity - Overall

Participation in physical activity was measured by respondents reporting the number of days per week and the number of hours per week that they participated in various types of activity. This enables analysis of both the frequency and intensity of participation.

Children's physical activity was classified into 'sport', 'exercise or active play' and 'jobs around the home'. Physical activity undertaken by adults was categorised into 'vigorous activity', 'moderate activity' and 'walking'. This enables the measurement of all activities that are likely to raise an individual's heart rate and impact positively on their cardiovascular fitness.

To put these findings into context it should be noted that the current guidance regarding the recommended amount of physical activity from the Chief Medical Officer is at least 30 minutes of moderate intensity exercise five times per week for adults, and one hour of physical activity per day for children.

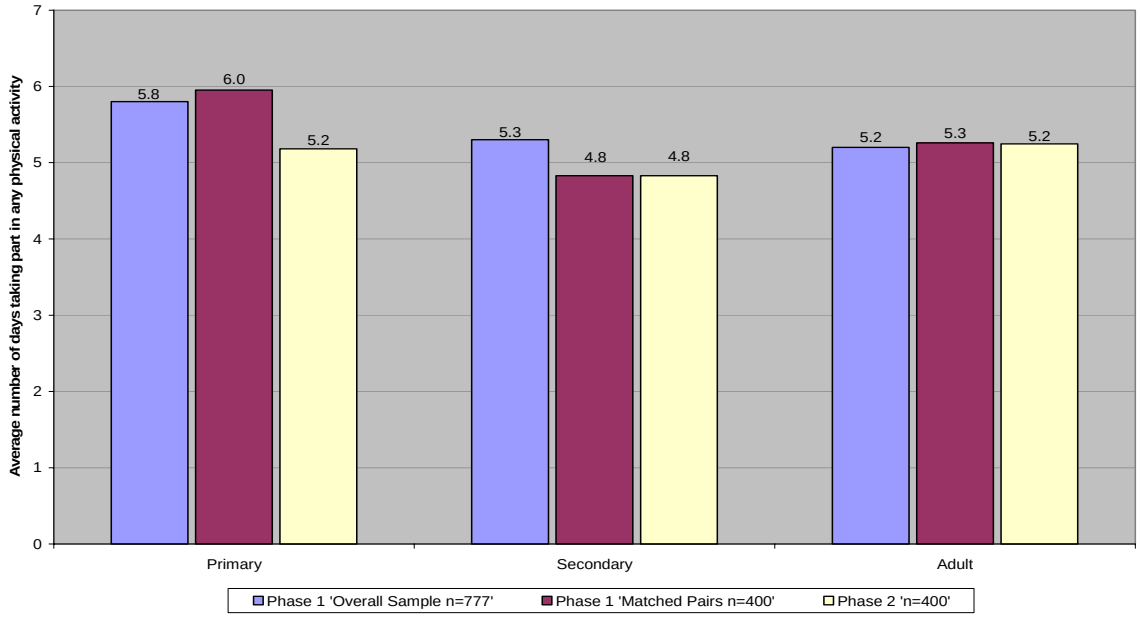
The Phase II survey findings are now presented. Whilst the results do not identify an increase in physical activity levels, this is not surprising given the overall degree of involvement in the CSP and the very high levels of physical activity identified in Phase I. It is important to consider that in all cases the results highlight that participants take part in significantly more exercise than the current government recommendations. In addition to this, it is also important to consider that the exceptionally high levels of physical activity that were identified in Phase I resulted in limited scope for further improvements.

The Phase I survey found that the average number of days on which respondents took part in physical activity was 5.6 days. This is above the recommended levels and consequently there is limited scope for improvements to be made. The equivalent average for respondents in Phase II survey is 5.2 days, this small decrease is not significant and may be a consequence of seasonal factors. The overall average remains significantly above the recommended guidelines.

On average, the Phase I respondents engaged in 12.1 hours of physical activity per week, this reduced to 11.9 hours for the Phase II survey. Again it is important to note that this represents an exceptionally high level of physical activity and there has been a significant change over the period. The marginal reduction, of 12 minutes each week, is negligible when seasonal factors such as the reduced hours of daylight during Phase II (Dec / Jan) are factored into this analysis.

Analysis by survey type tells us that the average number of days on which respondents participate in physical activity is 5.2 for primary school children, 4.8 for secondary school children, and 5.2 for adults. This does not vary significantly from the Phase I data. Graph 4.1 illustrates these marginal changes in the frequency of participation across the three age groups.

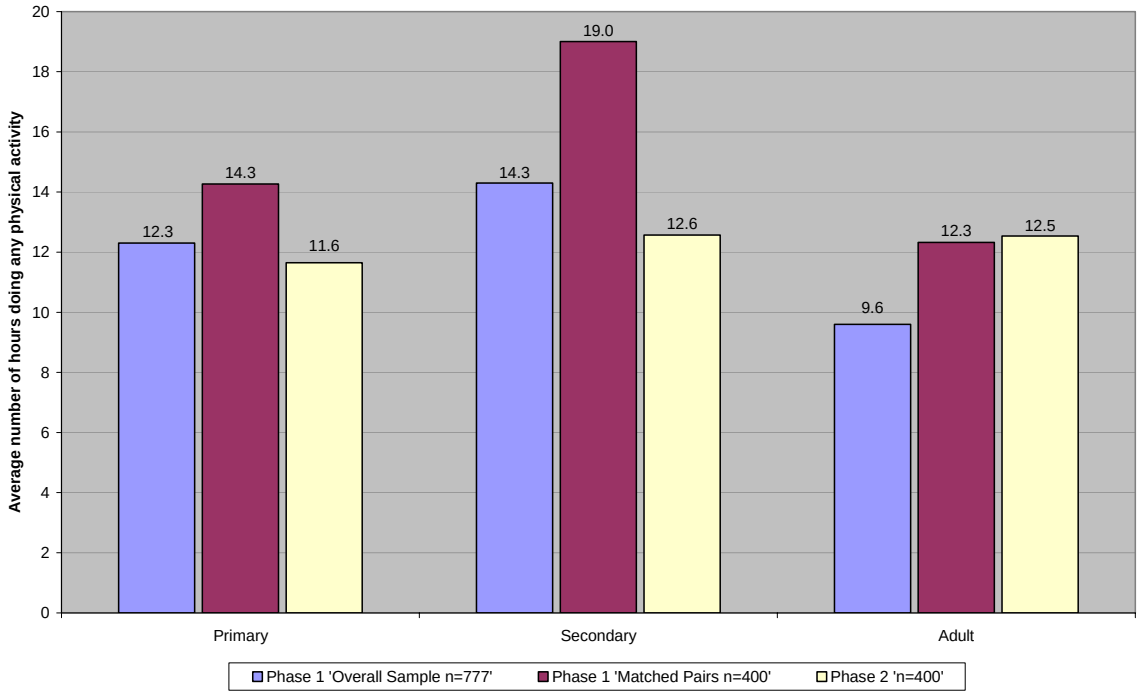
Graph 4.1: Frequency of participation - activity days per week



There is a slight decrease in the amount of days on which primary school children undertake physical activity (from 6 days to 5.2 days) however this is likely to be a result of seasonal factors. Other than this slight fluctuation, the number of days on which respondents participated in sport and physical activity remains constant across the age groups.

The mean amount of time per week spent taking part in physical activity is 11.9 hours overall: 11.6 hours for primary school children, 12.6 hours for secondary school children and 12.5 hours for adults. Graph 4.2 illustrates the duration of participation by age group.

Graph 4.2: Intensity of participation - activity hours per week



There are some noteworthy changes between the Phase I and II data.

- Within each age group there is an increase between the original Phase II data (based on 777 respondents) and the Phase II data based on the 400 'matched pairs'. This indicates that the 400 respondents that completed a questionnaire for both Phase I and II participated in physical activity on a more intensive basis than those who 'dropped out' of the Phase II research (indicative of systematic attrition).

- The number of physical activity hours for primary and secondary school respondents has declined between Phase I and II, this is likely to be a consequence of the limited daylight hours associated with Phase II, and less favourable weather in the winter compared with summer.

- There has been a slight increase in the number of hours that adults spend participating in physical activity, from 12.3 hours in Phase I to 12.5 hours in Phase II however this is not significant.

- The number of days on which both primary and secondary age respondents take part in 'sport', 'exercise or active play' and 'jobs around the home' did not increase between Phases I and II. The only exception to this was a small increase in the number of days on which secondary school respondents carried out jobs around the home (from 3 to 3.4 days).

Analysis of the Phase II survey highlights that the adults in the sample do not currently engage in less physical activity than the children, as was indicated by the Phase I survey based on all 777 participants. In the Phase I survey, the adults participated in an average of 9.6 hours of physical activity per week overall, this increased to 12.3 hours when isolating only those participants that had also completed a Phase II survey. A further increase to 12.5 hours is observed when comparing the 'before' and 'after' data for the same 400 participants.

The intensity of participation by respondents across all age groups is much higher when comparing the Phase I 'matched pairs' data with the Phase I 'overall' (n=777) data. This provides further evidence that the attrition of participants (particularly adults) is systematic in terms of the less active respondents dropping out of the research.

The key point of note when analysing all the physical activity data can be summarised as follows:

- The participation frequency and intensity identified through the Phase I survey was so high that it is difficult to envisage how significant positive change could have occurred.

- There is little difference between the physical activity levels of CSP participants as measured between Phase I and Phase I. The frequency and intensity of participation across all age groups as measured in the Phase II survey remains at an exceptionally high level, well above any prescribed norms.

- On average CSP participants take part in significantly more physical activity than the UK and NI populations overall and exceed the recommended physical activity

guidelines by a significant margin - this is highly commendable, but also suggests that the intervention has engaged the wrong people.

Further questions were asked to generate an overview of primary and secondary school respondents' participation, in relation to school sport at lunchtimes and after school, sport arranged outside of school, sport for fun and sports club membership.

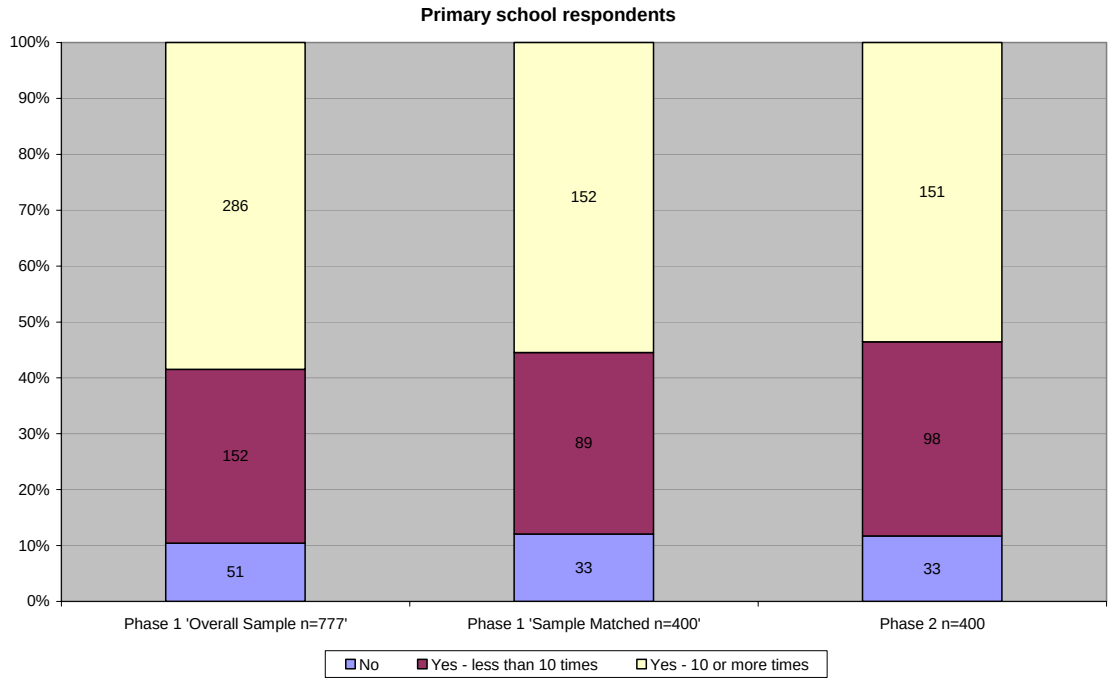
Primary school children - type of participation

Analysis of participation by primary school children highlighted consistency between the Phase I and II findings in relation to organised sport out of school, self organised sport for fun and membership of sports clubs.

The results revealed an increase in the number of individuals not taking part in lunchtime or after school sport. Whilst the number of people taking part ten or more times in the last three months was consistent across Phases I and II, there is a notable decrease in the number of people participating less than ten times and a subsequent increase in those not participating. This is likely to have been affected by the timing of the Phase II research, which would have incorporated both a half term break and the Christmas holiday period, thus reducing the amount of lunchtime and after school sport available.

The number of people participating in sport organised out of school on ten or more occasions in the last three months has remained in excess of 50%, with a further 20% participating less than ten times. In both Phase I and II research, 88% of respondents participated in sport for fun, with over 50% doing so on ten or more occasions within the past three months, as illustrated in Graph 4.3.

Graph 4.3: Have you played any sport for fun which you arranged yourself in the last three months?



Overall almost two thirds of all primary school respondents are members of a sports club. The sports club membership levels were almost identical between Phases I and II of this research (64% and 63% respectively).

Secondary school children - type of participation

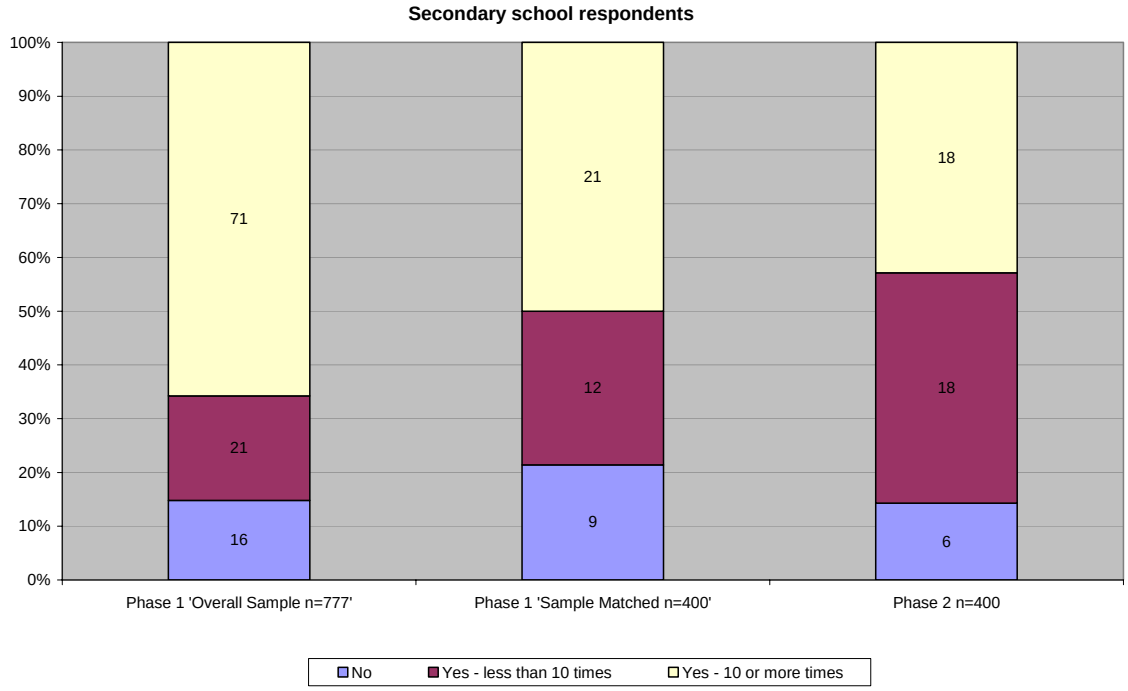
Analysis of participation by secondary school children highlighted a reasonable level of consistency between the Phase I and II findings in relation to lunchtime and after school sport, organised sport out of school, self organised sport for fun and sports club membership.

In terms of self organised 'sport for fun', the number of respondents taking part increased from 79% to 86%, as shown in Graph 4.4.

There is a slight increase in the number of individuals who were not undertaking lunchtime or after school sport and an increase in those participating on less than ten occasions, but a decrease in those taking part on ten or more occasions. Collectively this represents a slight decrease in the frequency of participation, which is likely to have been affected by the timing of the Phase II research (which would have incorporated holiday periods, thus reducing the amount of lunchtime and after school sport available). The frequency of participation in sport organised out of school has also decreased slightly with less people participating on ten or more occasions, but more people participating less than ten times.

Sports club membership amongst secondary school children has remained constant. In total 24 individuals were sports club members in both the Phase I and II research.

Graph 4.4: Have you played any sport for fun which you arranged yourself in the last three months?



In summary, it is important to remember that in all cases participation in physical activities is very high, and the majority of participants are exceeding the recommended guidelines from the Chief Medical Officer by a significant margin.

4.2. Perceptions of Health & Fitness

When questioned on their activity levels, 5.7% of primary school children, 16.7% of secondary school children and 10.8% of adults describe themselves as either fairly inactive or inactive. The negative perceptions of activity level have all increased in comparison to the Phase I results. This is most likely to be a consequence of the Phase II survey taking place during winter.

Children believe themselves to be the most active, with 38% of both primary and secondary age respondents describing themselves as very active (compared with less than one quarter of adults). In contrast to the increased negative perceptions of those describing themselves as inactive, there is an increase in the proportion of both secondary age respondents and adults describing themselves as very active. The majority of respondents (80%+) view their fitness as average or above, this figure has decreased from 90%+ in Phase I.

Perceived fitness levels mirror the activity level findings. Only a minority of respondents of all ages believe themselves to be either fairly unfit or very unfit (18.6% of secondary school respondents, 13.5% of adult respondents, and 3.9% of primary school respondents). As with the activity levels, the majority of respondents (80%+) view their level of fitness as average or above.

There are slight variations in the perceptions of respondents in relation to their health, some positive and others negative.

- There is an increase in primary school respondents describing their health as average, but fewer respondents describing themselves as fairly or very healthy.

- Fewer secondary school age respondents describe themselves as fairly unhealthy when compared with the Phase I data. A greater number of secondary school respondents indicate that they are fairly healthy, with fewer respondents indicating that they are very healthy, in comparison to Phase I.

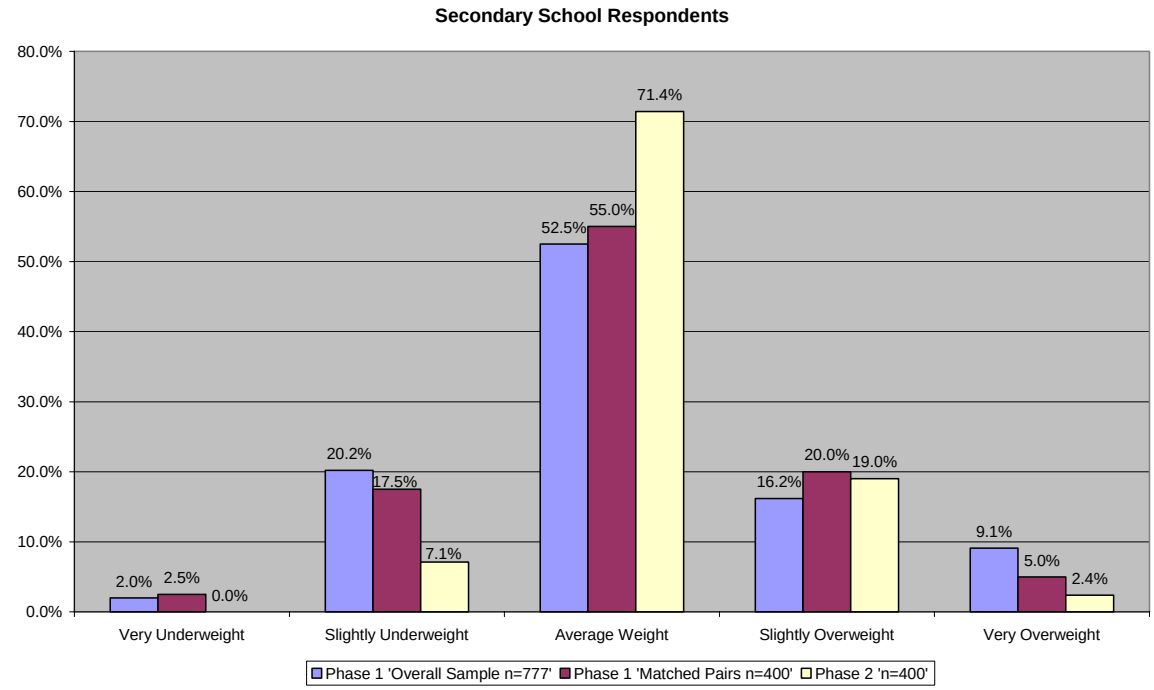
- A majority of adults (76%) perceive themselves to be either in average health or fairly healthy (compared with 74% in Phase I). However, there is a marginal increase in respondents describing themselves as fairly or very unhealthy, and a decrease in participants who perceive their health status as 'very healthy'.

Supplementary to these health findings, analysis of the data relating to participant perceptions of their weight was undertaken. In terms of changes between Phase I and Phase II data, a lower proportion of primary school children report being underweight, these individuals appear to have re-classified their weight as average. This was also evident in the secondary school survey. In addition to this there are slight decreases in the number of secondary school age respondents describing themselves as slightly or very overweight, as shown below in Graph 4.5. Fewer adult respondents perceive themselves to be slightly overweight, with an increase in those describing themselves as of average weight.

It is important to bear in mind that these measurements are participant perceptions and as such may not relate to actual changes in the health, fitness and activity levels of

participants, or to actual variations in weight. Actual physiological changes will be identified through analysis of participant testing which is summarised in section 5.

Graph 4.5: Weight perceptions



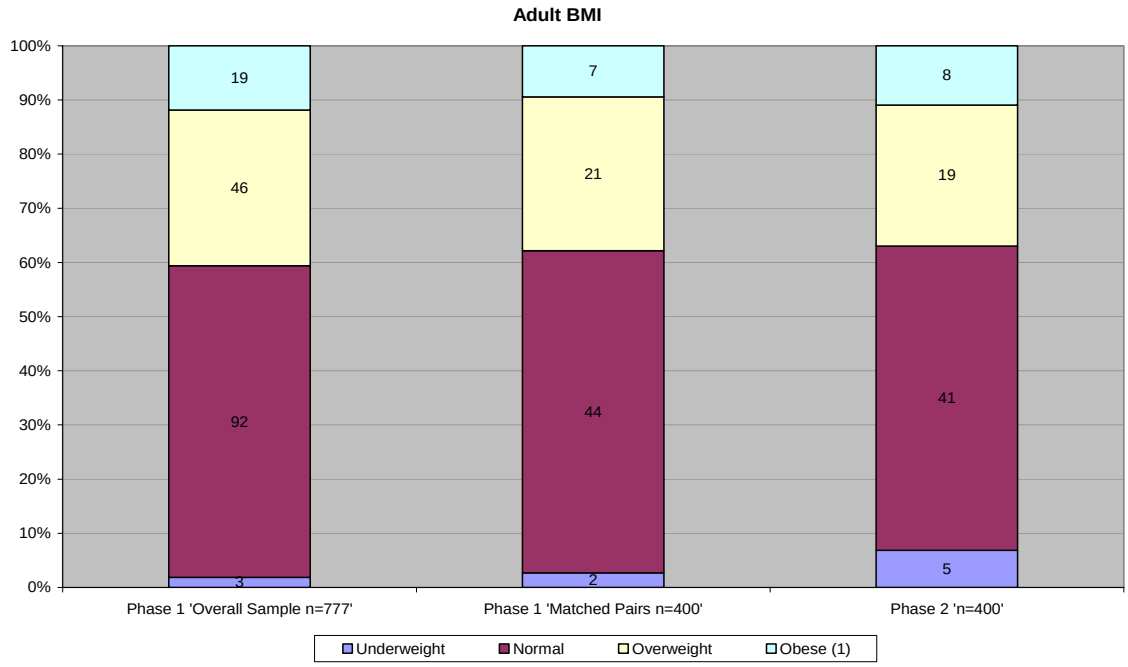
4.3. Body Mass Index (BMI)

The results of BMI analysis are discussed by age category. BMI for children, also referred to as BMI-for-age, is plotted on gender specific growth charts to enable correct interpretation. As described in detail in section 3, the interpretation of the BMI measurements for primary and secondary school children can take into account the age of each subject but cannot take into consideration all possible changes in variables (e.g. growth spurts).

Analysis of the BMI data for primary school children identified a slight increase in the number of children classified as either overweight or at risk of being overweight (from 26% in Phase I to 31% in Phase II). The same trend is identified within secondary school respondents, with the proportion of respondents 'at risk of becoming overweight' increasing from 18% to 27% (with a further individual classed as overweight.) In addition, there is a decrease in the number of underweight secondary school children (from 13% to 5%). Overall in excess of 60% of both primary and secondary school respondents had normal BMI, with less than one third of respondents either classified as overweight or at risk of being overweight.

Adult BMI profiles (shown in Graph 4.6) differed to those of primary and secondary school children. In contrast to the secondary school survey findings, the number of adults in the underweight category increased marginally.

Graph 4.6: Adult respondents - BMI



A higher proportion of adult respondents are classed as overweight (described as either overweight or obese) than primary and secondary respondents. In total 37% of adults are in the overweight categories compared with 31% of primary and 29% of secondary children. The proportion of adults classified as underweight increased slightly in the Phase II research.

4.4. Healthy Eating

Respondents were asked to provide details on the amount of fruit and vegetables they had consumed on the day before completing the Phase II questionnaire.

A consideration for children and adults alike is that research has shown that people's perceptions of their food consumption are very different to their actual consumption. Previous studies have concluded that people generally over-estimate their consumption (refer to the Phase I results in section 3 for further details).

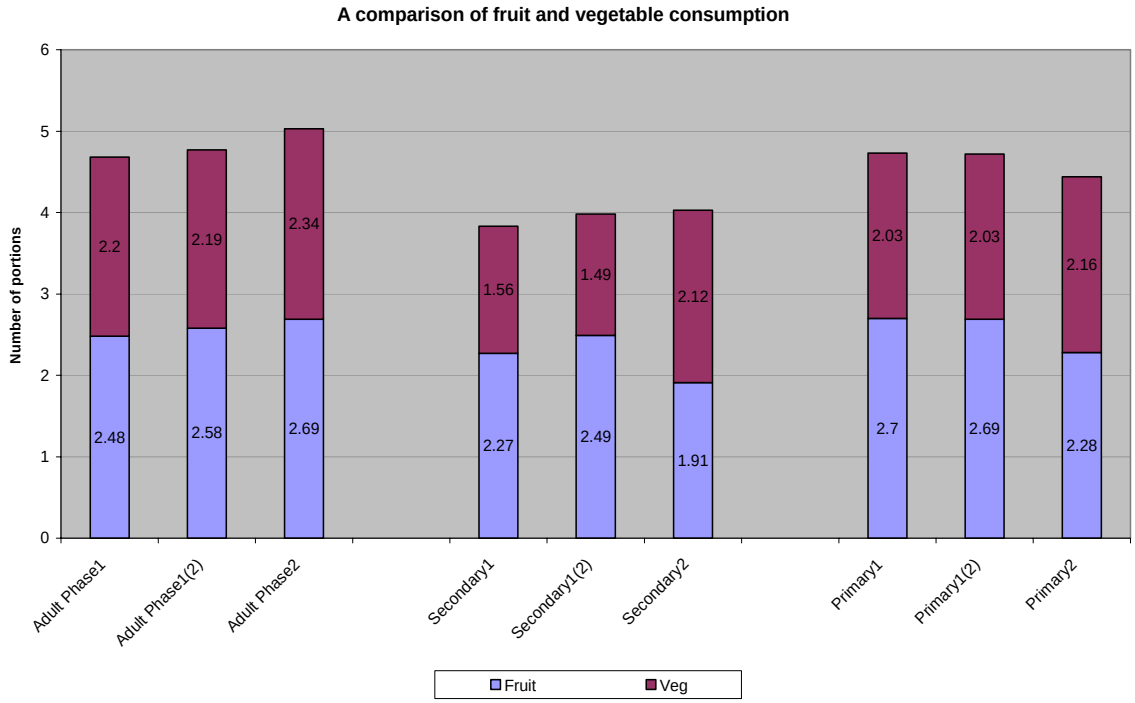
As this survey question was taking a snapshot in time (one day's consumption) further information on typical consumption was also sought to validate these findings. Specifically respondents were asked to what extent their daily consumption as reported via the questionnaire represented a typical day's consumption. Respondents were requested to state whether they consumed more or less fruit and vegetables on the day in question or whether their consumption represented a typical day.

A comparison of typical consumption between the Phase I and II research, highlighted that more primary and secondary school respondents reported average consumption on the day in question. For primary school respondents, the proportion of respondents indicating consumption that was 'the same amount as usual' had increased from 48% to 59%, for secondary school respondents this had increased from 55% to 71%. In both cases the proportion of respondents reporting that their consumption was 'less than usual' decreased correspondingly. This pattern is also observed in the consumption of fruit by secondary

school respondents. These findings suggest that the recorded levels of consumption were more typical of a participant's 'average' day than in the Phase I research this is further evidence of systematic bias.

The fruit and vegetable consumption by adults and children in the sample is very high as shown in Graph 4.7. The average consumption of fruit and vegetables for the overall sample was 4.5 portions per day. This overall average is below the recommended intake of five portions of fruit and vegetables per day, but compares very favourably with the UK and NI averages for consumption (as highlighted in section 3). There is a marginal overall increase from Phase I.

Graph 4.7: Overall Consumption of Fruit and Vegetables



The fruit and vegetable consumption by adults and secondary school respondents has increased from the levels recorded in Phase I. In Phase II, adult consumption has increased sufficiently to exceed the daily recommendation of five portions (the average adult consumption was 4.7 portions in Phase I). Secondary school average consumption has increased to over 4 portions per day. The consumption of fruit and vegetables by primary school children has declined marginally.

In summary, it is clear that both adults and children are eating far more fruit and vegetables than the UK average (see section 3 for further details). Whilst overall consumption falls slightly short of the recommended 5 portions of fruit and vegetables per day, consumption approaching this benchmark is highly commendable.

4.5. Drinking & Smoking Habits

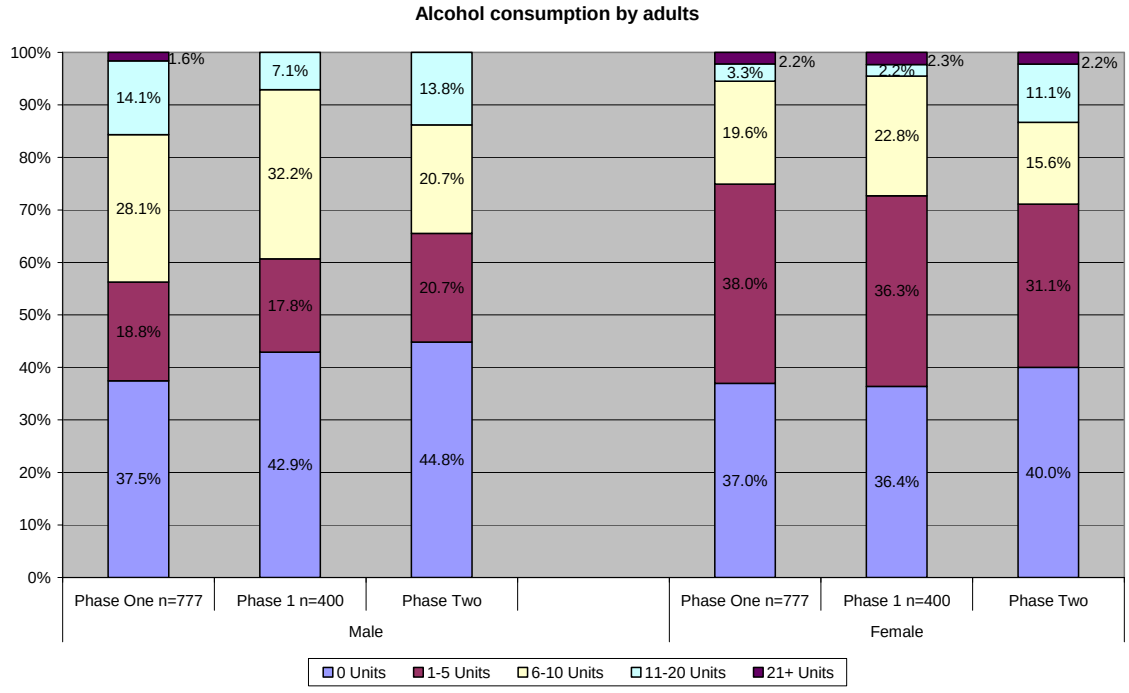
Questions relating to alcohol consumption were excluded from the primary school survey, hence the overall sample size for these questions is reduced to 117. Overall, 57% of adults and 7% of secondary school children have consumed alcohol in the week prior to completing the questionnaire.

In total, 74 adults have consumed alcohol in the past week, with an average consumption of seven units. Overall 45% of male and 40% of female adults have not consumed any alcohol during the preceding week, this represents a slight positive increase from 37% in Phase I.

Only three secondary school respondents (7% of the sample) consumed alcohol in the week prior to completing the questionnaire. These respondents have consumed alcohol on either one or two days in the week in question and reported individual consumption of 2 units, 12.5 units and 50 units respectively.

Alcohol consumption has also been analysed by gender. It is important to note that the sample is not split evenly by gender and incorporates 29 males (39%) and 45 females (61%). This analysis has only been undertaken for adults due to the small sample size of secondary school children who consume any alcohol. Graph 4.8 provides a synopsis of this data, which is then discussed in conjunction with national data on alcohol consumption to put these findings into context.

Graph 4.8: Alcohol Consumption by Gender



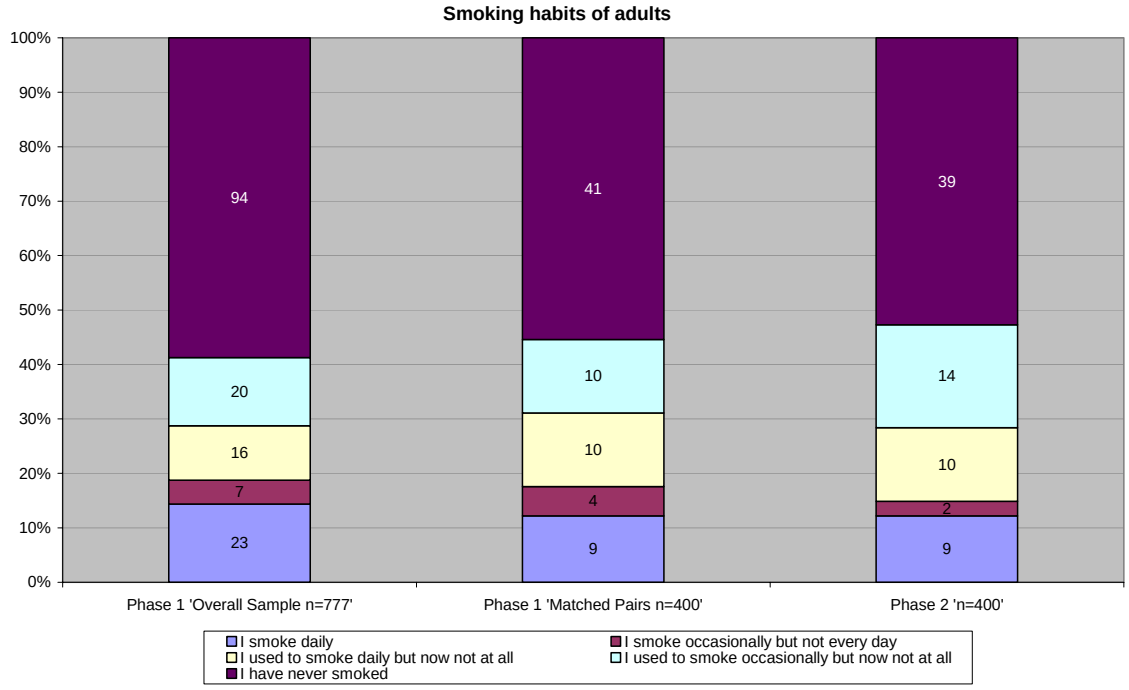
The number of respondents who did not consume alcohol was equally split by gender in the Phase I research. This increased for both genders in Phase II, with the most noticeable increase in non-drinkers being amongst adult males. In addition, a greater proportion of females report weekly alcohol consumption of between 1 and 5 units, with more males consuming between 6 and 20 units. There appears to be a sharp increase in the number of women drinking between 11 and 20 units per week, however in absolute terms this 11.1% equates to only five women.

Department of Health statistics reveal that on average 30% of men and 16% of women drink 21 or more units of alcohol per week. In Northern Ireland, 37% of men and 20% of

women exceed the recommended level of alcohol consumption[9]. As illustrated in Graph 4.8, no male respondents and very few females reported consumption at this level, significantly below the national averages. The use of such benchmarks imply that the levels of alcohol consumption identified within this survey is significantly lower than might be expected and well within the recommended guidelines for 'responsible' consumption.

This lifestyle analysis was extended to incorporate smoking habits (for adults and secondary school children only). The consumption of tobacco by adults is illustrated in Graph 4.9. There are only four secondary school respondents who smoked tobacco, one was an occasional smoker and three individuals smoke on a daily basis. Further analysis cannot be undertaken due to the small sample size.

Graph 4.9: Smoking Habits



Overall, more than half of adult respondents have never smoked. Nine individuals (12%) smoke on a daily basis, with a further 3% stating that they smoke occasionally. To contextualise this, 85% of the adults surveyed do not currently smoke. This is a positive increase from the original Phase I survey in which 80% of the sample did not smoke. A further decrease in the number of smokers is evident through analysis of the 'matched pair' samples for Phase I and I, whilst the number of daily smokers has remained consistent, two individuals have ceased occasional smoking and have subsequently re-classified themselves as non-smokers.

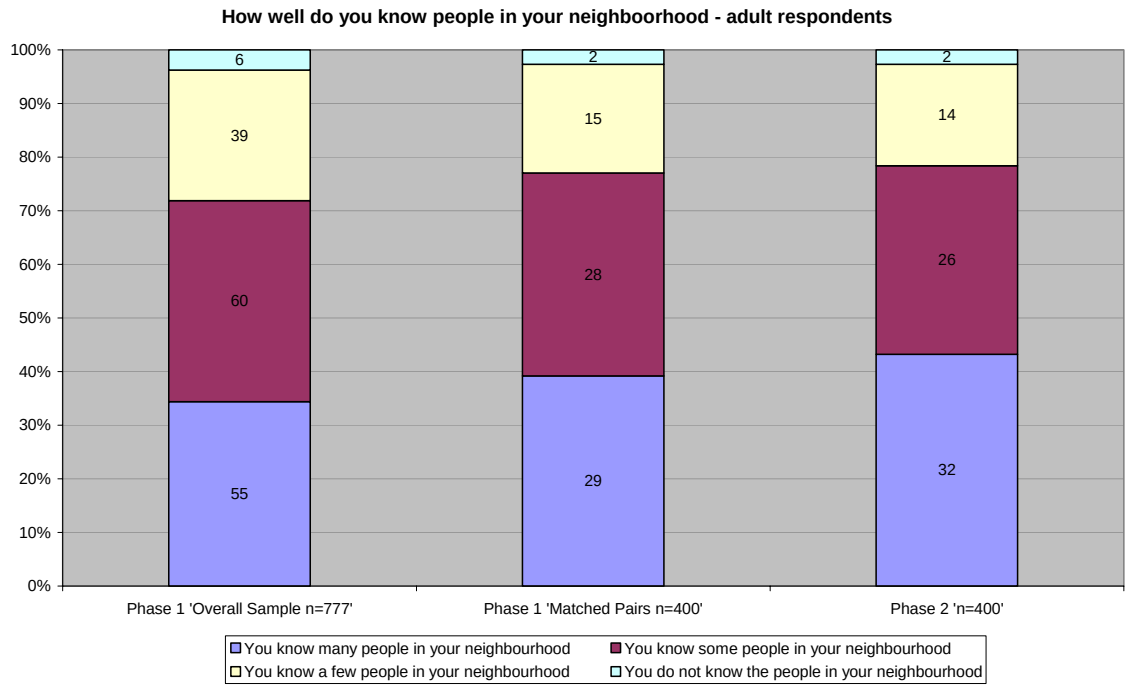
In Northern Ireland's Health and Lifestyle Survey (2002) 22% of adults were current smokers. Our research findings show that 15% of adults are smokers in the sample, clearly well below the national average.

[9] Adult drinking patterns in Northern Ireland, December 2002, HPA.

4.6. Social Capital - Your Local Community

Measuring the social capital in communities is achieved through establishing levels of trust, membership of groups and associations and assessing social networks.

Graph 4.10: How well do you know the people in your neighbourhood?



Graph 4.10 provides a time series comparison of the extent to which adult respondents know members of their local community. The proportion of adult respondents reporting that they knew 'many people' within their neighbourhood increased from 34% in the original Phase I survey, to 39% of the Phase I matched pairs sample, and 43% of the Phase II survey. There appears to be a link between participant attrition and social capital in terms of the Phase I matched pairs sample incorporating a greater proportion of respondents knowing 'many people' in their neighbourhood and less respondents knowing just 'a few people' or 'not knowing anybody' in their neighbourhood, compared with the Phase I overall sample. There is also an increase in the proportion of secondary school respondents who know 'many' people; up from 72% in the Phase I matched pairs sample to 77% in the Phase II survey.

As identified in the Phase I report a much higher proportion of both primary and secondary school children knew 'many' people than was identified amongst the adult respondents, this trend continued in the Phase II research. Primary school children appear to have very strong connection within their local community, as you could reasonably expect for children of these ages. This is a likely consequence of the importance of school and the local network of peers generated through this forum, and the accepted tradition of playing with friends of a similar age that live on the same street or within the immediate surroundings. In total 72% of primary school children know 'many' people in their local neighbourhood, this figure has decreased marginally from 76% in Phase II.

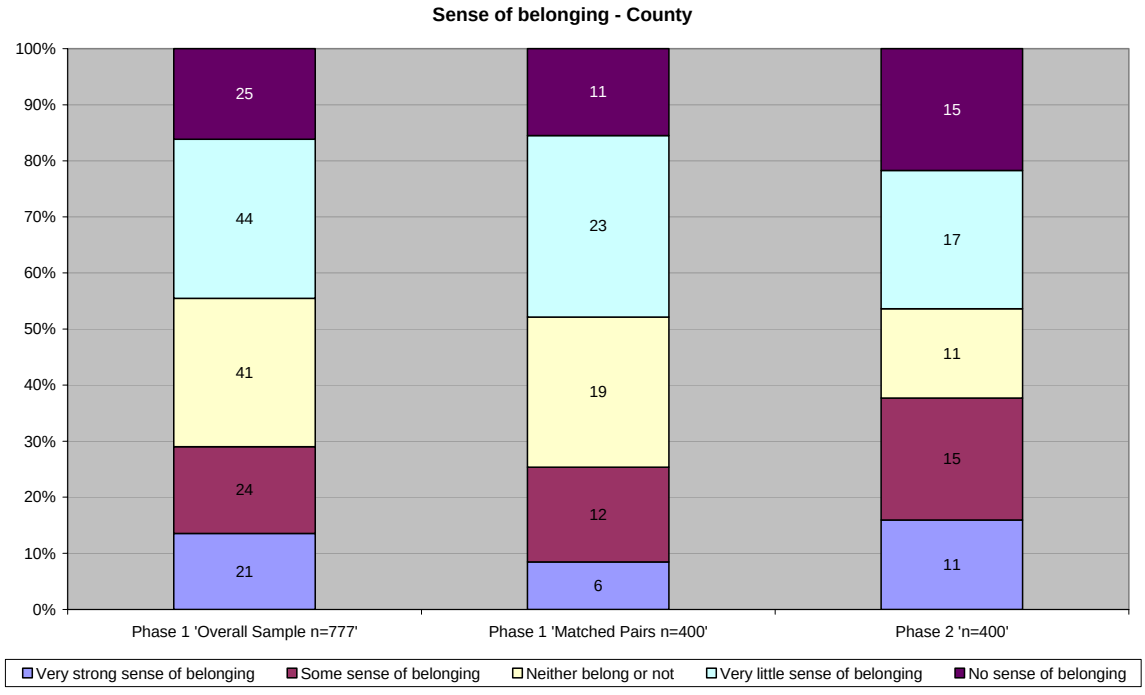
Further to the social network data, 85% of primary school children in the sample have 'some' friends in their local area. The proportion of respondents having 'all' their friends

living locally has decreased from 21% to 12%, however the number of respondents having some of their friends living locally has increased proportionately. The majority of secondary school respondents (93%) have some friends in their local area. This was consistent with the Phase I survey findings.

Adult respondents were asked to express how strong their sense of belonging is on a local, regional and national basis. In accordance with the Phase I results, respondents expressed the strongest sense of belonging in relation to their neighbourhood. The proportion of respondents expressing at least some sense of belonging has marginally increased from 55% in Phase I to 59% in Phase II. The proportion of respondents expressing that they felt either 'very little' or 'no' sense of belonging to their neighbourhood is unchanged at 19%.

In total 48% of adult respondents report either some sense of belonging or a strong sense of belonging to their local area, this has increased marginally. In terms of feeling a sense of belonging to their county, the proportion of positive responses has increased with 38% feeling either some sense of belonging or a very strong sense of belonging. This has increased from 25% of the Phase I 'matched pairs' sample, and 29% of the original Phase I survey sample. In contrast to this, a higher number of respondents expressed that they felt no sense of belonging to their county; these trends are illustrated in Graph 4.11 shown below.

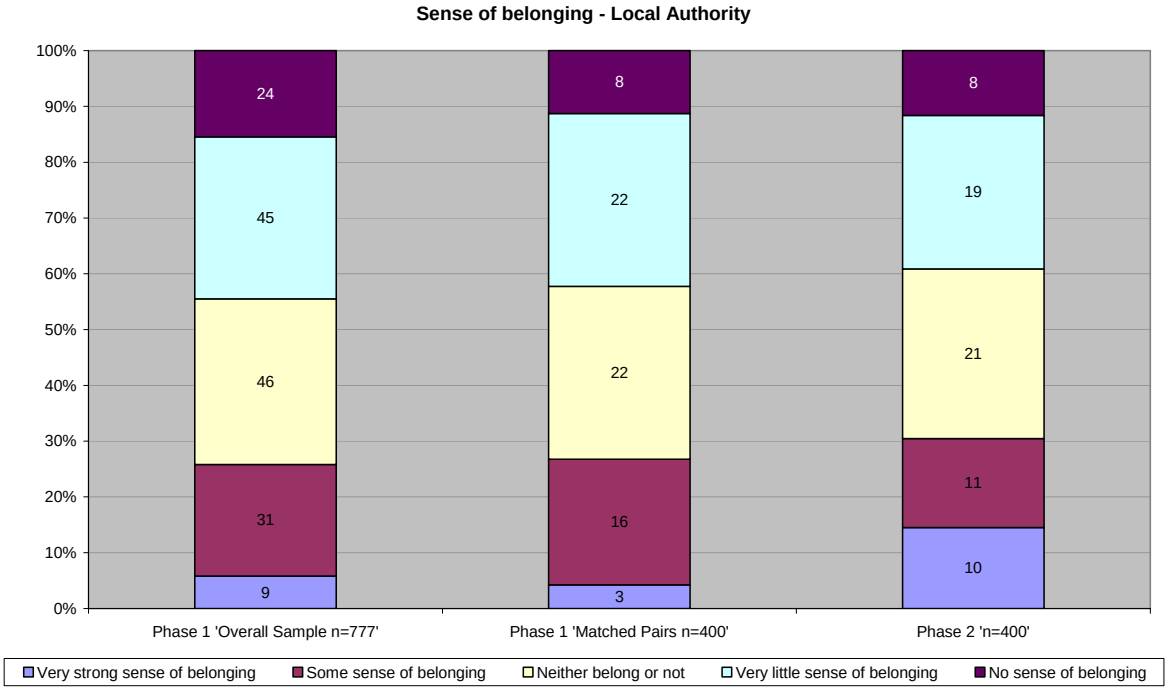
Graph 4.11: Sense of belonging - County



In total 25% of respondents feel a strong sense of belonging to Northern Ireland, with a further 17% expressing some sense of belonging. On the contrary, a further 23% of people report feeling no sense of belonging to Northern Ireland, with 17% expressing very little sense of belonging. There are fewer respondents expressing a neutral view with more people expressing a strong sense of belonging, and in contrast to this, more people expressing a very low sense of belonging than in the Phase I survey.

A further increase in terms of the proportion of respondents feeling a strong sense of belonging to their Local Authority has been identified. In absolute terms this represents an increase of seven individuals in the 'matched pairs' sample that have developed their sense of belonging from 'some' to a 'strong sense' between the Phase I and Phase II surveys. This change is illustrated by Graph 4.12.

Graph 4.12: Sense of belonging - Local Authority



Adult respondents were asked to consider all the people that live in their neighbourhood and give their opinions on whether they felt that people within their community were trustworthy. The proportion of respondents stating that none of the people in their neighbourhood could be trusted has remained constant at 1%. The proportion of respondents who felt that some of the people in their neighbourhood could be trusted has increased from 46% in the Phase I survey to 51% in the Phase II survey. There has been a marginal increase in the number of respondents expressing that most people in their neighbourhood could be trusted from 35% to 39% in Phase II. This equates to an overall expression of trust by 90% of respondents (an increase from 82% in Phase I.)

To put these findings into a UK context, 'neighbourliness' was measured within the General Household Survey (2000). Just under half of people (46%) said that they knew most or many people in their neighbourhood, while more than half (58%) felt they could trust most or many people in their neighbourhood. Whilst not directly comparable (our findings measure 'many/some' rather than 'many/most'), with regards to neighbourliness the survey findings are very positive and show that 77% of respondents know people within their community, and that 90% have some level of trust for their neighbours. These figures both show a marginal increase from Phase I. This is commendable given that the Phase I report commented on the very positive nature of these findings and noted how it would be difficult to achieve any further improvement.

Adults were also asked to specify the extent of their involvement with groups and associations. Overall 75% of adults have taken part in the activities of a sports group,

hobby or leisure club more than twice in the last year, this increased from 72% in Phase I. The proportion of people attending a church or religious group has also seen a slight increase from 40% to 42% in Phase II. The proportion of respondents involved with a charitable organisation (on two occasions or more in the past year) decreased from 32% in Phase I to 26% in Phase II. A lesser proportion of respondents have an involvement with other associations, neighbourhood groups, trade unions or political parties, this finding is consistent with the Phase I survey.

Adults were also asked to consider the extent to which they felt able to influence decisions in their local area. In the Phase II survey, a majority of respondents felt unable to influence decisions (47%), this figure has increased from 41% of respondents in the original Phase I survey, and 38% of 'matched pair' respondents in Phase I.

4.7. Self-Esteem

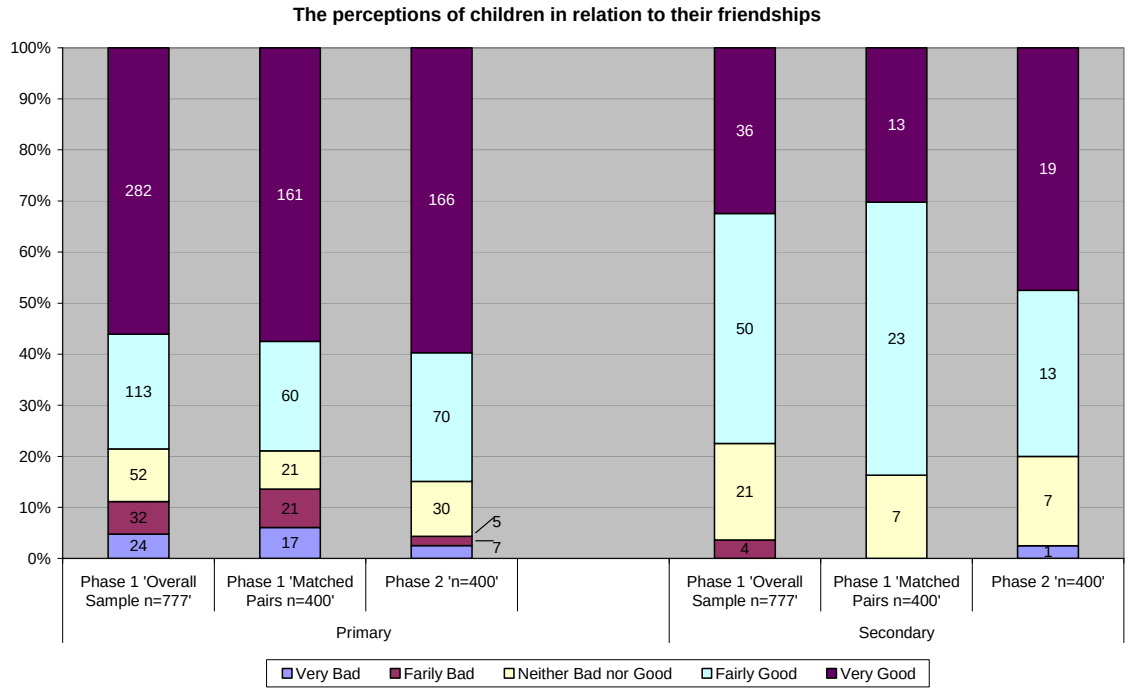
As described in the Phase I results section, self-esteem in adults is measured within this research using the renowned Rosenberg 'Self-Esteem Scale'. The adult questionnaires incorporate ten statements related to overall feelings of self-worth, these are answered on a four-point scale. Self-esteem is measured by summing the ratings assigned to all the items after reverse scoring the positively worded items. Self-esteem is measured slightly differently for children, due to ethical considerations. Children are asked basic questions relating to how they feel about themselves; responses are measured on a 5-point Likert scale ranging from very bad to very good.

The self perceptions held by primary and secondary school respondents are predominantly positive. Overall 65% of respondents describe relationships with their families as very good, with a further 20% describing these relationships as fairly good. This is consistent with the Phase I results.

Self perceptions in relation to 'body and looks' and 'self' amongst primary school respondents have not changed significantly. There is a noticeable trend amongst secondary school respondents with the number of people describing their self and body / looks as very good. In absolute terms however this equates to only a small number of individuals.

Graph 4.13 illustrates changes in how primary and secondary school respondents feel in relation to their friendships. The proportion of primary school children viewing friendships as very good has increased from 56% in the original Phase I survey, to 58% of the Phase I matched pairs sample to 60% in Phase II. The proportion of respondents viewing their friendships as fairly good has also increased. In line with these positive findings, the proportion of respondents describing their friendships as fairly or very bad has also decreased. Graph 4.13 also shows the secondary school findings. The number of secondary school respondents describing their friendships as very good has increased to 48%.

Graph 4.13: Perceptions of friendships by primary and secondary school respondents



As identified in the Phase I research, the most noticeable level of 'bad' feeling is associated with school work. There is a marginal decrease in the number of secondary school respondents describing their schoolwork as very bad. In contrast the number of primary school respondents describing their schoolwork as either fairly or very bad changed from 13% in Phase I, to 7% in the Phase I matched pair's sample, to 16% in Phase II. This equates to 21 additional individuals describing their schoolwork as fairly or very bad. However to put this into an overall context 64% of primary school children (179 individuals) described their feeling towards their schoolwork as fairly or very good.

Continuing with this positive trend, adults have relatively high levels of self-esteem, with 64% rating between 31 and 40, which is classified as high self-esteem, and 35% rating between 21 and 30, which equates to moderate self-esteem. These findings are identical to the original Phase I results. Only one individual is classified as having low self-esteem, this has decreased from two individuals in the Phase I research.

4.8. Key Findings

Analysis of the CSP participant surveys completed in Phase II of this research suggests that the majority of CSP participant's remain fit, healthy and have higher self-esteem than the average population of both Northern Ireland and the UK as a whole. More specifically, the adults and children monitored throughout this study remain engaged in more frequent and intensive physical activity, had lower BMI values, ate more healthily, consumed less alcohol and tobacco and had higher social capital than the average found amongst the UK population. Whilst some figures have fallen marginally when compared to Phase I, this can be explained predominantly by the high baseline figures and to a lesser extent by seasonal influences. No fluctuations are statistically significant.

- The current guidance regarding the recommended amount of physical activity from the Chief Medical Officer remains the same as in Phase I, at least 30 minutes of

exercise five times per week for adults, and one hour of physical activity per day for children. Exceptionally high levels of physical activity were reported in Phase I, on average respondents took part in physical activity on 5.6 days of the week. In Phase II this frequency of participation had fallen to 5.2 days per week, however this decrease could be the consequence of seasonal factors and nonetheless remains very high. The number of hours respondents participated in physical activity decreased marginally from an average of 12.1 hours per week to 11.9 hours per week. Although there has been a slight reduction in both the frequency and intensity of participation in physical activity, both findings remain well above the Chief Medical Officer's recommendations.

- The Department of Health (DH) recommends that a healthy diet should include at least five portions of a variety of fruit and vegetables each day. The Northern Ireland Health Promotion Survey in 2001 showed that on average 19% of adults consumed the recommended level of fruit and vegetables. Phase I revealed relatively very high consumption of fruit and vegetables for both adults and children and equated to an average of 4.4 portions per day. This trend has continued with the Phase II findings with the overall average increasing to 4.5 portions per day across the sample. Although this overall average is slightly below DH recommendations of five portions of fruit and vegetables per day, the level of consumption compares very favourably with the UK and NI averages.

- Government guidelines on alcohol consumption recommend that women should not consume more that 14 units per week, and men no more than 21 units. In Northern Ireland, 37% of men and 20% of women exceed the recommended level of alcohol consumption. Phase I reported that only 2% of both male and female survey respondents consumed alcohol at this level, this trend is continued in Phase II. Furthermore, another positive finding worth noting is that the number of male and females not drinking increased slightly. These benchmarks enable us to conclude that the levels of alcohol consumption identified within this survey are significantly lower than UK averages, and are well within the recommended guidelines for 'responsible' consumption.

- Northern Ireland's Health and Lifestyle Survey (2002) identified that 22% of respondents were current smokers. Our research findings indicate that 85% of adults surveyed in Phase II did not smoke compared with 80% in Phase I. This positive increase in the number of adults not smoking further shows that the individuals surveyed exhibit characteristics that are well below UK averages.

- Measuring the social capital in communities can be achieved through establishing levels of trust, membership of groups and associations and assessing social networks. The General Household Survey (2000) found that (46%) of people said that they knew most or many people in their neighbourhood, while more than half (58%) felt they could trust most or many people in their neighbourhood. Phase I reported that 82% of respondents had some trust for the people in their neighbourhood this has increased to 90% in Phase II. Furthermore, consistent with the Phase I findings a high proportion of adults were active members of clubs and associations, in Phase II.

- Self-perceptions held by primary and secondary school respondents were predominantly positive. Consistent with the Phase I findings over 62% of primary school respondents described relationships with their families as very good in Phase II. Positive relationships with friends, and positive perceptions relating to body, looks and self were also identified in both phases. Furthermore, adults had relatively high levels of self-esteem, in both Phase I (63% rating between 31 - 40) and Phase II (64% rating between 31 - 40). Phase I reported that two adults had low self-esteem compared to Phase II findings which now show that only one individual is classified as having low self-esteem.

One of the CSP aims is to increase levels of sustained participation in areas of high social and economic deprivation and among groups traditionally marginalised through the development and delivery of programmes. It is widely accepted that people living within areas of higher social deprivation are on average less healthy, less physically active and have lower social capital and self esteem, than those living in more affluent areas. The research findings contradict this expectation as the people that did respond to the survey can justifiably be held up as examples of the potential benefits of sport and physical activity as they are much fitter, healthier, have higher self esteem and social capital than the average population.

It remains our view that the respondents to the participant surveys on the Community Sport Programme are not necessarily those at whom the programme was directed. In marketing terms what appears to have happened is 'market penetration' (existing customers making more intensive use of existing products) rather than 'market development' (new customers for existing products). This is a common problem with community based interventions. Given the nature of the respondents, who might be regarded already as model citizens, it is difficult to see how further improvement on the key indicators could have been achieved.

5. PHYSIOLOGICAL ASSESSMENT

5.1 Introduction

The importance of physical activity and health cannot be underestimated as adults who are physically active have a reduced risk of up to 50% in developing such diseases as coronary heart disease, stroke, diabetes and cancer (Department of Health, 2004). Physical activity in children also has many health benefits including weight control, lower blood pressure, improved psychological wellbeing and a greater likelihood that they will remain physically active into adult life (Williams et al., 2002).

One of the objectives of the 'SCNI Community Sport Programme' is;

'to improve the health and well-being of programme participants through involvement in sport and physical activity programmes'.

The scope of our assignment is to;

'obtain BMI data and conduct appropriate fitness tests for the sample population; and to collate and analyse survey, BMI and fitness data and provide electronic files containing all data to SCNI'.

To meet the objectives of the SCNI Programme physiological tests were selected which were appropriate to the proposed participants. The rationale supporting the use of each measurement is outlined below.

Pre-Screening

This was used to reduce the occurrence of unwanted events during physical fitness assessment. The process identified any factors which might have had a bearing on the participants' capacity to perform the required tests, or the results obtained. Participants' medical history and informed consent to take part in the testing were also obtained at this time.

Anthropometry

The assessment of Body Mass Index (BMI) is a simple, non-invasive and commonly used measure for determining the prevalence of overweight and obesity in various population groups, with centile curves developed for use in paediatric populations (Cole et al., 2000, Kuczmarski et al., 2000). However, BMI does not provide information regarding either body composition or the distribution of body fat.

Waist circumference is commonly used as a measure of body fat distribution in adults and is a useful tool for determining risk of obesity related diseases, such as cardiovascular disease. Recent evidence suggests that excessive abdominal fat in children may also be putting their health at risk. Thus waist circumference may also be an important measure in determining overweight and obese children. However, although centiles have been developed for waist circumference in British children, there are currently only suggested cut-off points for overweight and obesity, with no agreed consensus on how to define those (McCarthy et al., 2001).

For these purposes assessments of height, weight and body composition were carried out for all age groups, with waist and hip measurements taken in the adult participants.

Blood Pressure

High blood pressure (hypertension) is a major risk factor for the development of heart failure, stroke, kidney failure and impaired vision. Evidence suggests that blood pressure can be reduced by as much as 10mmHg systolic and 8mmHg diastolic through positive lifestyle changes such as increased activity levels. In childhood, blood pressure normally rises with age, although elevated blood pressure at a young age is a predictor of hypertension in adulthood (Williams et al., 2002). Assessment of this was therefore important both for comparison post-intervention and for pre-screening.

Aerobic Capacity

Anthropometric measures are only concerned with either, weight loss or fat loss and it is common knowledge that the ideal combination for this involves changes in both diet and physical activity levels. In addition, there may be a significant number of individuals for whom weight loss is nether necessary or desirable. Therefore, it may also be appropriate to look at other benefits that increases in physical activity may bring, such as improvements in physical fitness. Aerobic capacity is a measure of stamina or endurance and refers to the ability of the whole body to sustain prolonged exercise such as running and cycling. Maximum aerobic capacity (VO_{2max}) is dictated by your ability to take up, transport and utilise oxygen, and can be improved through increases in physical activity levels. Improved values are associated with an improvement in cardiovascular risk factors.

Due to the participant population, maximal exercise testing of VO_{2max} was inappropriate, hence sub-maximal tests designed to predict this value were used. All participants aged 16 years and over performed the YMCA cycle ergometer test, which is non weight bearing and low risk in terms of injury potential. However, children are likely to be limited by peripheral muscle (quadriceps) discomfort due to their lesser physical maturity and the size of the bike, which is too large for anyone under 125 cm tall. The Chester Step Test was therefore utilised for participants aged 7-16 years as the movement is one to which children are accustomed, and the step height can be altered to suit all ages and abilities.

5.2 Methods

5.2.1 Participants

Overall 244 participants on the Sports Council Northern Ireland's (SCNI) Community Sport Programme (CSP) agreed to take part in the initial physiological assessment. One hundred and eighteen (48.4%) were male and one hundred and twenty six (51.6%) were female. Participants were split into 3 age groups, Primary (7 to 11 years), Secondary (11 to 16 years) and adult (>16 years). The mean age of each group were, adults (age 32.7±11.6 years; mean ± SD), secondary (age 13.2 ± 1.6 years), primary (age 8.9 ± 1.1 years).

In total 148 (60.7%) of those attending the initial physiological assessment returned for the follow-up assessment six month later. Seventy two (48.6%) were male and seventy six (51.4%) were female.

The sample was drawn from 5 different programmes across Northern Ireland (East Belfast, Newtownabbey, Ballymena, Moyle and Derry), plus a nation wide group from Disability Sport Northern Ireland (DSNI). The distribution of those attending the baseline assessment and six month follow-up are displayed by age group and location in Table 5.1.

Table 5.1. Physiological assessments by location and age group for the baseline assessment (1) and the 6 month follow-up (2). *Note DSNI started 6 months later than the rest and will receive there follow-up in a further 6 months.*

	Primary		Secondary		Adult		Total		%
Intervention	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**Re-tested**
East Belfast	22	11	3	0	20	3	45	14	**31.1**
Newtownabbey	53	38	0	0	4	0	57	38	**66.7**
Ballymena	2	1	13	9	3	0	18	10	**55.6**
Moyle	20	19	0	0	0	0	20	19	**95.0**
Derry	70	56	25	11	0	0	95	67	**70.5**
DSNI	1	-	3	-	5	-	9	-	**-**
Total	**168**	**125**	**44**	**20**	**32**	**3**	**244**	**148**	
% Re-tested	**74.4**		**45.5**		**9.4**		**60.7**		

Participants were pre-screened using a health history questionnaire and informed consent was gained in advance of both the baseline and follow-up assessments. Questionnaires were completed and consent gained from parents/guardians for those in the primary and secondary groups. Prior to each testing session participants were asked where possible to refrain from food and caffeine for a minimum of two hours, strenuous exercise and alcohol for at least 24 hours and to arrive well rested and fully hydrated for the assessment.

5.2.2 Experimental Design

Participants were assessed in May 2005 towards the start of their involvements on the SCNI's CSP and again in November 2005 after six months on the CSP intervention. Due to the absence of a control group the intervention was monitored and evaluated using a single group longitudinal design. This design is statistically weaker than performing a randomised control trial and will not factor out other influences on the results such as maturation. However, without the existence of a control group this is the only option and will report if any changes in fitness have occurred. If possible participants were selected randomly so as to provide a representative sample of those on the CSP. However, to obtain enough participants the final sample consisted of those available to volunteer for the study.

5.2.3 Physiological Assessment Protocol

On arrival at the assessment venue participants were seated whilst their pre-test medical questionnaires and consent forms were checked. Blood pressure was then taken following standard procedures as outlined in the American College of Sports Medicine (ACSM) guidelines (Dwyer and Davis, 2005).

The participants' height and weight was then recorded and Body Mass Index (BMI) calculated as weight (kg)/ height^2 (m). Body composition was estimated using the bio-electrical impedance method and used to calculate body percent fat (Tanita TBF300GS Body fat Monitor). Waist and hip measurements were then taken in the adult group in order to determine waist to hip ratio using standard ACSM procedures (Dwyer and Davis, 2005). For the DSNI group, weight, seated height and arm girths were measured, with body composition assessed by calculating the sum of three skinfold measurements taken at the triceps, biceps and sub-scapular sites.

Aerobic capacity in the primary and secondary school age groups were estimated using the 'Chester Step Test' (Sykes, 1999). In the adult group, aerobic capacity was estimated using

the YMCA sub-maximal cycle test conducted as outlined in the 'Y's way to Physical Fitness' (Golding et al., 1989), with VO_2 max predicted using the equation outlined in the 'ACSM Manual' (Dwyer and Davis, 2005). In the DSNI group, a similar method was used with an arm crank set-up. No standard equations have been derived to convert scores from sub-maximal arm crank assessment to a predicted VO_2 max value. Heart rate date collected during the final stage was therefore used to determine if any changes in aerobic fitness had occurred.

Results were then placed into categories in relation to normative data. Blood pressure data was compared with ACSM recommendations (Dwyer and Davis, 2005) for the adult age group and American Heart Association (AHA) recommendations (Williams et al., 2002) for the primary and secondary age groups.

Anthropometric data was placed into categories for BMI, percent body fat and waist, hip ratio. BMI data for adults was compared with categories set out by the World Health Organisation, (1998), whilst primary and secondary data was categorised using Centre for Disease Control and Prevention (CDC) growth charts (Kuczmarski et al., 2000), taking into account both age and gender. Waist to hip ratio was compared with ACSM recommendations (Dwyer and Davis, 2005).

Aerobic capacity data was compared with normative values established for VO_2 max in healthy untrained subjects from 7 European countries, USA and Canada (Shvartz and Reibold,1990).

5.2.4 Data analysis

The baseline data was collated and descriptive statistics produced, providing mean and standard deviation scores for each age category and each assessment dimension. Results were then put into categories to determine the percentage of people falling into each group when compared with normative data. Normative data that takes into account the participant's age was used to analyse the scores, to ensure that categorised data provided an accurate representation of the subject group.

Following the six month post intervention assessments, matched pairs were produced for the baseline and follow-up data, with descriptive statistics created as for the baseline data. Statistical analysis was then used to determine any differences between baseline and six month follow-up data, in order to evaluate if the CSP intervention had had an effect on the physiological components measured.

Chi-square analysis was used to identify if there were any significant difference in the number of participants in each health category from the baseline to follow-up assessments.

5.3 Results

The reader is asked to assume no significant difference between data sets unless otherwise stated. Tables 5.2, 5.3 and 5.4 show the descriptive statistics for the physiological data collected in the primary school, secondary school and adult groups. It is difficult to derive anything meaningful from the adult data (Table 5.4) as only three participants, just 11.5 % of the initial sample returned for the six month follow-up visit.

Data in Table 5.2 suggests that the matched pairs (baseline) primary school group were not significantly different from the initial sample group. With the six month follow-up matched pairs slightly taller and heavier, with higher scores for BMI and body fat percentage. This trend was also apparent in the secondary school group (Table 5.3). This is as expected as normal values for height, weight, BMI, percentage body fat and blood pressure naturally increase with age. The category data enables us to view if these increases are above the expected. For example, at matched pairs (six month follow-up) are more individuals falling in the overweight category for BMI than at matched pairs (baseline)?

Table 5.2. Mean and Standard Deviations for the initial sample (baseline) and matched pairs (baseline and six month follow-up) physiological data for primary school children (age 7 to 11 years) on the CSP.

	Initial Sample (n=168)		Matched Pairs (n=125)			
	Baseline		Baseline		Follow-up	
	Male (n=82)	Female (n=86)	Male (n=63)	Female (n=62)	Male (n=63)	Female (n=62)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Height (m)	1.35 ± 0.08	1.36 ± 0.09	1.35 ± 0.08	1.36 ± 0.09	1.38 ± 0.08	1.38 ± 0.09
Weight (kg)	30.6 ± 7.8	34.0 ± 10.4	30.6 ± 8.0	33.5 ± 9.0	33.5 ± 8.7	36.2 ± 10.2
BMI	16.6 ± 2.8	18.1 ± 3.7	16.7 ± 3.0	17.9 ± 3.3	17.5 ± 3.15	18.6 ± 3.5
Fat (%)	15.3 ± 6.2	20.4 ± 9.5	15.5 ± 6.4	20.0 ± 8.9	17.3 ± 7.2	22.0 ± 3.5
SBP (mmHg)	110 ± 10	110 ± 8.9	110 ± 10.2	110 ± 9	112 ± 10	115 ± 10
DBP (mmHg)	67 ± 8	69 ± 7	68 ± 8	69 ± 7	67 ± 8	67 ± 7
PVO_2(ml/kg/min)	53 ± 10	47 ± 10	54 ± 10	47 ± 10	56 ± 8	47 ± 9

BPS = Systolic Blood Pressure, BPD = Diastolic Blood Pressure, PVO_2 = Predicted VO_2 max (aerobic capacity)

Table 5.3. Mean and Standard Deviations for the initial sample (baseline) and matched pairs (baseline and six month follow-up) physiological data for secondary school children (age 11 to 16 years) on the CSP.

	Initial Sample (n=41)		Matched Pairs (n=20)			
	Baseline		Baseline		Follow-up	
	Male (n=13)	Female (n=28)	Male (n=7)	Female (n=13)	Male (n=7)	Female (n=13)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Height (m)	1.56 ± 0.15	1.56 ± 0.06	1.48 ± 0.11	1.57 ± 0.07	1.52 ± 0.12	1.58 ± 0.07
Weight (kg)	47.1 ± 12.2	52.8 ± 13.0	39.0 ± 5.1	55.9 ± 14.4	41.8 ± 6.5	58.1 ± 14.7
BMI	19.0 ± 2.5	21.5 ± 4.1	17.9 ± 2.4	22.5 ± 4.5	18.2 ± 2.7	23.0 ± 4.8
Fat (%)	12.6 ± 6.9	23.8 ± 8.2	12.8 ± 6.4	24.7 ± 9.6	13.4 ± 7.9	26.0 ± 8.6
SBP (mmHg)	117 ± 12	115 ± 9	120 ± 15	118 ± 10	116 ± 10	125 ± 12
DBP (mmHg)	67 ± 6	70 ± 6	68 ± 7	70 ± 6	70 ± 11	69 ± 6
PVO_2(ml/kg/min)	61 ± 10	46 ± 7	61 ± 8	47 ± 8	56 ± 9	46 ± 6

BPS = Systolic Blood Pressure, BPD = Diastolic Blood Pressure, PVO_2 = Predicted VO_2 max (aerobic capacity)

Table 5.4. Mean and Standard Deviations for the initial sample (baseline) and matched pairs (baseline and six month follow-up) physiological data for adults (age >16 years) on the CSP.

	Initial Sample (n=26)	Matched Pairs (n=3)	
	Baseline	Baseline	Follow-up
	Overall (Male n=15, Female n=11)	Overall (Male n=2, Female n=1)	Overall (Male n=2, Female n=1)
	Mean ± SD	Mean ± SD	Mean ± SD
Stature (m)	1.69 ± 0.09	1.73 ± 0.1	1.73 ± 0.1
Weight (kg)	76.6 ± 23.6	69.5 ± 12.1	71.0 ± 13.6
BMI	26.6 ± 7.2	23.1 ± 0.9	23.5 ± 1.6
Fat (%)	25.7 ± 12.1	19.7 ± 5.5	20.5 ± 5.6
Waist (cm)	88.3 ± 18.3	80.2 ± 15.3	80.2 ± 15.3
Hip (cm)	104.0 ± 13.0	101.5 ± 8.3	101.5 ± 8.3

W:H Ratio	84.4 ± 9.3	0.81 ± 0.13	0.79 ± 0.11
SBP (mmHg)	126 ± 11	124 ± 8	122 ± 7
DBP (mmHg)	80 ± 12	72 ± 11	70 ± 8
PVO_2(ml/kg/min)	44 ± 11	46 ± 10	47 ± 11

5.3.1 Anthropometry

The categorised data for BMI in primary school children is displayed in Figure 5.1 and shows that in the initial sample and matched pairs (baseline) data, around 78% of primary school children were in the normal or underweight category for their age and height, with around 22% either overweight or at risk of being overweight. In the six month follow-up the percentage of children in the underweight and normal category dropped by 4%, with a corresponding rise in those either overweight or at risk of being overweight.

Figure 5.2 demonstrates that the percentage of secondary school children who were classified as underweight or of normal weight remained the same at around 65 % between the matched pairs (baseline and six month follow-up) data. However, there was nearly a 9% increase in the number of children in the overweight category as opposed to the, at risk of being overweight category. However, it must be remembered that this does only equate to two participants, due to the relatively small sample size.

Figure 5.1. Baseline and matched pairs (baseline and six month follow-up) data showing Body Mass Index distribution for primary school children (age 7 to 11 years).

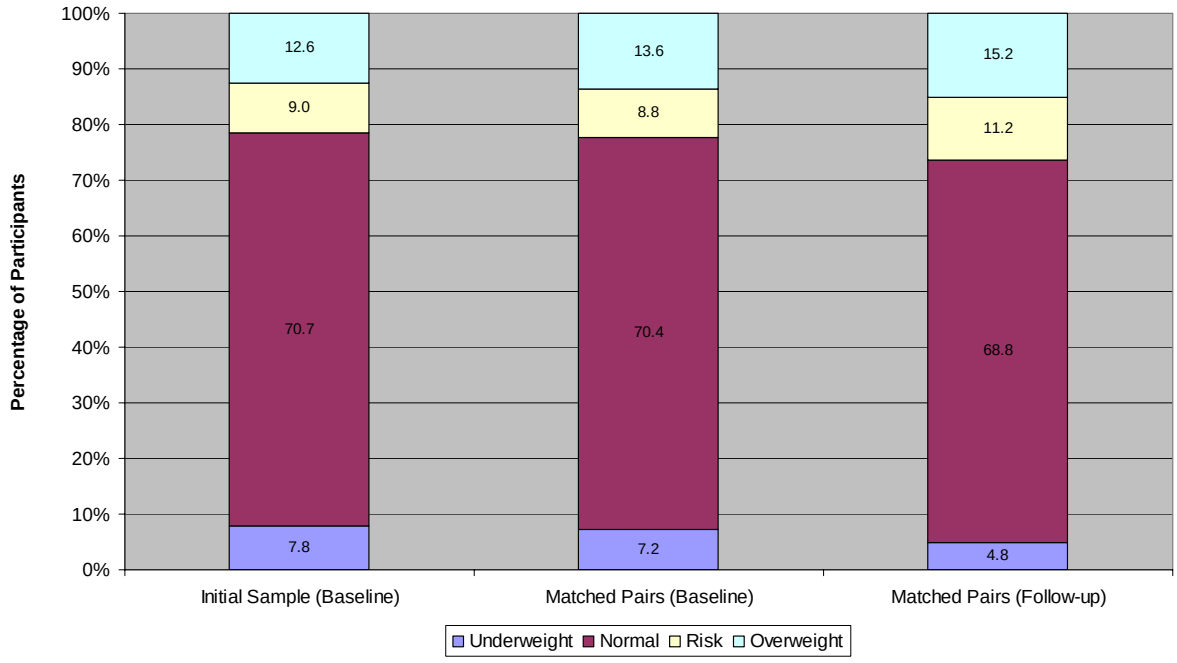


Figure 5.2. Baseline and matched pairs (baseline and 6 month follow-up) data showing Body Mass Index distribution for secondary school children (age 11 to 16 years).

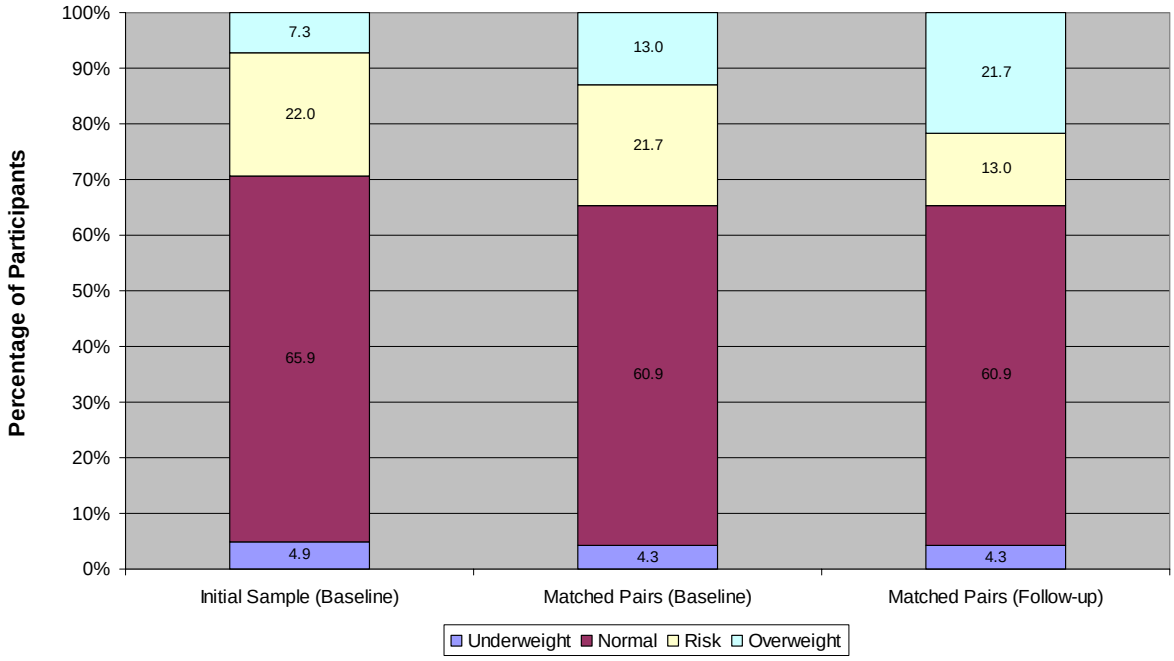
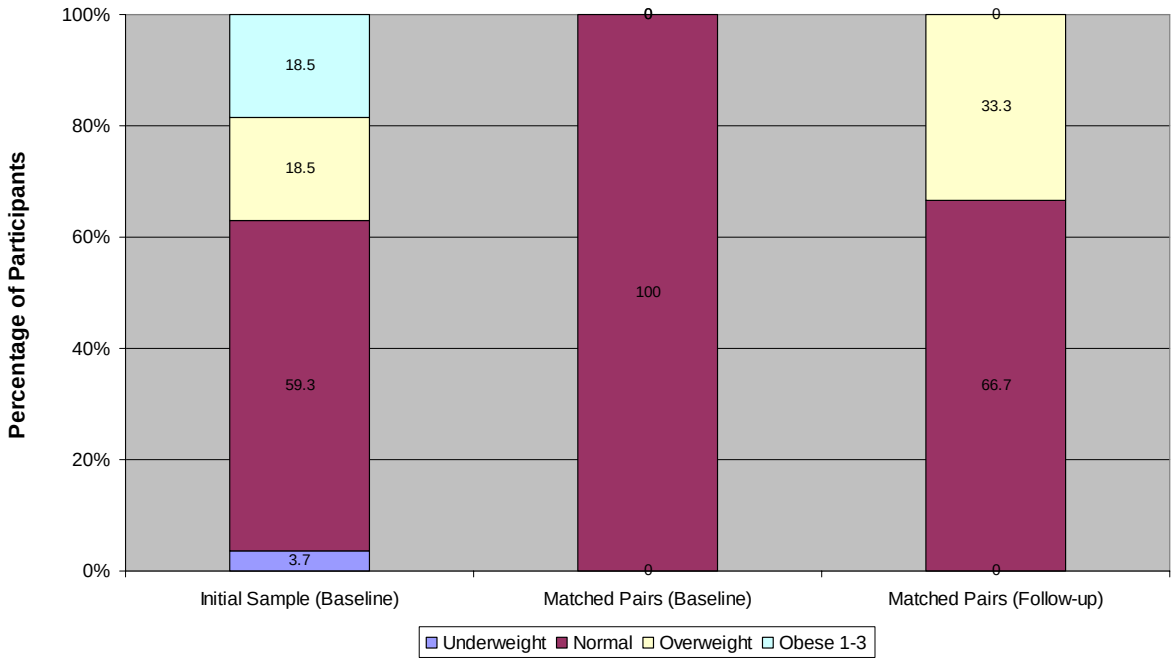


Figure 5.3. Baseline and matched pairs (baseline and 6 month follow-up) data showing Body Mass Index distribution for adults (age > 16 years).



Figures 5.3, 5.4 and 5.5 displays the adult category data for BMI, percentage body fat and waist hip ratio. Again with only three participants it is very difficult to derive anything meaningful from this data.

Figure 5.4. Baseline and matched pairs (baseline and 6 month follow-up) data showing body fat percentage category distribution for adults (age > 16 years).

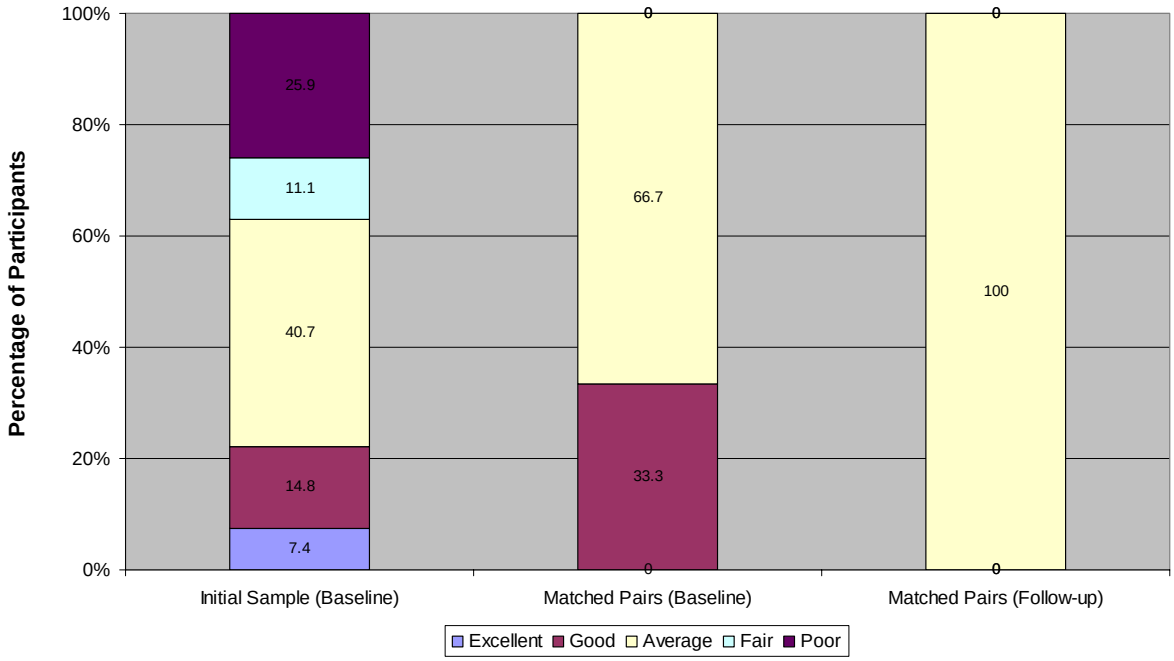
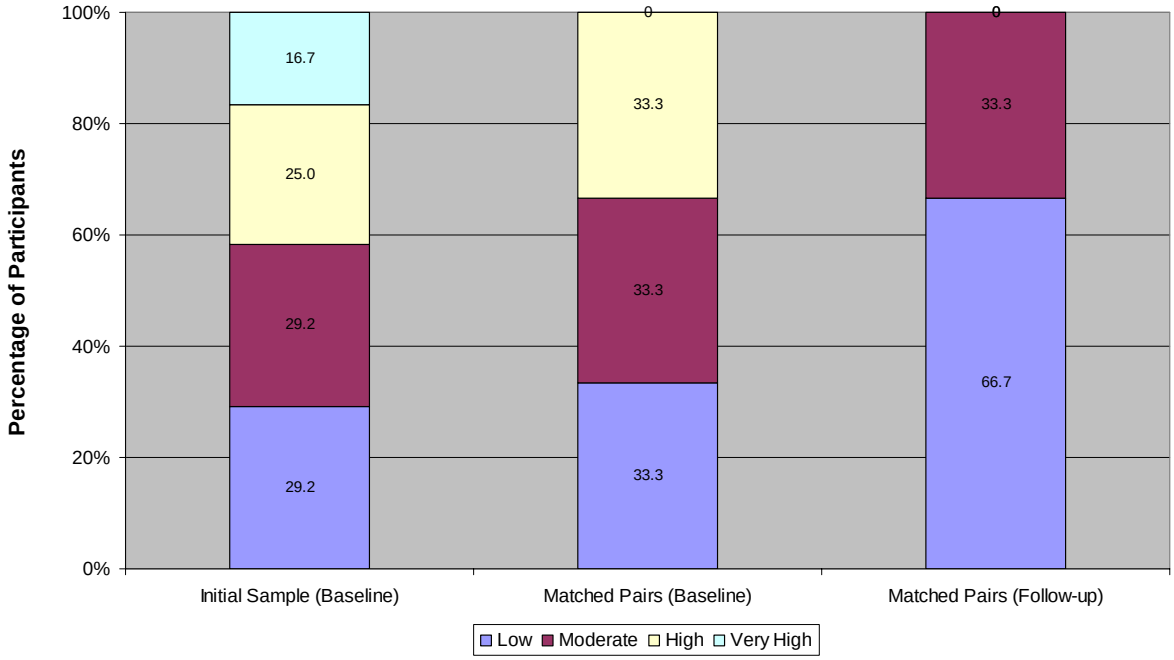
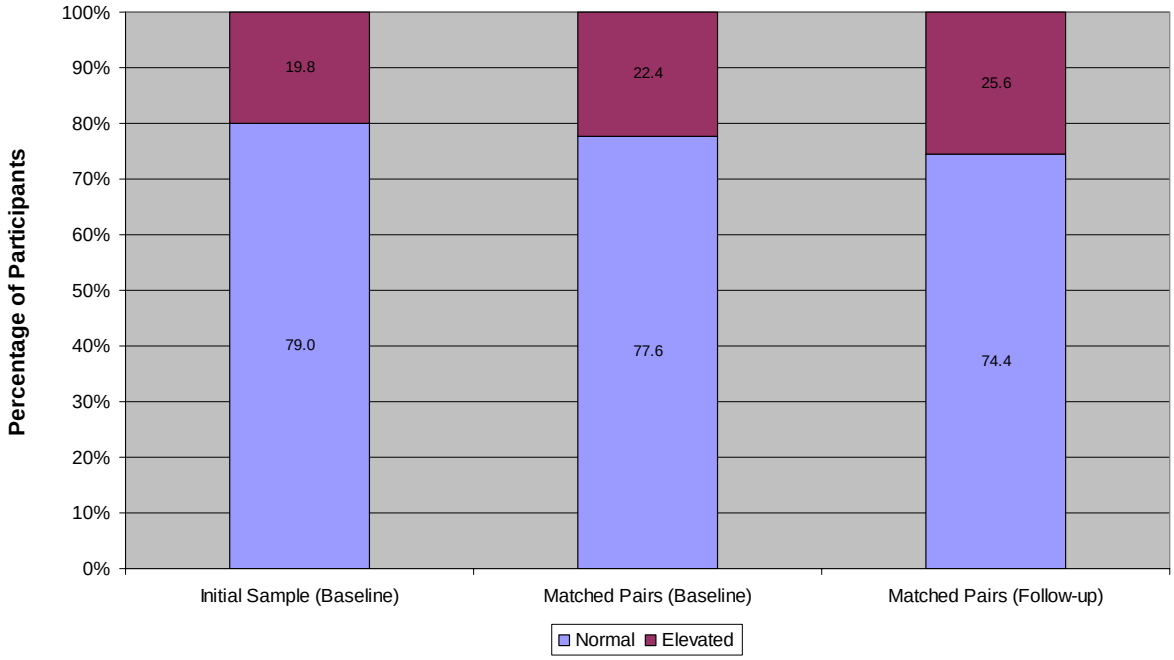


Figure 5.5. Baseline and matched pairs (baseline and 6 month follow-up) data showing waist/hip level of risk distribution for adults (age > 16 years).



5.3.2 Blood Pressure

Figure 5.6. Baseline and matched pairs (baseline and 6 month follow-up) data showing blood pressure category for primary school children (age 7 to 11 years).



Figures 5.6, 5.7 and 5.8 display the category data for blood pressure for the primary school, secondary school and adult CSP groups. The initial sample (baseline) and the matched pairs (baseline) data for primary and secondary school children tended to show a slight increase in the percentage of children classified as having elevated blood pressure in the matched pairs group. The matched pairs (baseline) data shows that the proportion of school children who had elevated blood pressure was similar for primary (22.4%) and secondary age participants (21.7%), rising to 25.6 % and 30.4% respectively by the matched pairs six month follow-up test.

The baseline adult data suggests that nearly 30% of adults on the CSP were classified as hypertensive, with 55.5% above normal. Again, due to the small matched pairs sample it is difficult to gleam anything from the 'test and re-test' data.

Figure 5.7. Baseline and matched pairs (baseline and six month follow-up) data showing blood pressure category for secondary school children.

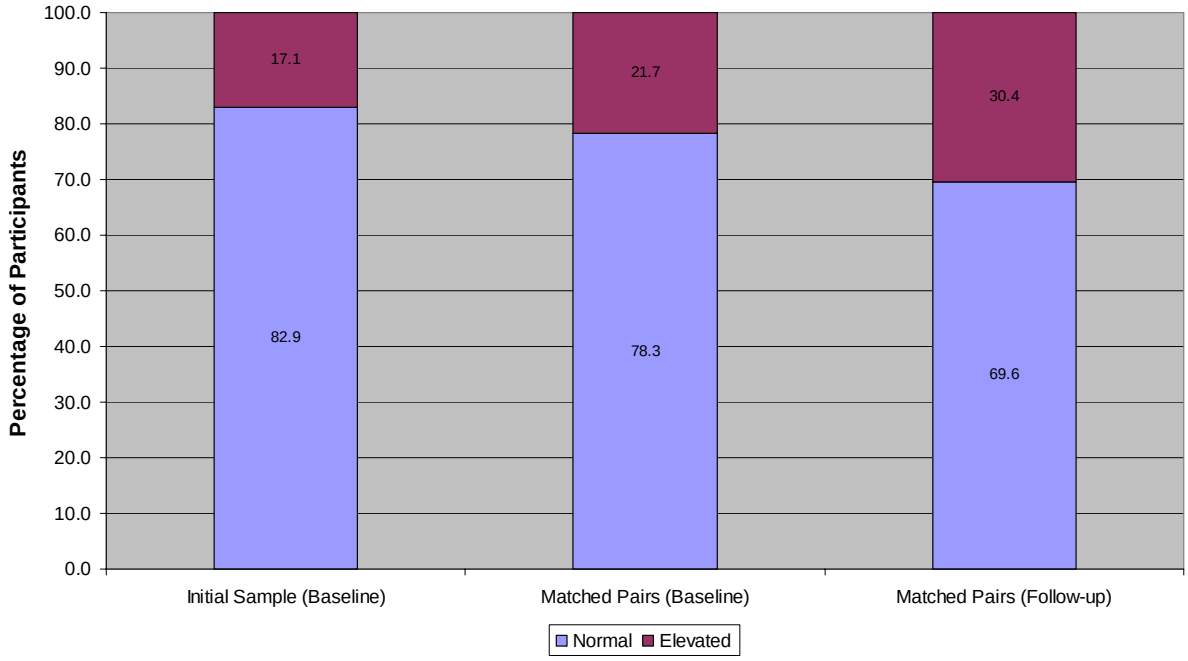
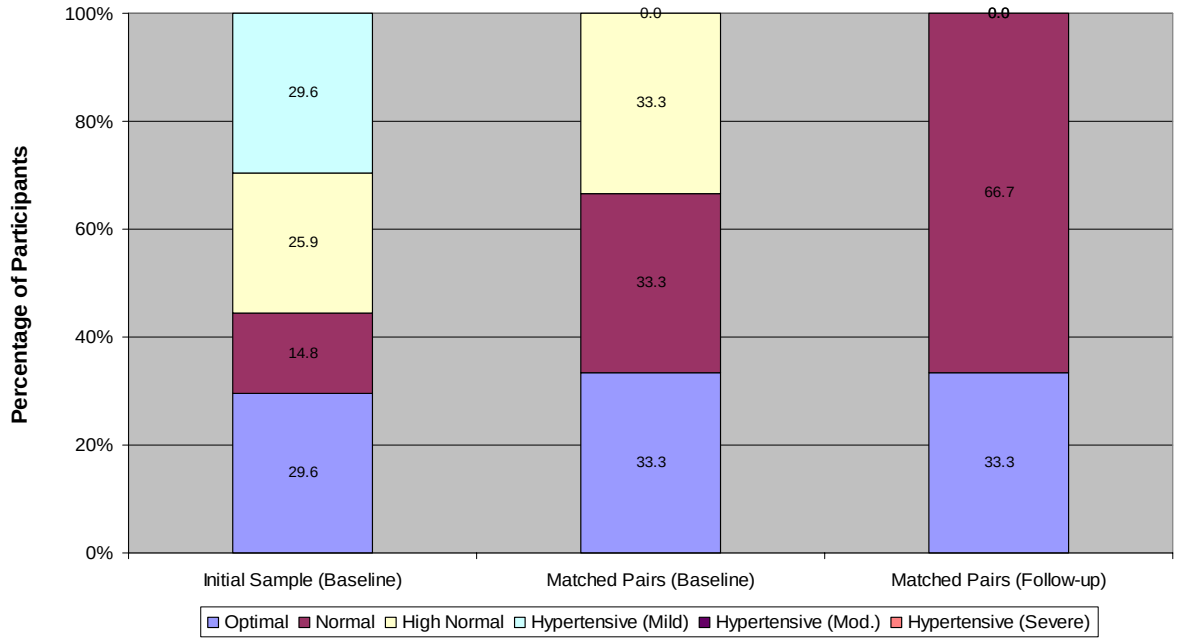


Figure 5.8. Baseline and matched pairs (baseline and 6 month follow-up) data showing blood pressure category for adults.



5.3.3 Aerobic Capacity

Figure 5.9. Baseline and matched pairs (baseline and 6 month follow-up) data showing aerobic capacity categories for primary school children.

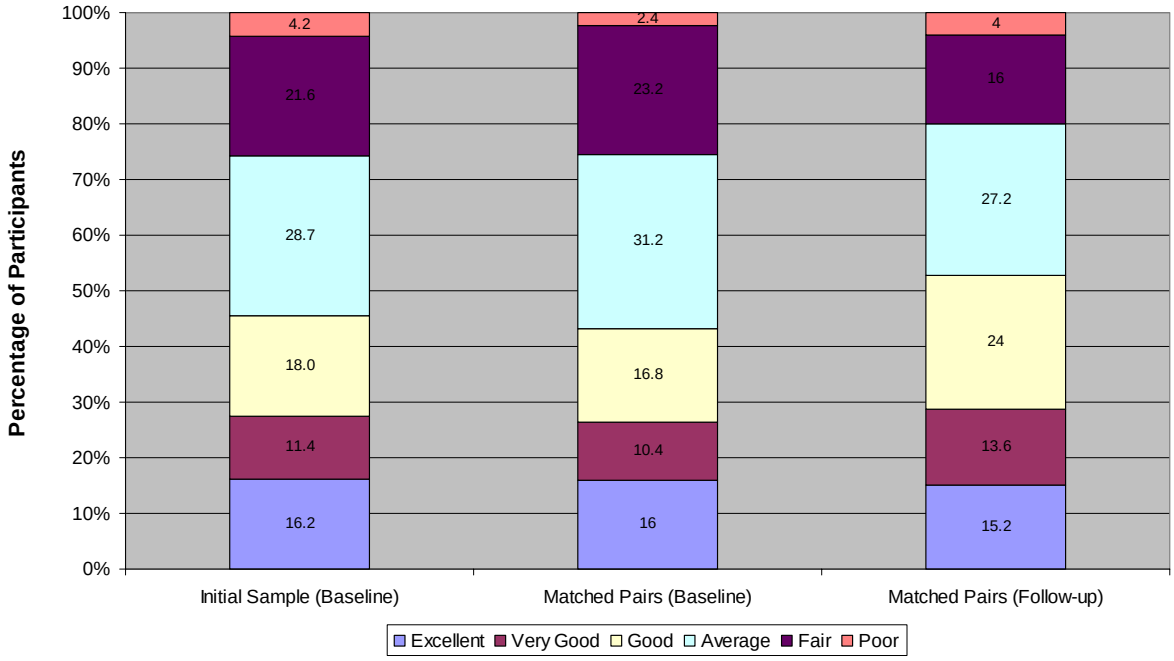
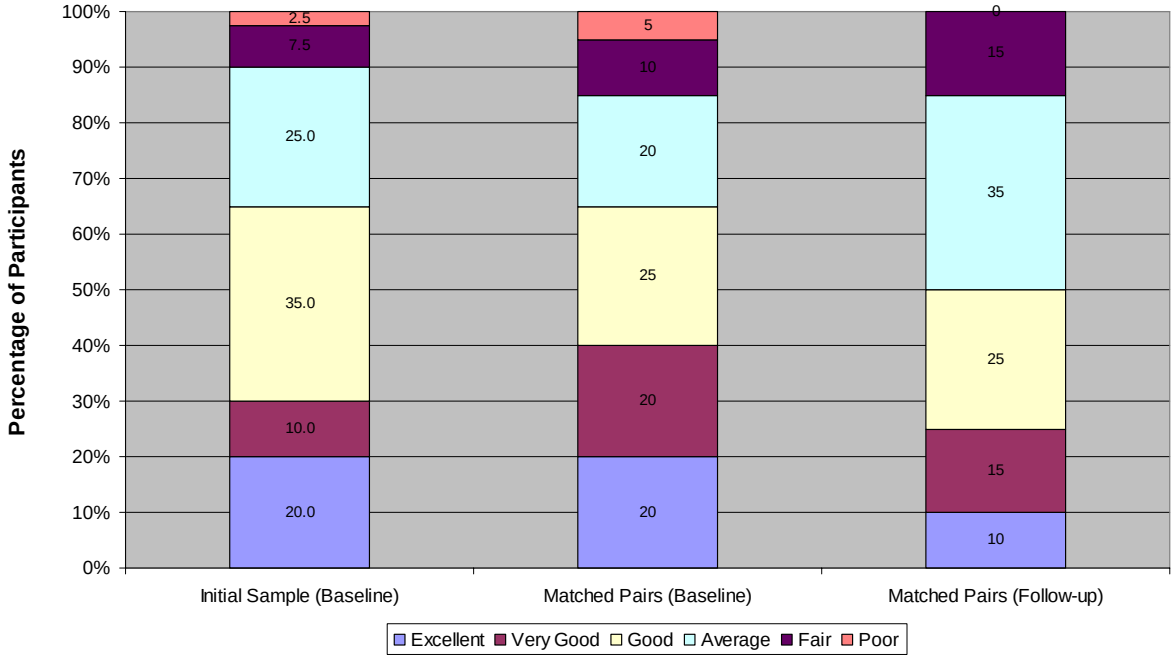


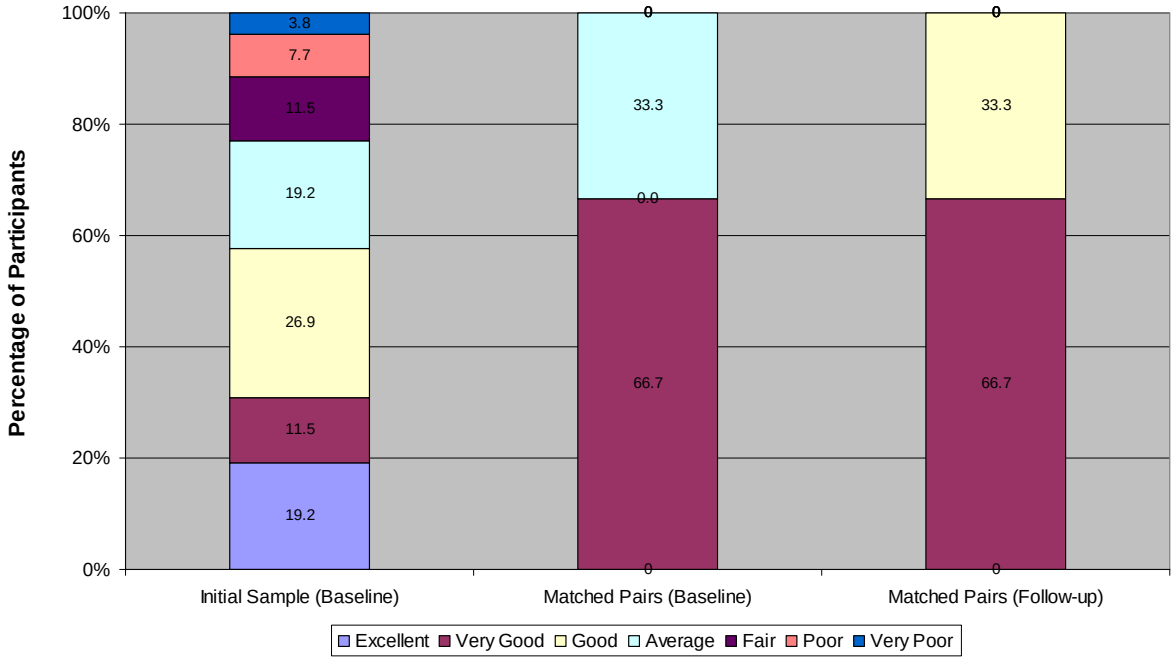
Figure 5.10. Baseline and matched pairs (baseline and 6 month follow-up) data showing aerobic capacity category for secondary school children.



Figures 5.9, 5.10 and 5.11 show the aerobic fitness classifications for the three groups, in the initial (baseline) sample and the matched pairs (baseline and six month follow-up) groups. The initial sample demonstrated that just over a quarter of primary school children tested displayed below average fitness levels. This dropped to under 10% in the secondary school children and back up to 23% in the adult group. This was not dissimilar to the matched pairs (baseline) school groups were again just over a quarter of primary school children and 15% of secondary school children displayed below average fitness. In the matched pairs follow-up this remained the same for the secondary school group, but

dropped to only 20% of primary school children displaying below average fitness in the matched pairs six month follow-up group.

Figure 5.11. Baseline and matched pairs (baseline and 6 month follow-up) data showing aerobic capacity category for adults.



5.3.4 Disability Sport Northern Ireland (DSNI)

At present only initial baseline data has been collected for the DSNI group (November 2006). Follow-up data will be collected in May 2006 if required by the SCNI. The group consisted of 9 participants, two able bodied males, six disabled males and one disabled female. The mean and standard deviations for age of the able bodied and the disabled groups were 17.3 ± 0.8 and 15.0 ± 3.0 years respectively. A standard adult protocol was used for the able bodied athletes, whilst an adapted protocol was used for the disabled athletes.

Tables 5.5 shows the descriptive statistics for the physiological data collected in the DSNI group. As no suitable normative data exists for this group data will not be split into categories, with raw score directly compared to determine if any changes have occurred in the follow-up assessment.

Table 5.5. Mean and Standard Deviations for the initial sample (baseline) data for the DSNI group.

Able bodied (Male n=2, Female n=0)		Disabled (Male n=6, female n=1)	
	Mean ± SD		Mean ± SD
Height (m)	1.70 ± 0.0	Sitting Height (m)	0.75 ± 0.1
Mass (kg)	65.5 ± 2.3	Mass (kg)	56.4 ± 9.8
BMI	22.7 ± 0.8	Arm Girth (cm)	30.6 ± 2.8
Body Fat (%)	18.7 ± 2.9	Sum of Skinfolds (mm)	43.3 ± 12.7
Systolic BP (mmHg)	125 ± 17	Systolic BP (mmHg)	126 ± 14
Diastolic BP (mmHg)	67 ± 7.1	Diastolic BP (mmHg)	72 ± 5
PVO2 (ml/kg/min)	57 ± 5	Aerobic Capacity (bpm)*	157 ± 22

*In the disabled group aerobic capacity was measured as the heart rate during the final stage of the arm crank test at 50 rpm against 1.1 kg resistance.

5.4 Key Findings

The majority, 84.5% of the CSP participants who took part in both of the physiological assessments at baseline and 6 months were of primary school age, with only 13.5% coming from secondary schools and 2% from the adult population. This suggests that the main focus of the regional CSP's was on the primary school age group. Due to the small sample size (n=3, 2 males and 1 female) from the matched pairs adult population it would be inappropriate to try and interpret the results and discuss findings in this group. The discussion will therefore focus on the primary and secondary school groups.

The anthropometric data shows that for BMI, the matched pairs (baseline) primary and secondary school groups had 22.4% and 34.7% of participants either at risk of being overweight or already overweight. This compares to 32% of 8-10 year olds and 22 % of 15 year olds in England (Department of Health, 2003). Thus suggesting that the majority of those on the CSP (primary school children) had normal levels of BMI, that are better than those reported in 2003 for English school children of the same age.

The blood pressure data demonstrates that for the matched pairs (baseline) school groups, 22.4 % of the primary school group and 25.6% of the secondary school group, reported elevated readings. This increased to 25.6% and 30.4% respectively by the six month follow-up assessment. This compares to approximately 30% of adults who are either hypertensive or normotensive on treatment in England (Department of Health, 2003).

The aerobic capacity results suggested that only a small percentage of the participants tested had below average Aerobic Capacity scores. Although there is no comparative data as to how this relates to the population as a whole.

The bullet points below outline some key considerations of this physiological testing programme.

- The majority of the participants were healthy primary school children and although reference values are largely from England rather than Northern Ireland (limited comparative data available), baseline results on the whole compared favourably to national statistics.

- The sample tested in this study are likely to demonstrate some self-selection bias, particularly adults who were selected on a more voluntary basis, with individuals on the community sport programme likely to be those that are fitter and healthier than the average population. This is common in community based programmes, as it is often far easier to increase the activity of those that are already active, than it is to reach those individuals who are not yet ready to change there behaviour (Transtheoretical model of behaviour change).

- Some of the participants had already started on community sport programmes prior to the baseline test and as such may have already accrued some fitness benefits before the baseline assessment. This was always going to make it more difficult to see any physiological changes.

Following the six months intervention there was very little change in the physiological parameters measured, with slight increase in the number of children falling in the

overweight category for BMI. This is not surprising as in order to see a positive physiological change it requires 'adherence to carefully planned programmes' (McArdle, Katch and Katch, 2001). This appears not to have happened, with most participants receiving one off interventions rather than taking part in regular sustained programmes. In addition, the tendency towards increased numbers of children falling in the overweight category could be due to a seasonal bias as individuals are likely to be more active in Spring (the date of the baseline assessment) than in Winter (the date of the follow-up assessment), due to more opportunities to take part in physical activity. Unfortunately, without the presence of a control group we cannot determine if the outcomes are still better than if there had been no CSP intervention.

6. CONCLUSIONS

Analysis of the CSP participant surveys completed in Phase I of this research brought us to the conclusion that the majority of CSP participants were fitter, healthier and had higher self esteem than the average population of both Northern Ireland specifically and the UK as a whole. It is widely accepted that people living within areas of higher social deprivation are on average less healthy than those living in more affluent areas. They would be expected to participate in less physical activity and have lower self esteem and social capital. This was clearly not the case for CSP participants, in fact very much the opposite was true, the respondents were very physically active and exhibited healthy lifestyles and high self esteem. The Phase I research findings suggested that respondents to the three surveys of participants on the Community Sport Programme were not necessarily those at whom the programme was directed.

Overall, the Phase II survey findings were broadly consistent with those from Phase I. Specifically, the adults and children monitored through the Phase II survey continued to participate in more frequent and intensive physical activity, had lower BMI values, ate more healthily, consumed less alcohol and tobacco and had higher social capital and self-esteem than the average found amongst the UK population.

Whilst some figures have fallen marginally when compared to Phase I, these can be explained predominantly by the high baseline figures and to a lesser extent by seasonal influences. The Phase II 're-test' highlighted a general consistency in participant behaviour, however, where nominal changes of a positive nature have occurred these are discussed below.

In summary, following the six month intervention there was very little change in either participant behaviour as evaluated through the participant survey, or in the physiological parameters measured. The key findings from the overall survey research and programme of physiological testing are now outlined.

- Exceptionally high levels of physical activity were reported by CSP participants in both Phase I and Phase II. The findings exceed the Chief Medical Officer's recommendations by a significant amount. The changes between the average physical activity levels identified in Phase I and Phase II were marginal. The only marginal positive increase was in the intensity of participation in physical activity by adults.

- The original Phase I baseline survey of 777 respondents indicated that adults participated in less physical activity than children. When the results of the 400 respondents who also completed a Phase II questionnaire were isolated the results were with the Phase I baseline. However Phase II illustrated that participation in physical activity by adults was comparable with that of secondary school children and slightly higher than that of primary school children.

- The increases in participation evident from a comparison of the Phase I 'overall baseline data' and the 'matched pairs' data are indicative of systematic attrition. In summary, the more active participants in Phase I engaged with the research and in due course completed a Phase II survey, whereas some of the less physically active participants dropped out of the research.

- A key point of note is that the participation frequency and intensity identified through the Phase I survey was so high that it is difficult to envisage how significant positive change could have been achieved.

- The fruit and vegetable consumption by adults and children in the sample is very high in both Phase I and Phase II. The overall average consumption is 4.5 portions per day, this falls slightly below the recommended intake of 5 portions of fruit and vegetables, but compares very favourably with the UK and NI averages. The Phase II analysis identified a marginal overall increase from Phase I. Adults and secondary school respondents consumed more fruit and vegetables overall in the Phase II survey. Both primary and secondary school respondents actually consumed less fruit but more vegetables in the Phase II survey, possibly a consequence of seasonal factors influencing diet.

- National research concluded that 37% of men and 20% of women exceed the recommended level of alcohol consumption in Northern Ireland. Phase I reported that only 2% of both male and female survey respondents consumed alcohol at this level, and this trend is continued in Phase II. Furthermore, the slight increase in the number of male and females not drinking is another positive finding. These benchmarks enable us to conclude that the levels of alcohol consumption identified within this survey are significantly lower than were expected and much below UK averages, and are well within the recommended guidelines for 'responsible' consumption.

- The research findings indicated that 85% of adults surveyed in Phase II did not smoke, this was a marginal improvement on the Phase I findings whereby 80% of adult respondents were smokers. Northern Ireland's Health and Lifestyle Survey (2002) identified that 22% of respondents were current smokers, therefore CSP participants were clearly well below the national average.

- The levels of social capital identified in the Phase II survey were broadly consistent with the Phase I findings. The changes identified were marginal and the overall level of social capital remained very high.

- The anthropometric data demonstrated a marginal increase in the BMI of participants, with slightly more children being classed as 'overweight'. However the majority of those on the CSP had normal levels of BMI and these were better than those reported in 2003 for English school children of the same age.

- The self perceptions of primary and secondary school respondents were predominantly high. Positive relationships with friends, and positive perceptions relating to body, looks and self were also identified in both Phases. There was no change in the adult self esteem results from Phase I to Phase II. Overall, the high levels of self esteem and self perceptions were maintained.

The sample tested in this study were likely to demonstrate some self-selection bias, particularly adults who were selected on a more voluntary basis. Individuals on the CSP were likely to be those that were fitter and healthier than the average population - both the participant survey and physiological testing results concur with this notion. Participant attrition is inevitable in research of an experimental and longitudinal nature, and evidence

that this attrition was systematic was provided within this report (particularly in the case of adult participants).

The nature of the sample was that the majority of the participants within this research study were primary school children. The number of adults involved in the participant survey (particularly in Phase II) and in the physiological testing was limited. The CSP was designed to provide opportunities for both adults and children, the original intention was not specifically to target school children. This may have become the focus of the CSP as a result of practical and resource issues, however it is difficult to evaluate the wider impact of any genuine community intervention through research predominantly incorporating school children.

In conclusion, it remains our view that the respondents to the participant surveys on the Community Sport Programme are not necessarily those at whom the programme was directed. In marketing terms what appears to have happened is 'market penetration' (existing customers making more intensive use of existing products) rather than 'market development' (new customers for existing products). This is a common problem with community based interventions.

To link these findings to the original CSP aims, it was initially hoped that the Phase II survey would identify positive behavioural changes, specifically in terms of physical activity levels, nutrition, lifestyle, self-esteem and social capital, which could be attributed to peoples involvement in the CSP. However given the nature of the respondents as identified in Phase I who already fit the description of 'model citizens', it is difficult to see how further improvement on the key indicators could have been achieved. It is clear that the vast majority of participants on the CSP were not involved on a regular basis, with most participants receiving one off interventions rather than taking part in sustained activity programmes.

It is important to remember that this research evaluates the pilot CSP through a snapshot in time, and only incorporates participants who were involved in the pilot CSP during the Phase I survey (April - June 2005). It does not take into account any subsequent developments associated with the wider CSP roll-out. This evaluation should provide the stimulus for a continuous programme of improvement for the CSP and can provide recommendations of how further research can be developed to maximise learning potential and to accurately monitor the participants at whom the programme was originally designed.

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27th March 2006