Formal Volunteering and health in the 50+ age group in Northern Ireland

Final Report

VOLUNTEER NOW
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Contents

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Volunteer Now works to promote, enhance and support volunteering across Northern Ireland. Volunteer Now connects with individuals and organisations to build healthy communities and create positive change. Volunteer Now enhances recognition for the contribution volunteers make, provides access to opportunities and encourages people to volunteer. It provides training, information, guidance and support to volunteer-involving organisations on issues of good practice and policy regarding volunteering, volunteer management, child protection, safeguarding vulnerable adults and governance.

The Unlocking Potential Project has provided information and support on how to successfully attract, support and retain older volunteers. To access these resources and to find out more, including names, role and contact details of the project staff, go to http://www.volunteernow.co.uk/supporting-organisations/developing-volunteering and clicking on Volunteering for Over 50s.

Additional copies of the report can be downloaded from www.volunteernow.co.uk.

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1.0 Executive Summary

As life expectancy has increased in Northern Ireland, older people make up an increasing proportion of the population. Much of the policy discourse has centred on the pressures being created by an ageing population on health, social care and welfare and less has been made of the contribution that older people make to society as volunteers, carers, family members, etc. Maintaining health and well-being across the life course is important, including into older age group. This is an increasingly important priority area for government as indicated in recent consultations on major government lead strategic policy work i.e. health and social care reform plans and the new draft 10 year public health framework.

In 2010 Volunteer Now commissioned a longitudinal study funded by the Atlantic Philanthropies which was conducted by the University of Ulster (UU) over a 3 year period between 2010 and 2013. A partnership approach involved Volunteer Now supporting UU by recruiting the sample and administering questionnaires an providing periodic support and feedback on data collection progress.

Since March 2010 people aged 50^{+} engaged in formal volunteering activities in Northern Ireland have been involved in this study by providing data at four consecutive 6-month time periods. Data collection was completed in July 2012 culminating in the publication of this report. This report analyses data collected at four time points (Baseline, 6 months, 12 months and 18 months post baseline) and focuses on the following key themes:

- A description of the volunteers sample in terms of demographic variables, health status, perceived functional status and rates of reported disability. This also includes a description of the main activities carried out within volunteering organisations and the reasons given by older people for formal volunteering
- Organisational recruitment and support practices, volunteer roles and satisfaction levels with volunteering over time.

- Time trends in physical health, psychological wellbeing, levels of physical activity and body mass index and attitudes to ageing over an 18 month period.

The fieldwork has coincided with key milestone years for volunteer and ageing issues. 2011 was declared the 'European Year of Volunteering' and marked the tenth anniversary of the UN 'International Year of the Volunteer 2001', which aimed to highlight the achievements of volunteers worldwide and to encourage more people to engage in voluntary work. The year 2012 was designated 'European Year of Active Ageing and Solidarity between the Generations'.

Rationale:

Based on data collected from older volunteers aged 50^{+}, this study reports on an analysis of longitudinal data over 4 time points and provides additional insights into current knowledge of natural age related change trajectories in health, quality of life and activity levels in this target group within the Northern Ireland context.

Key findings

Description of sample

At baseline, 344 volunteers were located within 109 organisations across Northern Ireland. The majority of organisations were classified as belonging to the voluntary/community sector (81.7%), with 5.5% belonging to the statutory sector, and 1.8% classified as housing association. The baseline sample consisted of 344 participants (60% female and 40% male) whose ages ranged from 50 to 90 years (M=64.9, SD=7.6). The sample consisted of volunteers from across all local Government districts in Northern Ireland and the majority of respondents were aged 60-69 (51.2%), with smaller numbers in the older 80-89 category (N=14). The sample also comprised a mix of new (33.7%) and experienced volunteers (64.8%). Response attrition over the four data collection waves was low with sample response rates at time 6 months, 12 months and 18 months respectively given as (N=294, N=285 and N=275).

Types of activities and roles

Respondents reported involvement in a wide variety of activities, the most popular of which were organising/ running events (38.4%), giving advice (30.5%), befriending/mentoring (29.7%) and raising/handling money (29.1%), indicating a wide diversity in terms of the range of formal volunteering activities being pursued by older people across the sector. The types of volunteering activities have been classified using factor analytic techniques and results indicate that approximately half of men and women were engaged in management or leadership roles, with caring, visiting, befriending and administrative roles favoured more by women and practical and physical roles favoured more by men.

Motivations for volunteering

The reasons given for volunteering illustrate that many active volunteers in this age group have time to devote to volunteering, skills to offer and the motivation to become involved in worthwhile activities they perceive as benefiting others in their community, while enhancing their own learning and enabling more social contact. Altruism featured highly with 65% of respondents wanting to 'improve things' through volunteering and 46.5% stating that the 'cause was important'. The self-enhancing role of volunteering is also emphasised with 54.7% motivated by the prospect of using their existing skills and 35.8% wishing to learn new skills.

Reported Levels of Disability

The percentage of volunteers reporting having some form of disability was 22.9% which is considerably lower than population estimates for disability but differences in the way in which this question was asked prevented direct comparisons with the previous Northern Ireland Survey of Activity Limitation and Disability (NISALD, 2007).

Medical health

At baseline, just over half of the respondents (54.5%) reported that they had been diagnosed by a doctor as having at least one of the seven general medical conditions (high blood pressure, arthritis/rheumatism, heart problems, diabetes, stroke, cancer, chronic lung disease), with 45.4% of the sample reporting being

condition-free. Despite this, the majority of volunteers (78.6%) declared that they were 'satisfied' with their overall health. A high percentage (86%) of volunteers also expressed being able to perform their general daily activities with 91% declaring that that they were 'well' or 'very well able to get around'.

Reported Physical Activity levels and Body Mass Index (BMI)

Reported levels of vigorous and mild physical activities displayed small but statistically significant linear decreases over time. The number of reported days in the previous week spent doing 'vigorous' activities declined on average by .12 days at each 6 monthly time point, and by .13 days for 'mild' activities. 'Moderate' activity levels demonstrated a stable pattern over the time period and volunteers also reported consistently higher participation rates in moderate activities compared to vigorous or mild. Given the modest reductions in vigorous and mild activities reported over the time period this has not impacted on reported BMI levels over the period with a pattern of stability and maintenance recorded in this area.

Organisational recruitment and support practices and satisfaction with the volunteering experience

Not all organisations provided information in this regard but where information on recruitment and support practices were available, the majority (94.1%) used an interview and an application form as part of their recruitment of volunteers. The majority also provided induction and training support (95.6%), as well as having a named support person for volunteers to access (94.1%) and ongoing supervisory meetings on progress (91.2%).

Relating this organisational information to expressed satisfaction with the volunteer experience showed that where such practices were in place in organisations, satisfaction levels at 6 months were consistently higher (figures 4.3 and 4.4). The percentages expressing satisfaction with volunteering were generally higher at 12 and 18 months (range 94-100% satisfaction), regardless of whether these recruitment and support practices were in place. This suggests that recruitment and support practices have more beneficial impact during the initial period of the volunteering experience.

Perceptions of the volunteering experience

The vast majority of volunteers reported being suitably placed, able to cope with their volunteering activities and felt that their efforts were appreciated by their volunteer organisations. Findings from this study do not support the notion of differential benefits of volunteering for the younger and older old.

In summary, the majority of volunteers reported being suitably placed, able to cope with their volunteering activities and felt that their efforts were appreciated by their volunteer organisations. Findings from this study do not support the notion of differential benefits of volunteering for the younger and older old.

Reasons for Stopping

The numbers who remained in the study and reported stopping volunteering were relatively small (N=45). The figures in table 4.3 suggest that the reasons offered by people for stopping were more likely to be personal rather than linked to organisational factors. An in-depth qualitative study using a sample of volunteers who had stopped volunteering was used to explore this issue in more detail.

Hours spent volunteering

On average men reported spending more hours volunteering than women. The average number of hours spent volunteering in the 4 weeks previous to completing the survey increased significantly between 6 months and 12 months from 22 to 26 hours. This increase was reported by both men and women and for the younger (50-69 years) and older (70+ years) age groups.

The average number of hours reported decreased from 12 months to 18 months for both men and women in the 70+ age group and for women in the younger age group. Younger men reported an increase in the amount of time spent volunteering from 6 months to 18 months. Contrary to the findings of other studies who reported relationships between hours spent volunteering and health, results in this study indicated that neither physical nor psychological health scores were associated with

the amount of time spent volunteering. This was true at the 6, 12 and 18 month time points post baseline.

Health and Quality of life

For reported physical health, there was a general improvement in scores over time as assessed by the WHOQOL-BREF. The WHOQOL-BREF's psychological well-being scores displayed a pattern of maintenance and stability over the time period as did reported levels of social support and self-reported body mass index (BMI). Activity levels declined slightly over the 18 month period but moderate activity levels were maintained.

Comparing the percentages agreeing with various quality of life statements (table 6) shows a similar maintenance pattern over the time periods with the majority of respondents expressing positive views in relation to quality of life, enjoyment of life, a meaningful life and mobility. Relatively fewer endorsed negative attitudes (limited by pain, negative feelings) over the time period.

Physical Health

Physical health scores using the WHOQUOL-BREF were lower than those reported in community dwelling older people living in Scotland but subsequent improvements in reported physical health over time among the volunteer cohort resulted in higher average health scores than those reported for Scottish older adults.

Psychological Health

The psychological health scores using the WHOQUOL-BREF were also consistently higher among the volunteer sample. In addition, the physical and mental health scores obtained from the volunteers compared favourably to normative data from a recent large scale study of WHOQOL-BREF scores across twenty-seven disease groups/ health conditions at 38 UK sites in a wide range of settings (Skevington and McCrate, 2011). Compared to 'well' samples the volunteers reported lower physical health scores at baseline but their improvements in physical health over time brought their scores closer to these 'well' groups. In terms of psychological wellbeing, the

volunteer sample scored on average consistently higher than both the 'well' and 'unwell' samples.

General Health Questionnaire (GHQ-12)

Scores on the GHQ-12 were calculated in order to compare the percentages 'at risk' of psychiatric disorders (a score of 4 or more) in the volunteer sample with recent population estimates in Northern Ireland, England and Scotland. Results showed that both male and female volunteers exhibited lower overall risk of psychological disturbance compared to Northern Ireland population estimates at the same age. The risk for volunteers was also lower than estimates in Scotland and England.

Attitudes to Ageing (AAQ)

Positive attitudes to ageing tended to grow slightly over the time period (Psychological growth) with negative attitudes (Psychosocial loss and Physical change scores) remaining stable. This was consistent with stability and maintenance in psychological health whilst there were notable overall improvements in reported physical health.

Physical activity levels

Among volunteers in this study, the overall pattern of physical activity levels was also one of maintenance for moderate activities. The reductions observed in vigorous activity levels over an 18 month period may in part be due to the natural ageing process, especially among the oldest old in the sample.

BMI

Men and women aged 50-59 tended to be in the moderately overweight BMI classification (BMI 25-30) but females in the older group (70+) were more likely to be of normal weight or slightly under (BMI=25) . These percentages persisted over the four time periods for both men and women. The stability in reported BMI over the three time points is related to maintenance in moderate activity levels for the same period with a slight reduction in vigorous and mild activities.

Conclusions

For older people, the maintenance of health and the prevention of decline associated with retirement and ageing may be highly valued. The modest improvements in physical health and the stability in mental health scores in this age group should therefore be interpreted in a favourable light.

2.0 Introduction - the Unlocking Potential Project.

The 'Unlocking Potential Project' is a five year initiative which began in 2008. It is funded by The Atlantic Philanthropies and managed by Volunteer Now. The overall aim of the project is to encourage and support healthier ageing and civic engagement in Northern Ireland, by enabling and empowering older people to take part in volunteering. Over the course of the 5 years, the project shape and direction has been informed by ongoing pieces of primary and secondary research. This research report is one of a number of pieces of work that have been completed. The full range of research reports that the project has carried out can be found by going to http://www.volunteernow.co.uk/publications and searching under 'Older People Volunteering'.

The project had a number of specific objectives which are listed below:-

- To challenge attitudes and raise awareness of the contribution and benefits of volunteering;
- To increase the number of older volunteers over the next five years (50-64 year olds by 5% and 65+ year olds by 10%). In numeric terms this equates to an expected increase of 7,650 volunteers;
- To improve access to and develop volunteer opportunities for older people that meet their expectations and positively impact on communities; and
- To enhance older people's quality of life in relation to equality, social inclusion, support and health issues.

2.1 Background

As part of the 'Unlocking Potential' project in 2010, Volunteer Now commissioned the University of Ulster's School of Psychology to help carry out a longitudinal questionnaire survey among the 50^{+} age group in Northern Ireland engaged in formal volunteering activities across a range of volunteer involving organisations. There is currently a lack of detailed empirical evidence based research in Northern Ireland examining the relationship between volunteering and health. This study is intended to complement and supplement findings from two reports - 'Making the

Connection' (2009) and 'Making the Connection 2' (2011). Both of these reports are available to download from the Volunteer Now's website at http://www.volunteernow.co.uk/publications.

This report was prepared by the University of Ulster (School of Psychology) and Volunteer Now following the release of two previous interim reports at key time points in the project. This report also complements the findings of a parallel qualitative study based on focus groups and interviews with volunteers (who were participants in this longitudinal study) and non-volunteers carried out by the same team which also provided an in-depth examination of the complex interplay between ageing, aspects of volunteering and health.

All reports have a focus on the 50^{+} age group in Northern Ireland in terms of increasing our understanding of how their volunteering experiences relate to their self-reported health and quality of life. These reports serve to provide an up to date picture of the volunteering and health patterns among this age group in Northern Ireland. This age group is one which is growing as a proportion of the overall population of Northern Ireland and one that is, therefore, gaining increasing influence over the shape of the political, economic, social, cultural and general civic landscape here.

2.2 Current evidence on volunteering and health

In line with global trends in population ageing, particularly in more developed countries, the population of Northern Ireland continues to grow and age. One view espoused by Jackson and Howeback in 1999 was that a so called 'dependency crisis' would arise in many countries which to some extent can be ameliorated by the participation of older people in socially productive and valued activities such as caring and volunteering. Studies of older populations have shown that later life is often a time of declining health but engagement in socially productive activities can lower the risk of all-cause mortality (Glass et al., 1999; Menec, 2003) and are associated with improved health outcomes (Bath and Deeg, 2005), survival (Maier and Klumb 2005) and happiness (Menec, 2003). For example, Okun et al., (2011)

examined whether organisational volunteering might moderate the effect of declining health on older adults' longevity. Building upon the findings of a US study by Harris and Thoresen (2005) of 7527 community-dwelling older people (> 70 years) which found that frequent volunteers were more likely to live longer, the authors studied whether volunteering buffers the relationship between functional limitations and the risk of mortality. Functional limitations refer to health related differences in carrying out daily activities such as shopping, cooking etc. (Miller et al., 2006). This prospective study used baseline survey data from a representative sample of 916 non-institutionalised adults aged 65 years old and older in the US. Data on mortality were extracted six years later from the National Death Index. The authors concluded that functional limitations were associated with an increased risk of mortality only among participants who never or almost never volunteered, which suggested that volunteering buffers the association between functional limitations and mortality. The authors concluded that that although it may be more difficult for older adults with functional limitations to volunteer, they may receive important benefits from doing so.

In addition, evidence is accumulating which shows that engagement in socially productive activities such as volunteering may also improve the quality of life in older people. Using data from the English Longitudinal Study on Ageing (ELSA), Nazroo and Matthews (2012) compared changes to the wellbeing of retired volunteers and non-volunteers over a two year period. Four indicators of wellbeing were used: depressive symptoms, quality of life, life satisfaction and social isolation. An examination of changes over the period showed that volunteers improved compared to non-volunteers on the first three indicators and the differences between volunteers and non-volunteers was only partially explained by socio-economic and health differences. In addition, results showed that the size of the difference related directly to the number and frequency of volunteering activities indicating a dose-response effect.

In the Republic of Ireland, the TILDA study of those aged 50^{+} examined quality of life in older adults in relation to frequency of engagement in voluntary activities (Barrett et al., 2011, p.56). The study showed that mean Quality of Life scores as assessed by the CASP-19 were lowest within the population that never volunteers regardless

of age group, with smaller increases in quality of life associated with increasing volunteering frequency. A recent comprehensive review by Cattan et al., (2011) of articles published between 2005 and 2011 reported on evidence from 22 studies and 5 review articles that addressed the benefits of volunteering on older people's quality of life. Most of the research cited has been carried out in the United States, Canada and Australia with the majority of studies showing positive associations between volunteering and quality of life. The review concluded that "*volunteering may help to maintain and possibly improve some older adult's quality of life*." (p. 328).

Similar evidence in relation to health maintenance comes from Wahrendorf and Siegrist (2010). Using waves 1 and 2 of the Survey of Health, Ageing and Retirement in Europe (SHARE), the authors looked at data from people aged 50 or over across 11 European countries (N=10,309) to examine the dynamics of participation in two types of activities (volunteering and caring). Specifically, the authors were interested to see if such activities were linked to changes in well-being, assessed using a standardised instrument of quality of life (CASP-12). Quality of life scores were compared at two time points using the first two waves of the SHARE data set (Börsch-Supan and Jürges, 2005) collected between 2004 and 2007. They found that decreases in wellbeing, as assessed by quality of life were less likely to occur for those who remained active at both waves or started volunteering between both waves, if they lived with a partner, if their social position was high, and importantly, if they were free from functional limitations. Wahrendorf and Siegrist concluded that

" …being engaged in volunteering, while preventing a decrease, does not seem to be associated with a substantial increase in quality of life" (p. 65).

Volunteering per se was not associated with a relevant increase in well-being and this evidence is therefore consistent with Cattan et al.'s (2011) conclusions that that volunteering among older people is more likely to be associated with health maintenance than improvement.

More recently, a systematic review by Jenkinson et al., (2013) of both experimental and cohort studies examining the influence of formal volunteering type and intensity on health outcomes in the general adult population concluded that the

> *"…observational evidence suggest that volunteering may benefit mental health and survival but that the causal mechanisms* (still) *remain unclear...) (p773).*

This review also cites three studies which showed that older people may be more likely to experience reduced functional dependency and fewer depressive symptoms through volunteering compared with younger volunteers (Kim and Pai, 2010; Li and Ferraro, 2006; Musik and Wilson, 2003).

Northern Ireland Context

Northern Ireland has a vibrant volunteering base. Figures from the 2007 'It's All About Time' survey show that there are 282,067 people over the age of 16 involved in formal volunteering, these are people who are carrying out unpaid work with, or under the auspices of, an organisation. In percentage terms it has been estimated that 21% of the Northern Ireland population are involved in 'Formal Volunteering'. It has also been estimated that in 2007 the economic value of 'Formal Volunteering' was £433 million. There is substantial evidence which demonstrates the important role that volunteers have in the sustainability and capacity building of many organisations[1]. Almost 8 out of 10 organisations questioned in 'It's All About Time' stated that they could not operate without the support of volunteers (Volunteer Development Agency, 2007).

The age profiling of volunteering shows that people are less likely to volunteer as they move beyond 60 years old. On average, 21% of people of all ages are involved in volunteering, however, the figures decrease to 17% in volunteering for the population who are 65+ years old. Overall, the 65+ age group are the least likely to volunteer formally. Despite this, research has shown that older volunteers are most

[1] The majority (37%) of all volunteering occurs in the voluntary and community sector (75,000 volunteers).

likely to volunteer once a week and to give more time than any other age group (Volunteer Development Agency 2007). We also know that people generally are more likely to volunteer informally than formally (35% of the NI population volunteer informally). Recent research conducted with the 50+ age in NI found that older people volunteer informally for longer than they do formally (Volunteer Now, 2011a). It is a particularly pertinent time to address the propensity of volunteering within the 50^{+} age group since the population of Northern Ireland, as in the rest of the world, is aging (US Census 2009). This is due to a number of factors which include the fact that people are living longer. However, as the proportion of older people increases, there is concern that a smaller proportion of the working population will be supporting retirement funds of an increasing number of the older population of pensionable age (Evason et al., 2005). There is also the expectation that there will be increasing demand on the health and social care system as people move into 'old age'. In Northern Ireland the heaviest use of health services and poorest mental health is found in people aged 75^{+} years (Evason et al., 2005). A report from Help the Aged (2008) indicated that social isolation and depression are the biggest issues for older people living here. The report also found that 21% of those aged 65^{+} stated that they are 'always or often lonely', 1 in 4 people aged 65 years and over spend more than 15 hours home alone per day and 53% stated that television was their main form of company (Help the Aged 2008). Also a recent study carried out in the UK has uncovered an epidemic of late onset drinking amongst the over 60's (Foundation66, 2009).

Maintaining the health of the population is a key policy concern for the Northern Ireland government. Reducing demands on the health and social care system from preventable illnesses or illnesses where the onset could be delayed is a particular target area. The last few years has witnessed a number of public policy consultations focused on major public health planning. 'Transforming Your Care' outlines proposed changes to how health and social care services will be delivered in the future. One of the key high level objectives is to keep people healthy and independent as long as possible by investing in health promotion and illness prevention (Health and Social Care Board, 2012). The Northern Ireland Executive has also published a consultation on a 10 year strategy for public health in N.Ireland called 'Fit and Well'

(2012). A key focus of this strategy is taking a 'life stage' approach. These major public policies also emphasise the importance of cross-departmental and cross-sectoral collaboration. The community and voluntary sector offer a wide range of services and support for communities. More specifically, volunteers also support many of the initiatives and programme of activities that will be required to address health inequalities by delivering on the key outcome areas listed in public health frameworks (i.e. community safety, community driving schemes, health promotion initiatives, befriending schemes etc).

The Department for Social Development (2011) is leading on the first Volunteering Strategy for Northern Ireland. The overriding objective within it is to develop volunteering both in terms of numbers and diversity of people volunteering and in the quality of the opportunities. The Strategy envisages a society in which people are encouraged to volunteer from the earliest age possible.

'Ageing in an Inclusive Society' is the main strategy focused on supporting older people in N. Ireland (OFMDFM, 2005). However, OFMDFM is currently consulting with a working group consisting of ageing sector partners to develop a new strategy for supporting older people. The UN 'Principles for Older People' are an underlying value base for this new strategy and which has 'active ageing' as its central vision.

There is also an increasing sense across both local and central government that volunteering as a form of active citizenship or community engagement is important for healthy individuals as well as healthy communities. There is a body of research which is helping to understand the significance of volunteering as a way of impacting positively on individual health and reducing health inequalities.

In addition, a study carried out by the Volunteer Development Agency (2009) found an interesting contrast in the attitude and life satisfaction of the volunteers and non-volunteers who were aged over 65. The volunteers described feeling like they were making a useful contribution to society, having great satisfaction and a sense of self-worth, whereas the non-volunteers described feeling under-valued and stuck in a routine of day to day life. The health and social benefits of volunteering were

highlighted by respondents in this research. The benefits were more likely to be mentioned by the volunteers than the non-volunteers. The non-volunteers, particularly the older respondents (aged 65+), were more likely to use health concerns as a reason for not volunteering. This finding has been suggested in other research (Mellor et al., 2008). Furthermore, research has also identified the fact that volunteering can be seen by some older volunteers as a risk factor for poor health rather than having an enhancement role (Lum and Lightfoot, 2005). This research also found differences between the volunteers and non-volunteers in terms of 'life satisfaction' and this included their attitudes to ageing and moving into retirement.

Retirement can be a particularly stressful life event. Moving out of the workforce and into retirement also brings with it a change in lifestyle. A recent study from the English Longitudinal Study of Ageing (ELSA) found that retirement significantly increases the risk of being diagnosed with a chronic condition such as cardiovascular disease and cancer. Lupton et al., (2009) has reported a significant effect of later retirement age in delaying the age of onset of Alzheimer's disease for men. It also suggested that maintaining cognitive activity helped to reduce the risk of dementia. Greater involvement in social and leisure activities and fewer television viewing hours were also reported as reducing the risk. As there is a strong association between increasing age, reduced social activity and increased television viewing (Help the Aged, 2008**), it** is important that initiatives are put into place which help to promote and encourage healthy activities as a lifestyle choice.

All volunteers bring their own value to the voluntary work they carry out. Older volunteers, in particular, have been recognised for their particular set of skills (Gill, 2006; Hill, 2006, Hoffman, 2008; Rochester and Thomas, 2006; Volunteer Development Agency, 2009). As a consequence of the demographic shift, older people are becoming an increasingly untapped resource for volunteering (Volunteer Development, 2009). Volunteering is a two-way process in which people give time and energy to a charitable cause with no expectation of financial gain or other material benefit (Volunteer Development Agency, 2001). Older people can also be a particular resource in complementing the health and social care system through assisting organisations in a voluntary capacity. In addition, the benefits of getting

involved can be multiple and varied and cross physical, mental, social and economic boundaries (Volunteer Development Agency, 2001). Some reported health impacts which have been associated with volunteering include lower blood pressure, stronger immune system, the ability to cope with one's own illness, improvements in self-rated health, improved self-esteem, reduced social isolation, increased social support and interaction, improved life satisfaction, healthy behaviours and enhanced community links and connectedness (Graff 1991, Hill, 2006; Musick and Herzog 1999, Herbert 2008, Price 2007, Rochester and Thomas, 2006, and Volunteering England 2008, Volunteer Development Agency, 2007). In the UK, the Institute of Volunteer Research (2008) has also provided support for the beneficial effects of volunteering on older people's physical and mental health. They found that people who had retired from work were particularly likely to receive a sense of purpose, role identity, self-respect and reduced isolation from volunteering.

There is a clear argument that maintaining civic engagement and community activity is important for maintaining the physical and mental health of older people. There is continuing debate regarding the causal relationship between health and volunteering. The University of Wales Lampeter carried out a systematic review of existing research to ascertain the health impacts of volunteering on individual volunteers and on health service users. The report showed very clear links between volunteering and positive health impacts. In particular, the review highlighted that older volunteers appeared to derive greater health benefits than younger volunteers (Volunteering England, 2008). The Corporation for National Community Service in the US suggests strongly that people who engage in volunteer activities were less likely to suffer ill health later in life and that volunteer activities introduced people into a positive 'reinforcing cycle' of good health and future volunteering (2007). Herbert (2008) investigated the possible effect of volunteering across age groups in the Northern Ireland context. From this report there was the strongest research evidence for the impact of volunteering on the physical health and mental health of older people. It suggested that voluntary work had positive effects on the depression scores of those people who were aged 65^{+} years. As depression is one of the most significant problems for older people in Northern Ireland, it would be useful to investigate the impact of volunteering on the health of the older population further. A

systematic review by Casiday et al. (2008) concluded that the majority of research papers in this area were from the US, including all of the large scale longitudinal studies of health impacts on volunteers, thus pointing to a need for a UK based longitudinal study of the health of volunteers.

Also, the majority of studies examining the health impacts of volunteering have been related to volunteering in general rather than any particular setting or role. This research will examine contextual factors such as setting and focus its focus specifically on older adults (50^{+}) since older volunteers appear to derive greater benefit from volunteering than younger ones (Van Willigen, 2000; Li and Ferraro, 2006). The uniqueness of this research therefore lies in the cultural context, the target age group and the design of the study. The use of a longitudinal designs allow for the measurement of continuous change over time. Rather than simply comparing a person's 'before' and 'after' status, longitudinal growth modelling is a more subtle and effective way of revealing the features of individual change trajectories over time (Willett, Singer & Martin, 1998). In addition, the collection of data at 4 time points allows for the assessment of linear as well as non-linear health trajectories across differing volunteering experiences.

2.3 Policy context

Volunteering is a powerful tool in encouraging active citizenship and engagement and plays a key role in addressing key government priorities which are focused on older people which include active ageing, healthy living, social inclusion, equality, citizenship and community safety. In March 2005 the Government launched "Ageing in an Inclusive Society: a strategy for promoting the social inclusion of older people". The strategy aimed to "to ensure that age related policies and practices create an enabling environment, which offers everyone the opportunity to make informed choices so that they may pursue healthy, active and positive ageing". This document is currently under review with a new document expected to be released for consultation in 2013. In addition, the Department for Social Development published the current 'Volunteering Strategy for Northern Ireland in May 2011' following an extensive consultation period, and this strategy was subsequently agreed by the

Northern Ireland Executive at its meeting in June 2011 (see the full consultation response document at http://www.dsdni.gov.uk/index/voluntary_and_community.htm. Both of these strategies reinforce the importance of older people and volunteering as key public policy priorities in Northern Ireland.

2.4 Aims of the project

Main Research Question

Are there health and wellbeing benefits for the over 50's, in Northern Ireland, who engage in formal volunteering?

The main objectives of the final study are to:

1) Assess whether involvement in formal volunteering is related to older people's reported physical and mental health, attitudes to ageing and activity levels and BMI.
2) Assess whether the experiences of formal volunteering among older people (50^{+}) predict changes in health over an 18 month time period. Specifically, the study aims to determine the extent to which formal volunteering activities moderate the relationship between ageing and health, and whether the volunteering experience has an impact on natural trajectories of health improvement, maintenance or decline.
3) In addition, the study will examine whether demographic variables (e.g. age, sex, living alone, retirement), attitudes to ageing and levels of reported social support mediate the relationship between volunteering experiences and health and whether such variables predict variations in individual health and wellbeing trajectories over time.

2.5 Summary of Methodology

2.5.1 The sampling frame

Fiedwork for the study began in March 2010. The investigation employed a mixed methods approach comprising a longitudinal questionnaire survey of older adult volunteers in Northern Ireland over a period of 18 months, complemented by the strategic use of focus group interviews with a cross-section of older volunteers and non-volunteers.

The design of the study provided a useful longitudinal framework for the evaluation of change in reported health status with baseline data collected from both older participants undertaking formal volunteering activities for the first time and existing older volunteers with some previous volunteering experience. Data collection was completed in July 2012.

In addition to the quantitative study, focus group interviews were conducted among distinct older groups (older volunteers with a range of volunteering experiences and older non-volunteers). The findings of these initial focus groups held in 2011, as well as in depth interviews with a number of the longitudinal study participants will be reported in parallel with this study.

2.5.2 Measures

The quantitative questionnaires at each time point contained common questions relating to the following themes:

The number of physician-diagnosed health conditions.

An adaptation of Lum and Lightfoot's (2005) classification was presented as a series of YES/NO questions to 7 general medical conditions (High blood pressure, diabetes or high blood sugar, cancer or a malignant tumour of any kind, chronic lung disease, heart attack or other heart problems, stroke, arthritis/rheumatism).

Self-reported height and weight.

Responses to these questions were used to calculate each respondent's Body Mass Index (BMI).

Satisfaction with volunteering experience.

This consisted of a general satisfaction question scored on a 5-point ranked scale from very dissatisfied to very satisfied, as well as a series of 4-point questions relating to endorsement of various aspects of the volunteers' experience at 12 months (e.g. being appreciated, being supported, being given opportunities to do the things they like to do, coping with the demands of volunteering and balancing home life).

Time spent volunteering

Respondents were asked to record and estimate of the number of hours spent volunteering the previous 4 weeks.

Quality of life and mental health.

The World Health Organisation's Quality of Life- Brief Instrument (WHOQOL-BREF) consists of 26 items assessing four domains of quality of life (Physical Health, Psychological, Environment and Social relationships). The three questions relating to the social relationships domain were dropped and replaced by six questions from the LSNS-6. To reduce the questionnaire length only the Physical and Psychological domains were employed. The Physical domain contained seven questions, each measured on a 5-point Likert scale relating to activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity. The Psychological domain contained six similarly scored Likert type items relating to bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality / religion / personal beliefs, thinking and concentration. In addition to the physical and psychological domain scores and the WHOQOL-BREF also contains two separate items asking about an individual's overall perception of their quality of life and their health. Both items were presented on a 5-point Likert scale from 'very poor' to 'very good'. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores were also then scaled in order to make domain scores comparable with the scores used in the larger WHOQOL-100 instrument and to facilitate international comparisons with other studies of older people that have used the WHOQUOL-BREF in this way.

Attitudes to Ageing (AAQ).

The Attitudes to Ageing Questionnaire (AAQ) devised by Laidlaw et al., (2007) is a self-report measure with which older people can express their attitudes to the process of ageing. It contains 24 items aimed at assessing three attitudinal sub-scales (attitudes to physical change, psychological growth and psychosocial loss).

Each subscale contains 8 items assessed on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The physical change subscale focuses on physical functioning with items related primarily to health, exercise and the experience of ageing itself. Scale 2 is explicitly positive in focus and can be summarised as a 'Wisdom' or 'Growth' scale; with items reflecting both positive (and possible surprising) gains from ageing in relation to the self and to others. Scale 3 examines psychosocial losses relevant to older adults in which old age is seen primarily as a negative experience involving psychological and social loss. Scores on each subscale are derived by equally summating all 8 items and each subscale scores ranged from (0-32) with higher scores indicating greater, more positive attitudes to physical ageing, greater personal growth, and greater psychosocial loss respectively. Total subscale scores were averaged by dividing each scale by 8 in order to facilitate comparisons of each scale. Although the psychosocial loss scale contained negatively phrased items and these were not reverse scored when calculating the domain score in order that a high score on this subscale indicated high psychosocial loss.

Social contact and support.

The Lubben Social Network Scale-6 (LSNS-6) is a six-item abbreviated version of the Lubben Social Network Scale (Lubben et al., 2006). The LSNS-6 has two sub-scales (friends and family) with each subscale containing three questions relating to the number of friends or relatives the respondent has been in contact with/ feels at ease with or feels close to on at least a monthly basis. Responses to all scale questions ranged from none to nine or more friends/relatives placed on a 6-point Likert scale. The LSNS-6 total score is an equally weighted sum of these six items. Scores range from 0 to 30 with higher scores indicating more social contact and support.

Activity levels/ functional status.

Three questions were included relating to activity levels during the previous seven days. Respondents were asked how many days in the previous week they had been engaged in vigorous, moderate and mild exercise for at least 10 minutes. Examples of vigorous exercise offered were running, aerobics, heavy gardening with examples

of moderate exercise given as cycling, vacuuming, gardening and mild exercise defined as walking at a brisk pace. Three other Likert type questions on 5-point Likert scales assessed respondents' satisfaction with their ability to 'perform daily acts', ability to 'get around' and the extent to which physical pain prevents them from doing what they need to do.

Self-reported height and weight (Body Mass Index).

Body Mass Index (BMI) is defined as a person's weight in kilograms divided by the square of their height in metres. It is one of the most commonly used ways of estimating whether a person is overweight and hence more likely to experience health problems than someone with a healthy weight. It is routinely used by researchers and clinicians worldwide to measure population prevalence of overweight and obesity (National Obesity Observatory Report, 2009). Responses to questions on height and weight were used to calculate each respondent's Body Mass Index (BMI). BMI is calculated by dividing body weight (kilograms) by height (metres) squared. An adult BMI of between 18.5 and 24.99 is classified as 'normal/healthy', with a BMI in the range 25 and 29.9 classified as overweight and a BMI of 30 or over classified as obese .

General Health Questionnaire (GHQ-12)

At the 18 month final time point, respondents were asked to complete the General Health Questionnaire (GHQ-12) (Goldberg and Williams, 1988). This is a widely used self-report screening instrument for depression. The GHQ - 12 is designed to focus on breaks in normal mental functioning and on the emergence of symptoms of mental distress. It is a commonly used instrument in clinical, community and other forms of research both nationally and internationally. The Questionnaire contains 12 items (symptoms of mental health problems) and respondents are required to indicate whether they have experienced any such symptoms of psychological distress in the two weeks prior to completing the questionnaire. The GHQ-12 is therefore a measure of transient psychological ill health.

The scale consists of 12 items where respondents must indicate the occurrence or non-occurrence of various symptoms of psychological ill-health on a four point scale

- '*much more than usual*', '*no more than usual*', '*less than usual*', '*not at all*'. Although each item has four response categories, there are various methods of scoring the GHQ-12. Goldberg (1972) proposed the collapsing of adjacent response categories to obtain a dichotomous (0-0-1-1) scoring system for each item. This scoring method was used to facilitate direct comparison with the Health Study for Northern Ireland 2011/12 figures.

Nature of the volunteering organisation.

Respondents were asked to provide the name of the host organisation they mainly volunteer with and these were subsequently classified by Volunteer Now in terms of the nature of the organisation (i.e. Voluntary/community, statutory, church/faith-based or other), the sub-sector to which the organisation can best be placed (older people, community development, disability, advice/information, arts/culture/heritage, Young people/children, disability, education/training, health and wellbeing, other) and the estimated annual income of the organisation (less than £1000, £1K-£10K, £10K-£100K, £100K, £100-£250K, £250K-£500K, more than £500K).

Also, Volunteer Now collected additional information on organisational recruitment and support practices from approximately 62% of the organisations which provided volunteers for this study. This information was appended to the volunteer data to enable comparisons on satisfaction with volunteering experiences across the sector.

Demographic questions

Questions were also included on sex of respondent, age, marital status, retirement status, living alone or with others, and the nature of the volunteering experience.

In addition to the commonly assessed questions over the four time points, some variations in the content of the four time point questionnaires are worthy of note. The baseline questionnaire contained questions on individual motivations for volunteering, whereas the time point 2 questionnaire replaced these questions with items relating to the volunteering experience (i.e. the perceived personal benefits of volunteering) and also included questions on volunteering quantity (amount of hours per annum) and quality (nature of the role). The time point 3 questionnaire

subsequently replaced the volunteering experience items with somewhat different questions on the perceived positive and negative aspects of volunteering, and these questions were again asked at time point 4.

2.5.3 *Summary of themes and time frame*

Table 2.1 summarises the four time frames for fieldwork in the quantitative study as well as the key themes assessed at each stage of the data collection.

Table 2.1

Summary of quantitative questionnaire content and fieldwork timings.

Baseline Questionnaire 1	***6 months Questionnaire 2***	***12 months Questionnaire 3***	***18 months Questionnaire 4***
Stage 1 Fieldwork March-November 2010	Stage 2 Fieldwork October 2010 - June 2011	Stage 3 Fieldwork May 2011-January 2012	Stage 4 Fieldwork December 2011 -June 2012
Common health/ and quality of life questions Questions on the types of volunteering activities Questions motivations / reasons for choosing formal volunteering	**Common health/ and quality of life questions** *PLUS* *Questions on…* The volunteering experience (perceived personal benefits of volunteering) Changes in circumstances in previous 6 months	**Common health/ and quality of life questions** *PLUS* *Questions on…* The volunteering experience (positive and negative aspects of volunteering) Changes in circumstances in previous 6 months	**Common health/ and quality of life questions** PLUS *Questions on…* The volunteering experience (positive and negative aspects of volunteering) Changes in circumstances in previous 6 months
Sample Response (N= 344)	**Sample Response (N=294 with 287 matched at both time points 1 and 2)**	**Sample Response (N=285 with 249 matched at 3 time points)**	**Sample Response (N=274 with 229 matched at 4 time points)**

Note: Text in bold highlights common questions presented at each time point.

3.0 Baseline Descriptions

3.1 Description of baseline sample

The baseline sample consisted of 344 participants (60% female and 40% male) whose ages ranged from 50 to 90 years (M=64.9, SD=7.6). The majority of respondents were aged 60-69 (51.2%) with smaller numbers in the older 80-89 category (n=14). The sample also comprised a mix of new (33.7%) and experienced volunteers (64.8%). The majority reported living with a spouse or partner (56.4%) with sizeable proportions indicating living alone (27.6%), having caring responsibilities (25.9%) and having with some form of disability (22.7%).

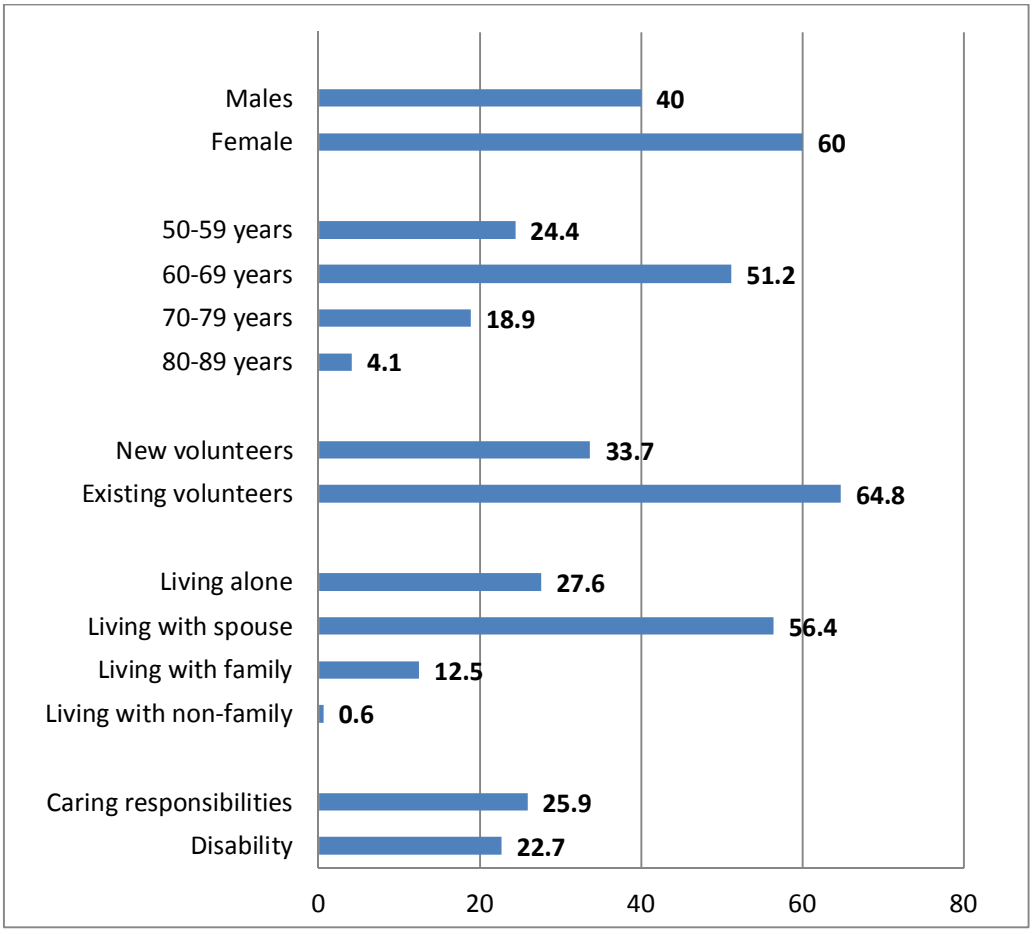

Figure 3.1 Demographic composition of sample at baseline (% of sample, N=344).

Socio-economic status

The majority of respondents were retired (69.8%) with smaller numbers in full-time or part-time work (18%) and unemployed (8.7%). The sample also reflected a wide range of weekly household incomes with a small proportion of very low household incomes (i.e. 1.7% on £99 or less per week). There were approximately equal numbers (10.2-11.9%) across the low to middle income bands and few in the higher income bands (19.7% reporting more than £650 per week). Approximately one quarter of volunteers preferred not to answer the income question.

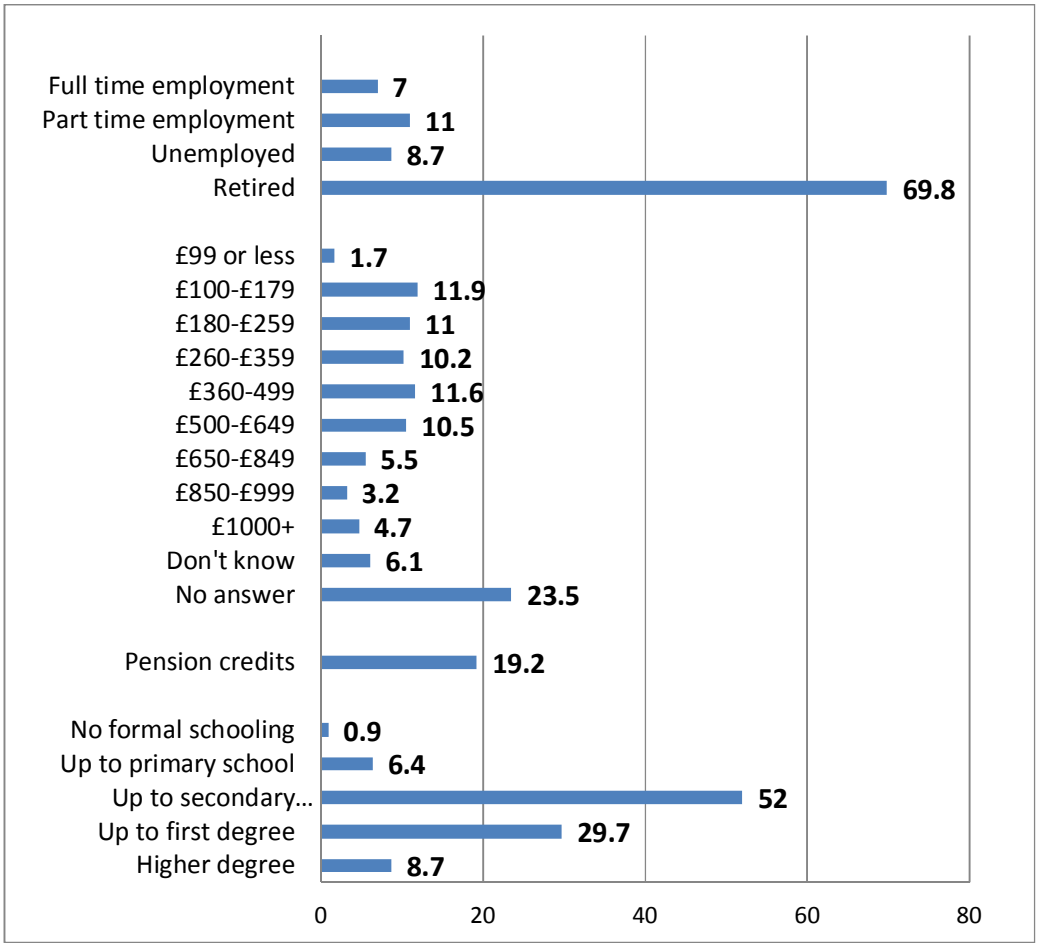

Figure 3.2. Socio-economic and educational composition of sample at baseline (% of sample, N=344)

Geographical distribution

All local Government districts were represented in the baseline sample, with urban areas accounting for proportionately higher numbers (e.g. Belfast, 21.8% and Derry-Londonderry, 10.5%). Table 3.1 shows that Belfast and the greater Belfast areas accounted for 38.1% of respondents with other regions represented approximately in line with regional variations in the population.

Observations=313 (91%)
Missing=31 (9.0%)
Total sample =344

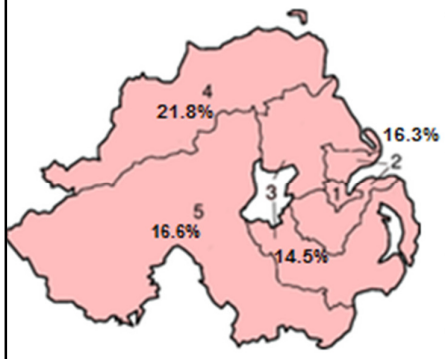

Table 3.1

Sample Response	Name	Area
21.8%	*1. Belfast*	Belfast
16.3%	*2. Outer Belfast*	Carrickfergus, Castlereagh, Lisburn, Newtownabbey, North Down
14.5%	*3. East*	Antrim, Ards, Ballymena, Banbridge, Craigavon, Down, Larne
21.8%	*4. North*	Ballymoney, Coleraine, Derry, Limavady, Moyle, Strabane
16.6%	*5. West & South*	Armagh, Cookstown, Dungannon, Fermanagh, Magherafelt, Newry and Mourne, Omagh

Figure 3.3: Survey of responses by EUROSTAT Nomenlature of Territorial Units for Statistics (NUTS) Level 3

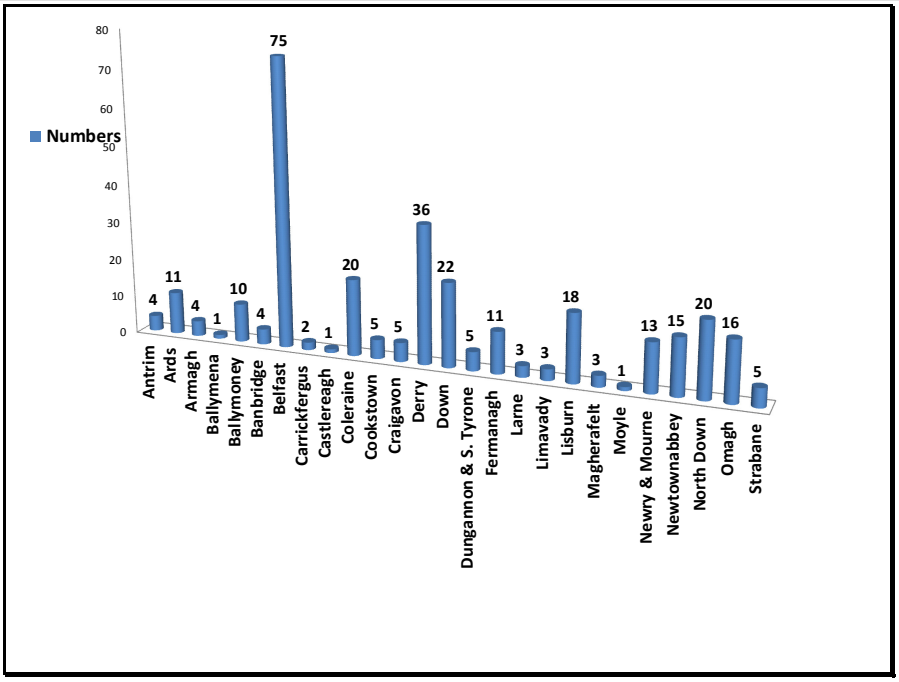

Figure 3.4: Survey responses by Local Government District (LGN)

3.2 Main activities carried out within volunteering organisations

Respondents reported involvement in a wide variety of activities, the most popular of which were organising/ running events (38.4%), giving advice (30.5%), befriending/mentoring (29.7%) and raising/handling money (29.1%). Volunteers were involved in various combinations of activities and so the percentages in figure 3.5 do not tally to 100%. Results here indicate diversity in terms of the range of formal volunteering activities being pursued by older people across the sector.

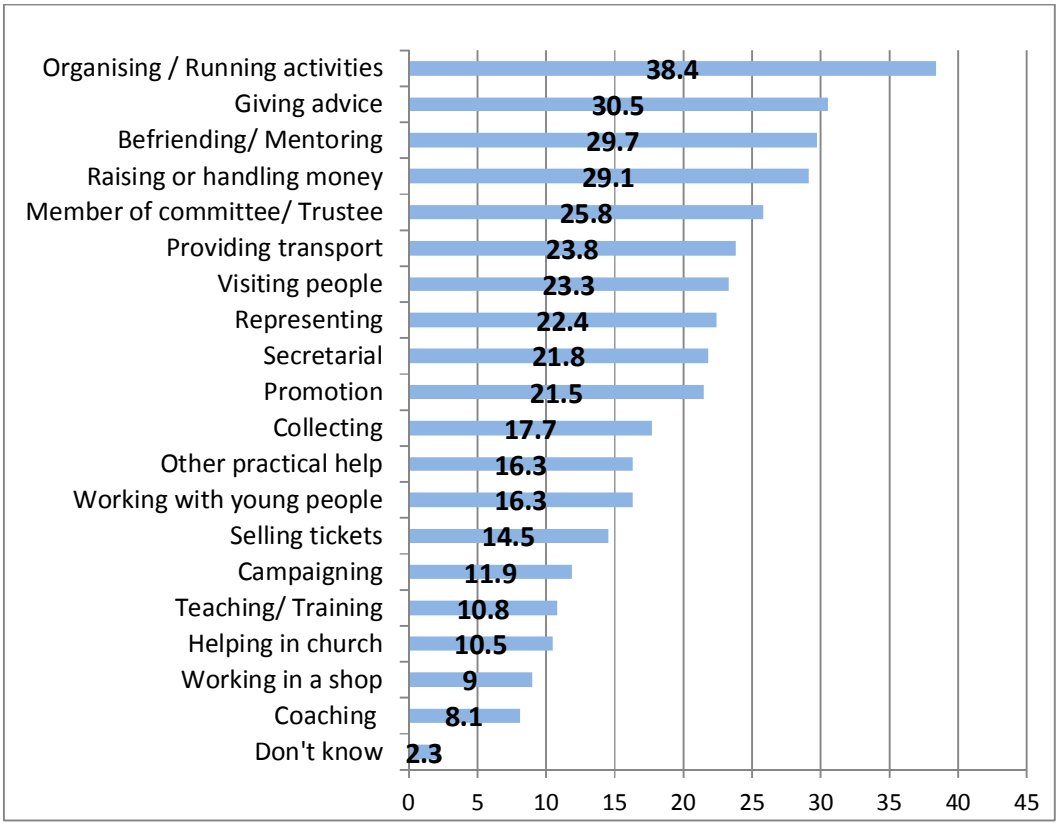

Figure 3.5. Main activities carried out by respondents in volunteering organisations at baseline (% of sample)

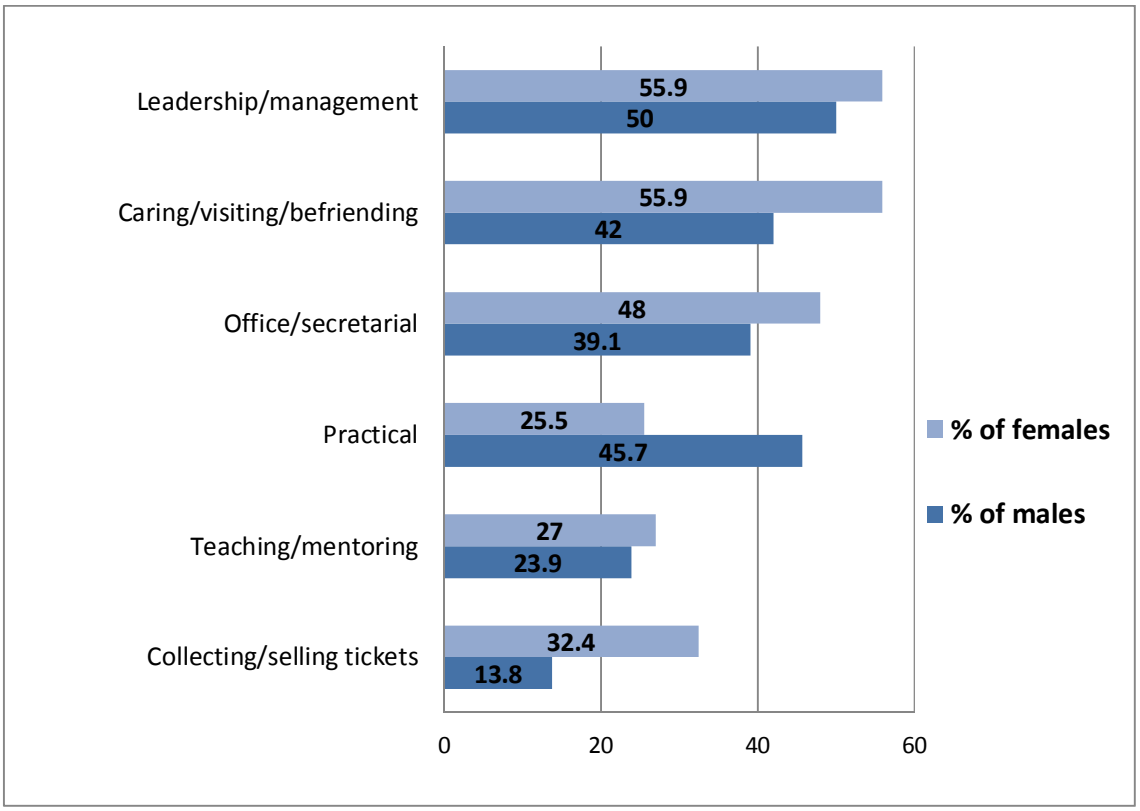

Figure 3.6. Percentage of volunteers involved in various types of activities at baseline by sex.

3.3 Reasons for volunteering

The reasons given for volunteering illustrate that many active volunteers in this age group have time to spare, skills to offer and the motivation to become involved in worthwhile activities they perceive as benefiting others in their community, while enhancing their own learning and enabling more social contact. Altruism featured highly with 65% of respondents wanting to 'improve things' through volunteering and 46.5% stating that the 'cause was important'. The self-enhancing role of volunteering is also emphasised with 54.7% motivated by the prospect of using their existing skills and 35.8% wishing to learn new skills. The desire to learn and acquire new skills does not appear to be related to improving their own career prospects with only 3.5% stating this as a motivating factor and only 4.7% interested in gaining formal educational qualifications. These findings concur with the reasons for volunteering cited in previous research with the 50+ age group in N. Ireland (Making the Connection report, 2009, p. 26).

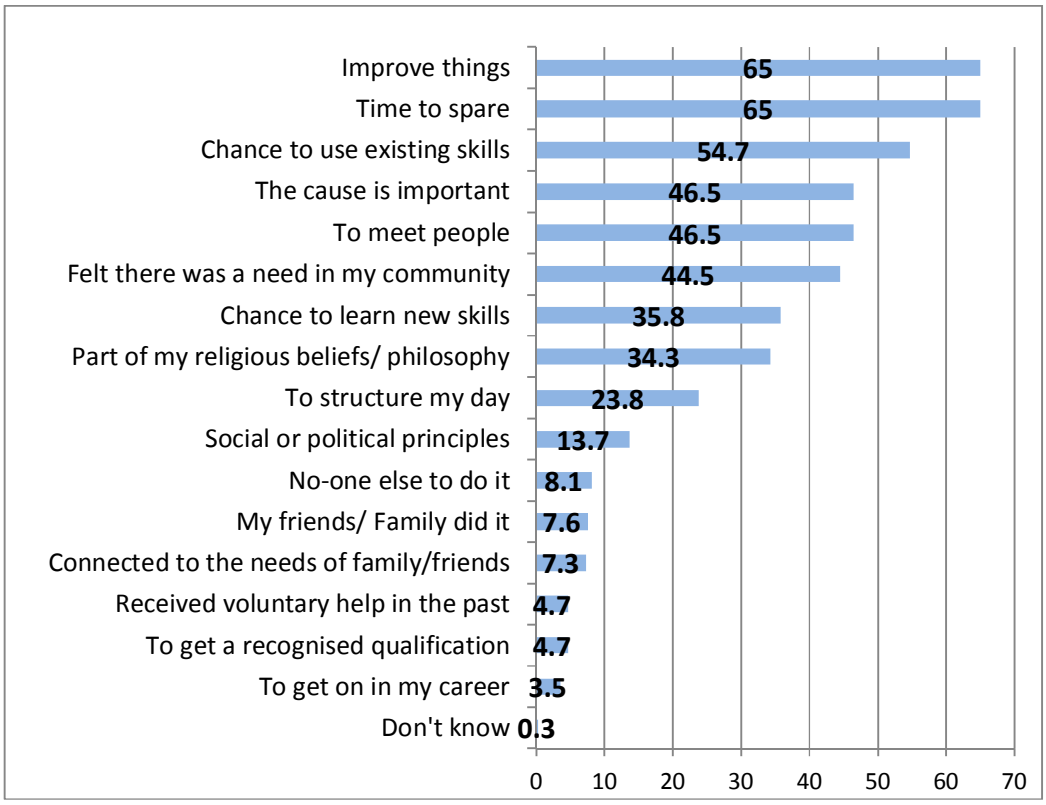

Figure 3.7. Reasons given for becoming involved in volunteering (% of sample)

3.4 Reported Health & Wellbeing

3.4.1 *Diagnosed medical conditions*

At baseline, just over half of the respondents (54.5%) reported that they had been diagnosed by a doctor as having at least one of the seven general medical conditions depicted in figure 3.7. Gender differences emerged in the reporting of medical conditions. Although proportionately more males (34.8%) than females (31.9%) reported having high blood pressure, this difference was not statistically significant [$X^2(1) = .317$, $p = .573$]. A statistically significant gender difference was evident in relation to the reporting of heart conditions with 18.8% of males and 6.9% of females reporting having heart related problems [$X^2(1) = .317$, $p = .573$]. Females on the other hand were more likely to report having arthritis/rheumatism (37.3%) compared to 18.8% of males [$X^2(1) = .317$, $p = .573$]. The reporting of diabetes was lower for both males (10.1%) and females (6.4%), with the reporting of stroke, cancers and chronic lung disease lower still (range 2.3% - 3.5%). No gender differences emerged in the reporting of these conditions.

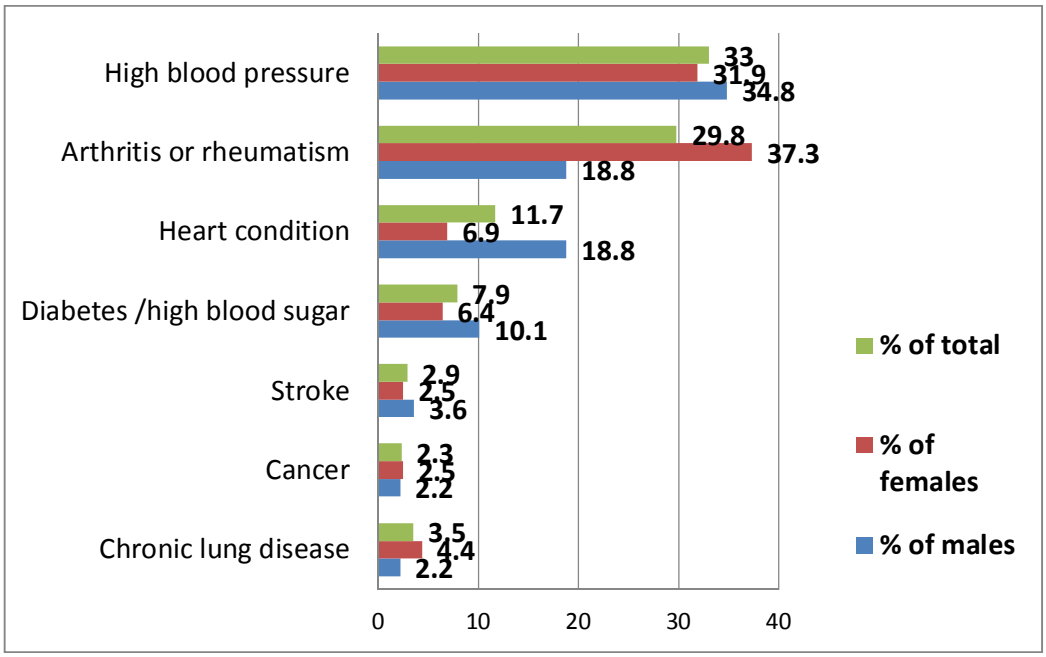

Figure 3.8. Percentage at baseline reporting various diagnosed medical conditions.

3.4.2 The number of diagnosed medical conditions

The percentage of the sample reporting being condition-free was 45.4%. Variation in this percentage by sex of respondent and their amount of volunteering experience was not statistically significant ($p > .05$). Figure 3.8 shows some age-related variations in condition free reporting but the overall test of this trend was not statistically significant [$X^2(3) = 5.29$, $p = .152$]. Although those in the oldest categories were much less likely to report being condition free (21.4%), the lack of statistical significance in the overall age trend is likely due to less pronounced reporting differences between the remaining age categories, particularly between the 60-69 year olds (45.5%) and the 70-79 year olds (41.5%).

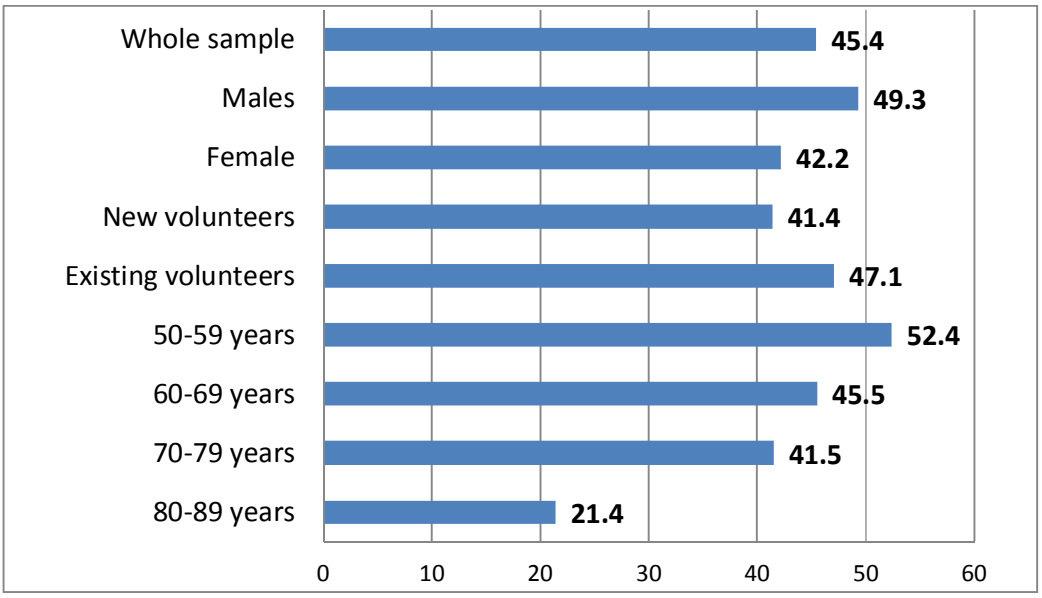

Figure 3.9. Percentage of sample at baseline reporting having NO diagnosed medical conditions by gender, volunteering experience and age.

3.4.3 Satisfaction with own health baseline

On the whole, the majority of volunteers were satisfied with their overall health (78.6%). There were no statistically significant differences in the reporting of health satisfaction by gender or volunteering experience ($p > .05$). The age differences in reported satisfaction showed that proportionately fewer 50-59 year olds (69%) expressed satisfaction with their health compared to the 60-69 year olds (79.8%), and the 70-79 year olds (89.2%). This finding is somewhat counter-intuitive and may be explained by decreasing expectations of good health as people age or an attrition of 'unhealthy' volunteers from the volunteer population as volunteers age. Overall, the results on health satisfaction concur with figures cited in the 'Making the Connection 2' report (2011) from the Continuous Household Survey (CHS, 2009-10), which showed that 77% of the 50^{+} age group reported their health to be 'good' or 'fairly good'.

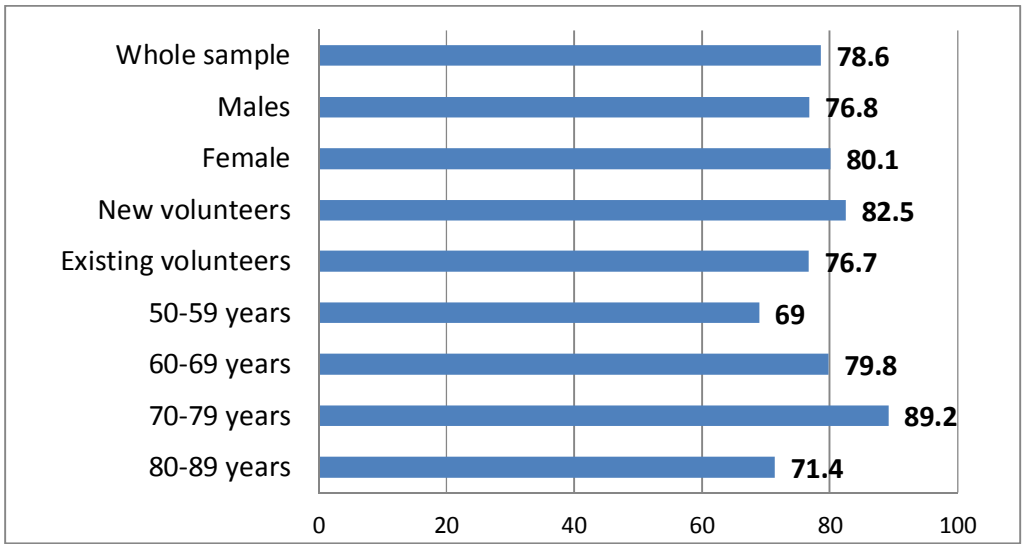

Figure 3.10. Percentage of sample at baseline reporting being 'satisfied' or 'very satisfied' with their own health by gender, volunteering experience and age.

3.4.4 Functional Status at baseline

In terms of volunteers' perceived ability to perform general daily activities, a large proportion indicated high self-efficacy in this regard. Although higher percentages of new volunteers and those in the oldest two age groups responded positively to this question, these differences were not statistically significant (p >.05).

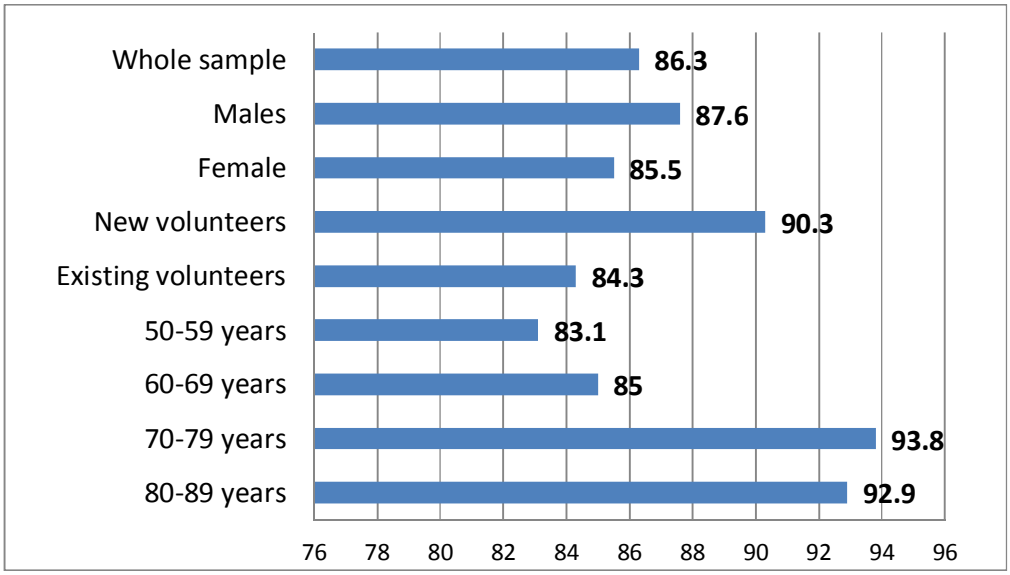

Figure 3.11. Percentage of sample at baseline reporting satisfaction with their own ability to perform daily acts (by gender, volunteering experience and age).

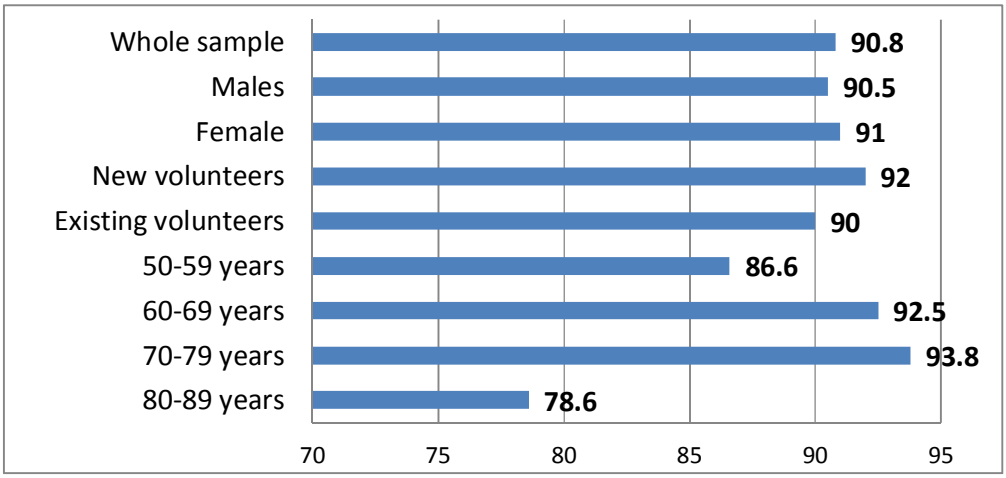

Figure 3.12. Percentage of sample reporting ability to get around by gender, volunteering experience and age.

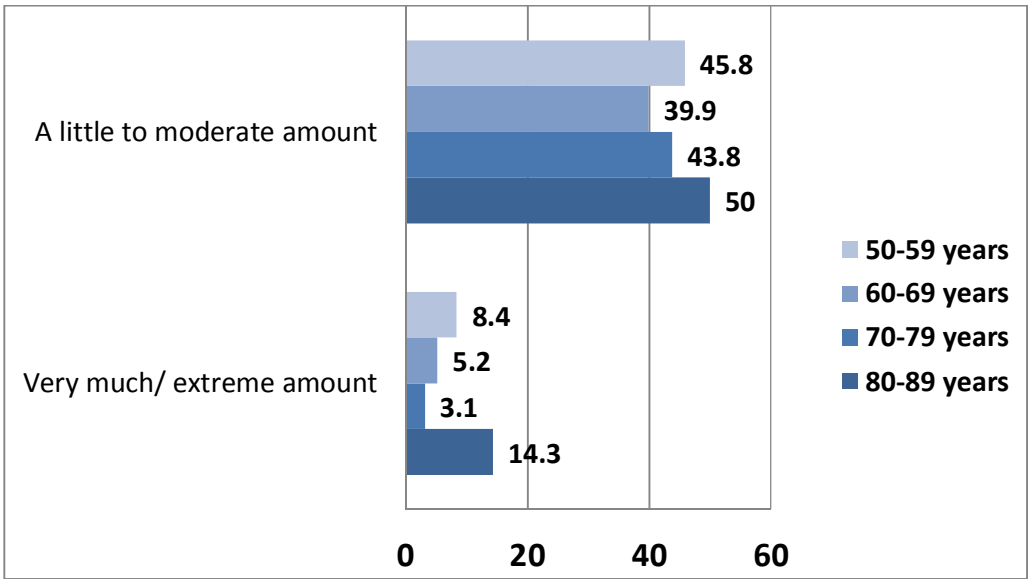

Figure 3. 13. Percentage of sample at baseline reporting the extent to which physical pain prevents them from doing what they need to do (by age).

In addition, 90.8% of the baseline sample indicated that they were 'well' or 'very well able to get around'. There were no differences in this regard by gender or volunteering experience ($p > .05$). However, proportionately fewer volunteers in the oldest age category (80-89 years) responded positively to this question (78.6%).

Somewhat surprisingly, fewer of those in the youngest age category (50-59 years) responded favourably (86.6%), compared to the middle two age groups (92.5% and 93.8% respectively).

It should be noted that the rate of positive responding to this question was generally high with the slightly lower positive rates expressed by those in the oldest age category explained partly by the nature of the age group and the finding (figure 3.12) that approximately 14.3% of this older group also reported experiencing extreme levels of pain in their daily lives which could impair their mobility somewhat.

3.4.5 Rates of reported disability.

There is no universally accepted definition of disability (NISALD, 2007) and for this reason the question on disability was deliberately general, i.e. "*Do you consider yourself to have a disability?*" The percentage of volunteers reporting 'yes' to this question was 22.9%, with the prevalence rates higher in the oldest age category (80-89 years - 35.7%) and also somewhat surprisingly in the youngest age category (50-59 years - 31.3%). The first report from the Northern Ireland Survey of people with Activity Limitations (NISALD, 2007) offers a more precise definition as 'any longstanding disability, illness or infirmity that limits the respondent's activities in any way' (p. 10). According to this definition 21.0% of all people in Northern Ireland, living in private households, report some degree of disability and this percentage increases with age for both men and women. Disability rates for older people in the volunteer sample cannot be directly compared to those in the population and are somewhat at variance with these population estimates. Table 3.2 shows that 31.3% of the 50-59 year olds in the sample reported having a disability compared to 23% of the population aged 45-59. The higher rate in the volunteer sample may be explained partially by the higher average age of the group since no one aged under 50 was included. However, in the 60-74 age category the volunteer sample showed a markedly lower rate of disability (19.6% compared to 41% in the population). This contrast was also evident in the oldest age group (75^{+}). Table 3.2 highlights these differences. The contrast in the figures suggests that many older volunteers do not consider themselves as being 'limited' or 'disabled' despite having more medical and health problems.

Table 3.2.

Comparison of reported rates of disability by age category in current volunteer sample with the Northern Ireland population, 2007.

AGE CATEGORY	Volunteer Sample at baseline (N=344) %	Northern Ireland average (NISALD, 2007) %
45-59 50-59	- 31.3	23 -
60-74	19.6	41
75+	23.1	60

These sample figures on disability among volunteers mirror similar age trends in reported health satisfaction (figure 3.9) and mobility (figure 3.11).

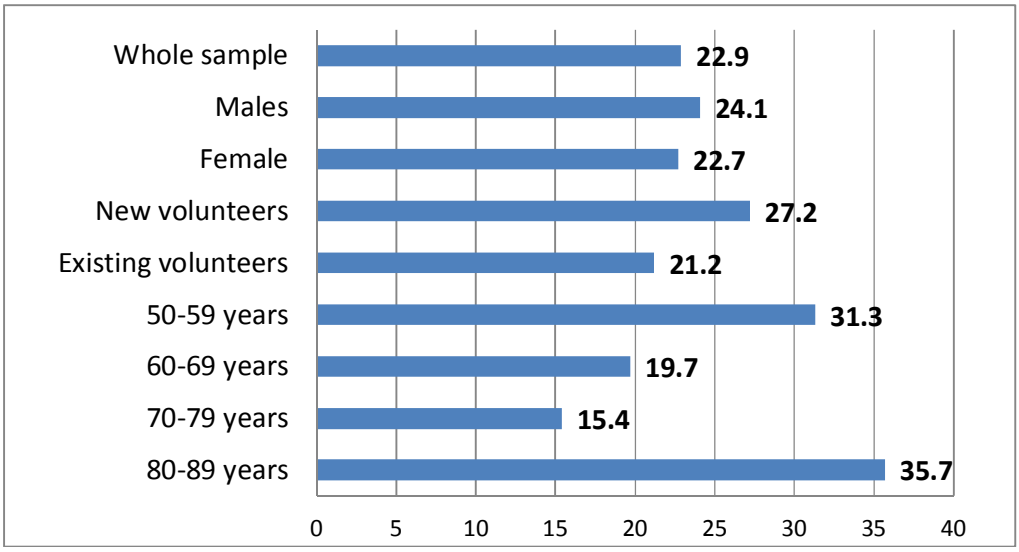

Figure 3.14. Percentage of sample at baseline who considered themselves to have a disability.

3.4.6 Activity levels (at baseline)

The overall picture emerging in relation to activity levels is that with little exception, the volunteers sampled have reported being active for at least 1-2 days in the week prior to completing the questionnaire. Notably, this finding applies to vigorous

activities as well as moderate and mild activities with less than 1% of those who answered these questions reporting no active days. It should be noted however, that 12.8% of respondents did not answer the question on vigorous activity with approximately 5.2% and 10.2% respectively failing to respond to the questions on moderate and mild activities. Reasons for this are unknown but perhaps these respondents were relatively inactive or did not fully understand the nature of the questions.

The first continuous Household Health Survey for Northern Ireland (2010-11) has been completed and the questionnaire for this includes some of the same activity/exercise questions that were asked in the volunteer survey. The results of this survey were released in November 2011, which will allow the data in this study to be benchmarked against the Northern Ireland older adult population. (see section 5.8.2).

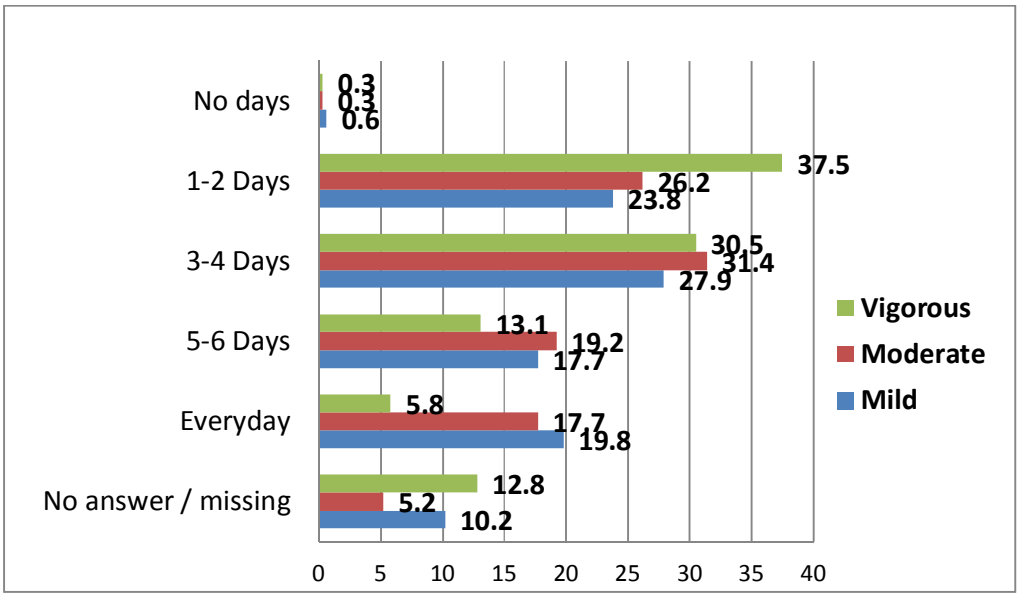

Figure 3.15. Percentage of sample at baseline reporting number of days in past week engaged in vigorous, moderate or mild physical activity for at least 10 minutes.

4.0 Organisational recruitment and support practices

4.1 Nature of Volunteer Organisations

At baseline 344 volunteers were located within 109 organisations across Northern Ireland. The majority of organisations were classified as belonging to the voluntary/community sector (81.7%), with 5.5% belonging to the statutory sector and 1.8% classified as housing association. Some additional primary research by Volunteer Now in December 2011 provided supplementary information on organisational recruitment and volunteer support practices for 68 of these organisations (62.4%). The information relating to these organisations was added to the database of volunteer responses for analysis purposes within this report.

Figures 4.1 and 4.2 show that for those organisations where information on recruitment and support practices were available, the majority (94.1%) used an interview and an application form as part of their recruitment of volunteers. The majority also provided induction and training support (95.6%), as well as having a named support person for volunteers to access (94.1%) and ongoing supervisory meetings on progress (91.2%).

4.2 Volunteer satisfaction levels at 6, 12 and 18 months

Relating this organisational information to expressed satisfaction with the volunteer experience showed that where such practices were in place in organisations, satisfaction levels at 6 months were consistently higher (figures 4.3 and 4.4). Notably also, the percentages expressing satisfaction with volunteering were generally higher at 12 and 18 months (range 94-100% satisfaction), regardless of whether these recruitment and support practices were in place suggesting that these practices have more impact in the initial settling in period of voluntary experience and that satisfaction with volunteering after this period is determined by other experiential and contextual factors.

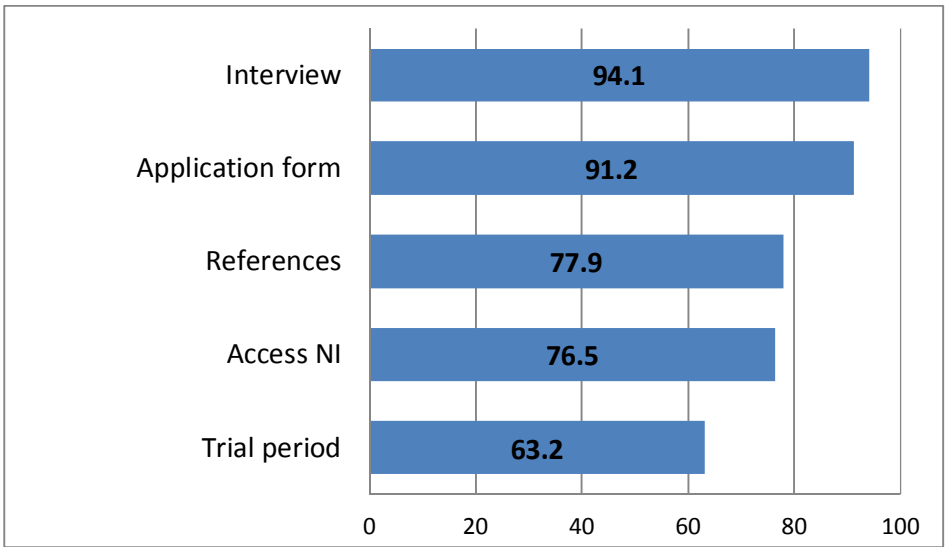

Figure 4.1.

Percentage of available volunteer organisations using various recruitment and selection practices (N=68).

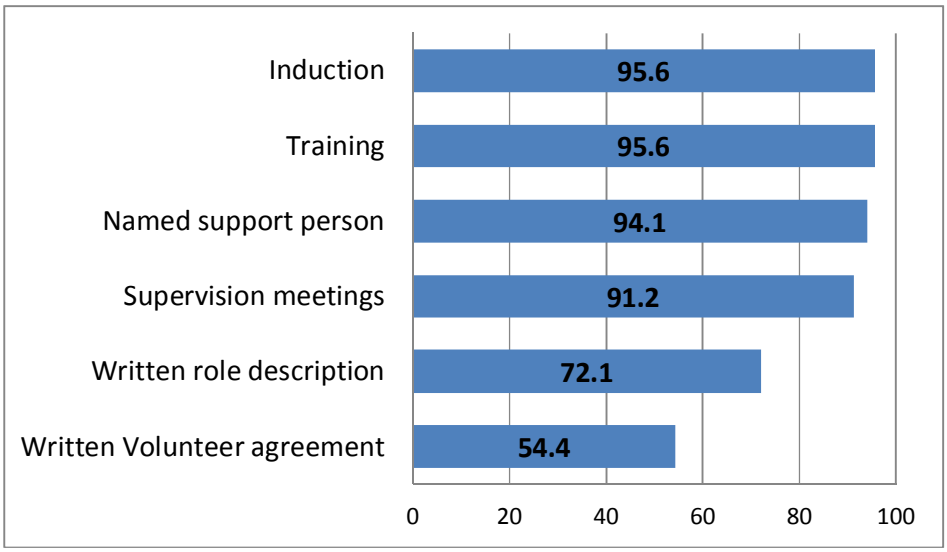

Figure 4.2.

Percentage of available volunteer organisations using various post recruitment support practices (N=68).

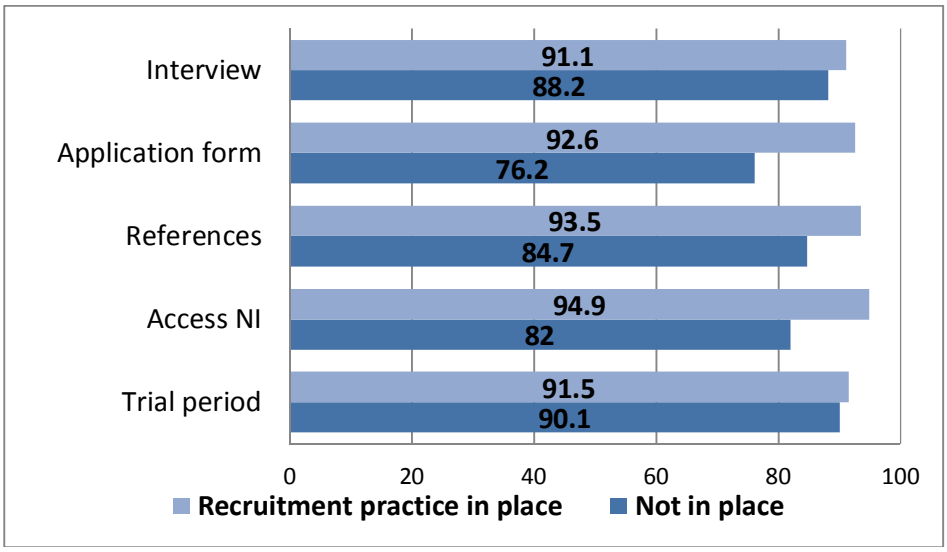

Figure 4.3.

Percentage of volunteers expressing satisfaction with volunteering at 6 months by use of volunteer organisation recruitment practices.

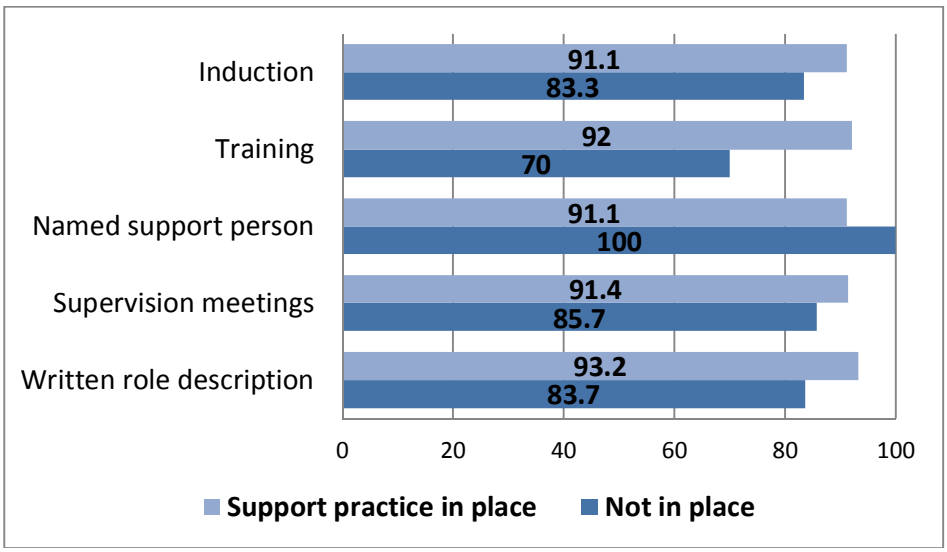

Figure 4.4.

Percentage of volunteers expressing satisfaction with volunteering at 6 months by employment of volunteer organisation support practices.

4.3 Numbers reporting various reasons for stopping volunteering at 6, 12 and 18 months

The intention of the research team was to track older volunteers over four time points regardless of whether they continued to be involved in formal volunteering activities. As mentioned in table 1.1, a total of 344 formal volunteers participated in the study at baseline and 229 remained in the study at all four timepoints regardless of volunteering status. Indeed, the numbers who remained in the study and reported stopping volunteering were relatively small (N=45). The figures in table 4.3 suggest that the reasons offered by people for stopping were more likely to be personal rather than linked to organisational factors.

Table 4.1

Numbers and reasons given for stopping volunteering at 6, 12 and 18 months.

REASONS for stopping at...	6 months	12 months	18 months
Number of new stoppers at each time point	***22***	***14***	***9***
Ill-health	6	7	4
Caring responsibilities	2	2	3
Changing home / work circumstances	4	1	0
Not enough free time	3	2	0
Lost interest	2	1	0
Organisation folded	1	0	0
Asked to do too much	1	1	0
Did not get to do the things I wanted	1	1	1
My efforts were not always appreciated	0	1	1
Other (e.g. offered ft work).	2	3	0

4.4 Volunteer Roles

A systematic review conducted by Casiday et al., (2008) to assess the health effects of volunteering on individual volunteers reported that the majority of the studies

examining the health impacts of volunteering on volunteers related to volunteering in general, rather than looking at particular settings or roles (Clark, 2003; Greenfield and Marks, 2004; Harris and Thoresen, 2005; Jirovec, 2005; Li and Ferraro, 2005; Librett, Yore et al., 2005; Lum and Lightfoot, 2005; Morrow-Howell, Hinterlong et al., 2003; Musick and Wilson, 2003; Li, 2007; Piliavin and Siegl, 2007; Thoits and Hewitt, 2001; Van Willigen, 2000; Weitzman and Kawachi, 2000; Wu, Tang et al., 2005; Yuen, Burik et al., 2004;).

In this study, respondents were asked at baseline to indicate the activities they would be carrying out within their volunteer organisations, using a list of 20 activities (see questionnaires in appendix 1). A principal components analysis of the responses suggested that these activities could be grouped into six broad categories (leadership/management, caring/visiting/befriending, office/administration, practical, teaching/mentoring and collecting/selling tickets/fundraising. The categories were not mutually exclusive or exhaustive with some degree of overlap between them. Figures 4.5-4.6 provide a breakdown of the percentages of volunteers taking up these roles by sex and age group.

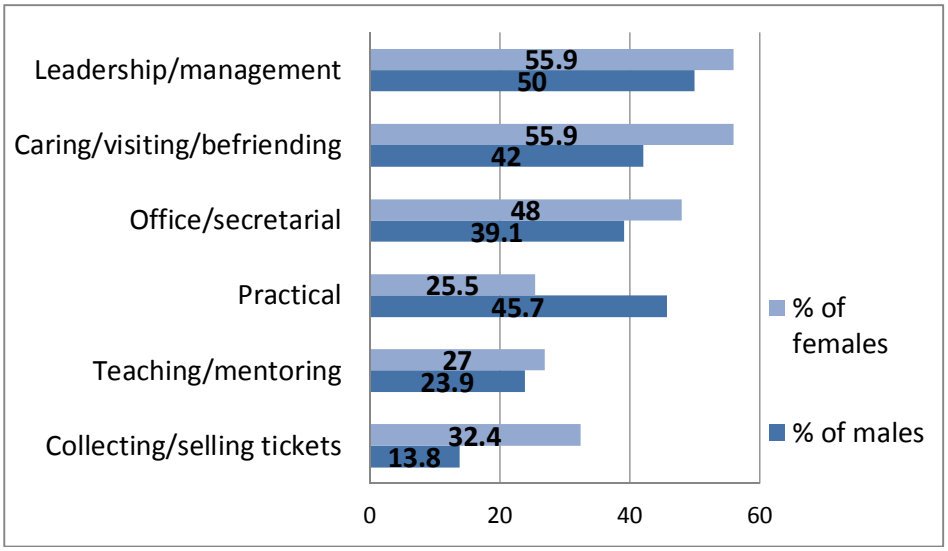

Figure 4.5.

Percentage of volunteers involved in various types of activities at baseline by age group.

Leadership/management activities were the most popular for both men (50%) and women (56%). Women were more likely to be involved in caring/visiting/befriending activities (56%) than men (42%), whereas men (46%) were more likely than women (25.5%) to be involved in practical activities.

In general, the relative popularity of activities was similar for older and younger volunteers but some differences are worthy of note. Older people were more likely to be involved in leadership/management type activities (60%) than their younger counterparts (52%) and fundraising (34% vs. 22.3%). The younger age group on the other hand were more likely to be involved in practical activities (35%) than the 70+ age group (29%).

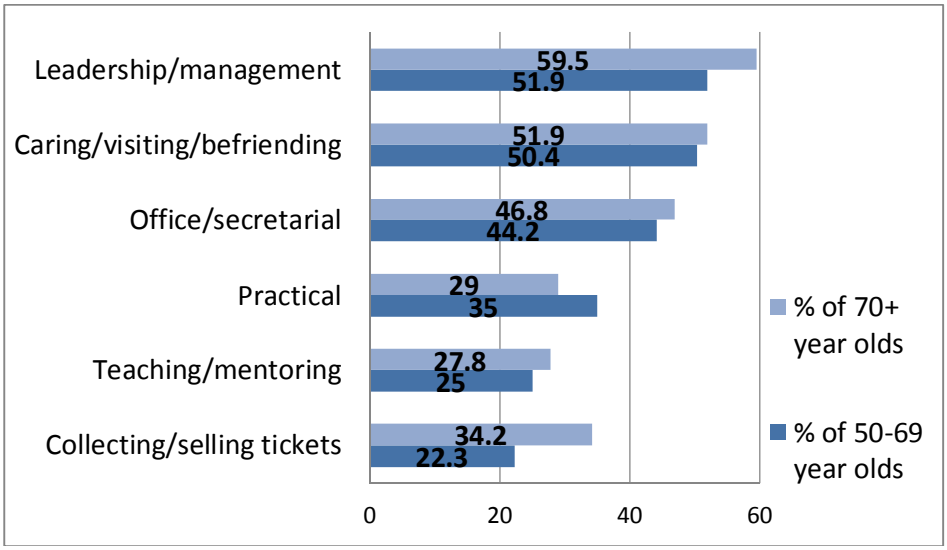

Figure 4.6

Percentage of volunteers involved in various types of activities at baseline by age group.

4.5 Volunteer activities by sex and age

Table 4.2 shows evidence of sex and age differences in the variety of activities taken on at baseline. Both age groups were likely to be involved in a one or two types of general activity rather than a mix of general activities. Older volunteers (70+ years) were more likely to take on a greater variety of activities (41.8%) compared to 28.1%

of the 50-69 year olds. Likewise, the younger volunteers were more likely to be involved in a more limited set of 1-2 general activities (60.4%) compared to older people (50.6%). Sex differences were also apparent with men more likely to be involved a more restricted range of 1-2 activities (66.7%) than women (52.9%) and women were also more likely to be involved in a greater variety of 3 or more roles (47.1% vs. 33.3% for men).

Table 4.2

Percentage of sample at baseline engaged in various generic activities.

	Age group %		Sex %	
Number of activities	50-69 years	70+ years	Men	Women
1-2	60.4	50.6	66.7	52.9
3-4	28.1	41.8	23.9	35.8
5-6	11.5	7.6	9.4	11.3

4.6 Hours spent volunteering

At the 6, 12 and 18 month time points, respondents were asked to report the number of hours they had spent volunteering in the previous 4 weeks. On average the number of hours spent volunteering increased significantly for the whole cohort between 6 months and 12 months from an average 21.8 hours (SD=22.5) to 25.7 hours at 12 months (SD=27.04) (p =.015). This increase over time was reported by both men and women and in the younger (50-69 years) and older (70+ years) age groups. The average number of hours reported decreased from 12 months to 18 months, but not significantly so (p >.05). In general, men reported consistently higher average hours spent volunteering than women, and younger volunteers recorded more hours than older volunteers at 6, 12 and 18 months time points. At all three time points, women reported lower hours than men, and the gender difference was more pronounced in the younger (50-69 years) age category. For the 70+ age group,

women reported a lower number of hours than men at 6 months (13.18 vs. 18.5 hours) and 18 months (15.5 vs. 18.2 hours), but there was no significant gender difference in hours spent volunteering at the 12 months (19.1 vs. 20.7 hours respectively).

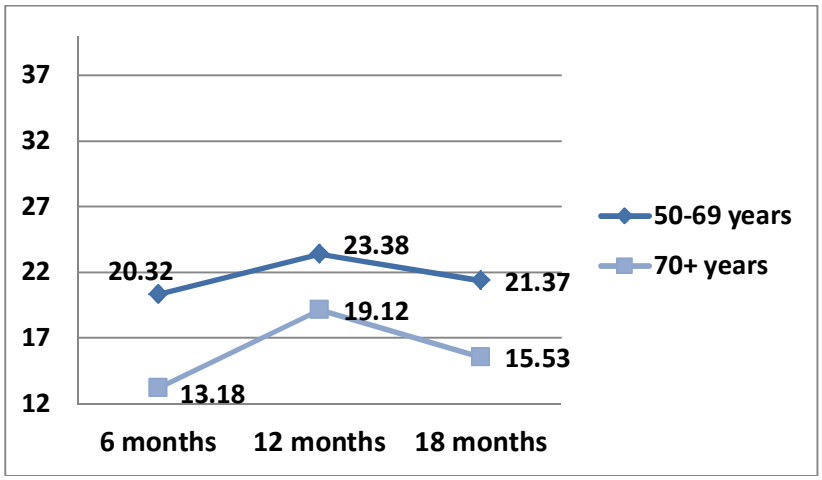

Figure 4.7

Mean number of hours in previous 4 weeks spent volunteering (Women).

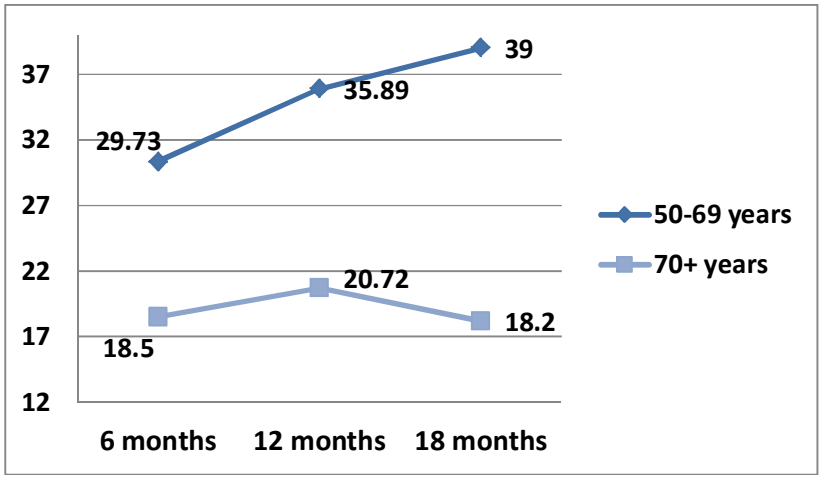

Figure 4.8

Mean number of hours in previous 4 weeks spent volunteering (Men).

Some studies have shown that increasing number of hours spent volunteering yields greater health benefits up to a certain threshold (which differed among studies) (Van

Willigen, 2000; Thoits and Hewitt, 2001; Li, 2007; Choi & Kim, 2011). It has been shown that increased time spent volunteering is related to health, although at very high levels this effect may level off or even decrease (Van Willigen, 2000; Musick and Wilson, 2003). Luoh et al., (2002) defined intensive volunteering as more than 100 hours per year and his study reported better health and lower mortality for those volunteering more than 100 hours per year, compared with both the less frequent and the non-volunteering groups. Conflicting evidence has come from Morrow-Howell et al. (2003) who found that that increased volunteer hours related to greater well-being, but only up to 100 hours per year. Choi and Kim (2011) argued that a moderate amount of volunteering in people aged 55 or over (e.g. up to 10 hours per month) may be associated with mental health benefits and that spending too much time volunteering may become burdensome and negate any possible benefits of the volunteering experience.

For the current study respondents were asked to estimate the number of hours spent volunteering in the 4 weeks prior to completing the survey. In order to make suitable comparisons with previous research, these responses were scaled up by a factor of 12 to reflect an annual estimate. This estimate was then reduced to 3 categories (1-100 hours per annum, 101-250 hours per annum and 250+ hours) and these in turn were used to compare scores on the WHOQOL-BREF physical and psychological health scales. Results in tables 4.3a and 4.3b showed that neither physical nor psychological health scores varied significantly according to hours spent volunteering. This was true at the 6, 12 and 18 months periods post baseline.

It is also noteworthy that the majority of those who provided information on hours had estimated an annual total in excess of the threshold value of 100 hours suggested by Morrow-Howell et al. (2003). Approximately 77% of respondents at 6 months and 70% of respondents at 12 months indicated spending more than 100 hours per annum with some 30% and 28% respectively indicating 250+ hours per year. It is possible that volunteers have overestimated their previous month's level of commitment to voluntary activities, thereby inflating the annual estimates but the high reported hours in general is accompanied by high levels of expressed satisfaction among the volunteers as a whole.

Table 4.3a.

Mean physical health scores on the WHOQOL-BREF at 6, 12 and 18 months by number of hours spent volunteering annually (at 6 months, 12 months and 18 months respectively).

Annual number of hours spent volunteering	Physical health 6 months	Physical health 12 months	Physical health 18 Months
1-100 hours	16.42 (2.51)	16.41 (2.58)	16.34 (2.85)
101-250 hours	16.43 (2.48)	16.43 (2.69)	15.87 (3.18)
250+ hours	16.33 (2.68)	16.06 (2.98)	16.09 (2.71)
Test result at each time point	F(2, 226)=.30, p=.74	F(2, 216)=.37, p=.69	F(2,209)=.42, p=.66

Table 4.3b

Mean psychological health scores on the WHOQOL-BREF at 6, 12 and 18 months by estimated number of hours spent volunteering annually.

Estimated Annual number of hours spent volunteering	Psychological health 6 months	Psychological health 12 months	Psychological health 18 months
1-100 hours	15.60 (2.04)	15.68 (1.90)	16.34 (2.85)
101-250 hours	15.56 (2.25)	15.76 (1.91)	15.87 (3.18)
250+ hours	15.63 (2.38)	16.05 (2.44)	16.09 (2.71)
Test result at each time point	F(2, 228)=.02, p=.98	F(2, 216)=2.04, p=.13	F(2,209)=.42, p=.66

4.7 Hours spent volunteering and satisfaction with volunteering at 6, 12 and 18 months

In order to examine whether the number of hours spent volunteering was associated with expressed satisfaction levels with volunteering, the cohort was split into two groups at each time point consisting of those who expressed satisfaction with their volunteering experience and those who expressed dissatisfaction. Results showed no significant difference in the average number of hours spent volunteering between the two groups. This was the case at all three timepoints after baseline (6, 12 and 18 months). At 6 months a total of 209 from 226 responders expressed satisfaction with volunteering and these recorded a mean of 20.1 hours of volunteering in the previous 4 weeks (SD=20.1), compared to 21.3 hours (SD=21.2) for the 'dissatisfied' group (N=17). At 12 months those who expressed satisfaction with volunteering (N=207) recorded a mean of 24.9 hours of volunteering in the previous 4 weeks (SD=24.18), compared to 19.85 hours (SD=45.46) for the 'dissatisfied' group (n=13). At 18 months the 'satisfied' group comprised 201 from a total of 215 responders and they reported an average number of 22.5 hours compared to 24.6 hours for the 'dissatisfied' group. This difference was not significant and should be seen in the context of high variability in the number of hours recorded for the 'dissatisfied' group at 18 months (SD=39.73 hours) and the fact that this group comprised only 14 people.

In general, the percentages expressing satisfaction with volunteering at 6, 12 and 18 months were high (91.8%, 92.4% and 93.5% respectively) with the numbers in the dissatisfied group at each time point being low (17, 13 and 14 respectively).

Table 4.4

Mean number of hours reported volunteering in 4 weeks prior to completing each time point questionnaire at 6, 12 and 18 months.

Level of satisfaction with volunteering experience	Average number of hours reported...		
	At 6 months	At 12 months	At 18 months
Satisfied group	20.15 (21.38)	24.97 (26.65)	22.49 (24.48)
Dissatisfied group	21.35 (21.12)	19.85 (22.05)	24.57 (39.73)
Test result at each time point	t(224)=.23, p=.65	t(218)=-.68, p=.50	t(213)=.29, p=.77

4.8 Volunteer views at 12 and 18 Months

In general, the majority of volunteers at 12 and 18 months expressed positive views about their respective volunteer organisations (tables 4.5a and 4.5b). These views were largely consistent for both men and women and for the younger (50-69 years) and older (70^{+} years) age groups. The vast majority reported being suitably placed, able to cope with their volunteering activities and felt that their efforts were appreciated by their volunteer organisations. Research in other contexts has found that older volunteers appear to derive greater benefit from volunteering than younger volunteers (Van Willigen, 2000; Li & Ferraro, 2006b). These studies have compared the perceived benefits of volunteering across the adult life span but little research has been cited within the older age range specifically. Using satisfaction ratings, the findings from this study do not support the notion of differential benefits of volunteering for the younger and older old.

Approximately two thirds of volunteers said that they were given the opportunity to influence the development of their organisations with similar rates of agreement for men and women across all ages. Fewer respondents stated that they found it difficult to balance their volunteering commitments with their work/home commitments (at 12

months and 18 months), with women (16.5% and 17.2% respectively) being more likely to agree with this statement than men (9.4% and 8.9% respectively). The younger age group aged 50-69 were also more likely to endorse the statement about too much paperwork and concerns about risk at the 12 month period (23.9%) compared to 15.4% of the over 70 age group. However, this age difference was not apparent at the 18 month period (24.6% vs. 25%). Women were more likely at both time periods to report too much paperwork and concerns about risk (22.9% and 26.2% respectively) compared to men (20.6% and 22.7).

4.8.1 Role strain

A recent report by Nazroo & Matthews (2012) pointed to the potential negative impacts of volunteering on wellbeing arising from 'role strain' due to multiple roles, excessive time commitments and trying to balance volunteering with other commitments. The evidence from this study relating to recruitment and support practices, satisfaction with volunteering and age differences in the hours spent volunteering suggests that role strain among formal older volunteers is not a problem in the Northern Ireland context.

4.8.2 Reciprocity

Herzog and House (1991) suggest that socially productive activities such as voluntary work can provide people with a sense of usefulness and capability. This also links to research such that produced by Brown et al's (2003) study which examined the relative contributions of giving versus receiving support to longevity in a sample of older married adults. The study found that that mortality was significantly reduced for individuals who reported providing instrumental support to friends, relatives and neighbours. The study also found that receiving support had no effect on mortality once giving support was taken into consideration. Siegrist et al., (2004) argued that "social productivity may be conceptualised as an interpersonal social exchange, based on the principle of reciprocity."A number of recent studies have examined reciprocity in relation to involvement in voluntary activities in later life. Wahrendorf et al.'s (2006) study in mainland Europe found that volunteers who reported being appreciated had better quality of life and less depressive symptoms than non-volunteers, while volunteers who reported feeling no appreciation did not.

McMunn et al.'s research in England (2009), using cross-sectional data and Zaninotto et al.'s (2013) findings, based on an analysis of longitudinal data from the English Longitudinal Study on Ageing (ELSA), also concluded that volunteers who reported being 'appreciated' scored higher on quality of life and lower on depression than those who reported not being appreciated.

The majority of volunteers in the current study have positively endorsed the question relating to reciprocity at both time points (Tables 4.5a and 4.5b, question 5) with only 19 volunteers (5.5% of the sample at 12 months) and 7 volunteers (2% of volunteers at 18 months) stating that they did not feel 'appreciated' by their volunteer organisation. The current study found no evidence of differences in health or quality of life between those who felt appreciated and those who did not 12 months after baseline. However, having such small numbers in the 'unappreciated' group makes health comparisons with those reporting reciprocity difficult to formally test in the context of this study.

The high numbers expressing feelings of reciprocity is also consistent with the high percentages expressing satisfaction with their volunteering experience, the roles in which they are engaged, and the numbers feeling supported in their volunteer role. It is noteworthy that relatively lower numbers of volunteers felt they were given the opportunity to influence the development of the organisation (65%), but this was not related to satisfaction levels expressed on other aspects of the volunteering experience.

Table 4.5a.

Percentages of volunteers agreeing with various statements about their volunteer organisations at 12 months by age category and gender.

	Age group		Sex	
Volunteer views	50-69 years	70+ years	Men	Women
1. I am given the opportunity to do the sort of things I like to do	97.2	98.3	96.9	97.9
2. I get bored and lose interest in my involvement	9.2	8.0	8.3	9.4
3. I can cope with the things I am asked to do	96.6	94.7	97.8	95.1
4. The organisation has reasonable expectations in terms of workload	91.6	93.0	93.9	90.5
5. My efforts are appreciated by the organisation	91.6	93.3	94.0	90.6
6. There is too much paperwork / concerns about risk	23.9	15.4	20.6	22.9
7. I find it difficult to balance my volunteering commitments with my work/home commitments	12.6	16.7	9.4	16.5
8. I am given the opportunity to influence the development of the organisation	64.0	66.0	68.4	61.4
9. I am supported to carry out my role	90.9	92.9	93.8	89.7
10. My volunteering is becoming too much like paid work	17.5	7.7	16.5	14.4
11. My needs as an older volunteer are recognised	86.1	82.1	85.4	84.8
12. The organisation does a good job of making sure my volunteer role fits my needs	88.8	92.7	89.7	89.8

Table 4.5b

Percentages of volunteers agreeing with various statements about their volunteer organisations at 18 months by age category and gender.

	Age group		Sex	
Volunteer views	50-69 years	70+ years	Men	Women
1. I am given the opportunity to do the sort of things I like to do	96.0	96.3	97.8	94.8
2. I get bored and lose interest in my involvement	4.2	5.9	3.3	6.3
3. I can cope with the things I am asked to do	97.0	98.2	98.9	96.3
4. The organisation has reasonable expectations in terms of workload	95.4	96.3	100	92.6
5. My efforts are appreciated by the organisation	96.5	98.2	100	94.7
6. There is too much paperwork / concerns about risk	24.6	25.0	22.7	26.2
7. I find it difficult to balance my volunteering commitments with my work/home commitments	14.5	11.5	8.9	17.2
8. I am given the opportunity to influence the development of the organisation	65.3	75.0	64.4	70.1
9. I am supported to carry out my role	92.0	92.7	94.6	90.4
10. My volunteering is becoming too much like paid work	11.6	9.8	13.2	9.9
11. My needs as an older volunteer are recognised	89.0	87.7	92.4	86.0
12. The organisation does a good job of making sure my volunteer role fits my needs	91.1	88.9	90.2	90.8

5.0 Comparing health, physical activity and body mass index over 12 months- A longitudinal analysis of change

Given the longitudinal nature of the data, this section reports on the results of a multilevel mixed effects statistical analysis of volunteer health and health related responses at four 6-monthly time points. At the individual volunteer level, the analysis explored the demographic variables associated with individual differences in reported health at baseline, as well as the factors associated with individual improvement, maintenance or decline over the subsequent 18 month period.

A series of separate preliminary longitudinal analyses were carried on each of the following health related variables:

1. WHOQOL-BREF Physical Health scores,
2. WHOQOL-BREF Psychological Health scores,
3. Attitudes to ageing (AAQ Psychosocial Growth, Psychosocial Loss, Physical Change),
4. Reported Body Mass Index (BMI),
5. Reported Activity levels (vigorous, moderate and mild).

The XTMIXED option in STATA 12 (StataCorp., 2012) was used to perform a series of longitudinal mixed effects models aimed at testing for changes in each of the health variables for the cohort as a whole. Time was treated as a continuous fixed effect in each model with 4 levels (0, 1, 2, 3). The effect of time in the model can also be regarded as the effect of ageing on health over an 18 months period. The first series of statistical models using maximum likelihood estimation techniques tested for the possibility both linear and non-linear changes in health outcomes over time. These tests, therefore, allowed for the possibility of positive linear improvement, negative linear decline and non-linear (quadratic) relationships. Non-linear relationships imply that the rate of improvement or decline in health actually changes as time passes from baseline. The models were all specified so as to allow for both individual variations in health outcomes at baseline (random intercept

models) and individual variations in the rates and nature of the change trajectories (if any) over time (random slopes models).

Table 5.1

Global multilevel analyses - time trends on various health related outcomes.

HEALTH OUTCOMES	Effect of time	Coefficient	Standard Error	Z	*P*-value	[95% Conf. Interval]	
WHOQOL-BREF Physical	**Linear***	1.366	0.124	11.02	0.000	1.123	1.609
	Non-linear*	-0.358	0.039	-9.04	0.000	-0.435	-0.280
WHOQOL-BREF Psychological	**Linear***	-0.228	0.110	-2.07	0.039	-0.444	-0.012
	Non-linear*	0.077	0.038	2.05	0.041	0.003	0.150
AAQ (Gain)	**Linear***	0.021	0.009	2.29	0.022	0.003	0.038
	Non-linear	0.018	0.010	1.84	0.556	-0.001	0.038
AAQ (Loss)	Linear	-0.006	0.010	-0.59	0.556	-0.026	0.014
	Non-linear	0.011	0.009	1.09	0.275	-0.009	0.029
BMI	Linear	-0.041	0.039	-1.03	0.302	-0.118	0.037
	Non-linear	-0.056	0.033	-1.70	0.089	-0.121	0.008
Vigorous Activities	**Linear***	-0.113	0.041	-2.73	0.006	-0.194	-0.031
	Non-linear	0.042	0.043	0.97	0.330	-0.043	0.127
Moderate Activities	Linear	-0.080	0.046	-1.73	0.084	-0.171	0.011
	Non-Linear	-0.007	0.049	-0.15	0.883	-0.103	0.089
Mild Activities	**Linear***	-0.126	0.045	-2.79	0.005	-0.215	-0.038
	Non-Linear	0.057	0.048	1.20	0.230	-0.036	0.150

Note: * denotes a statistically significant trend over time

5.1 Cohort Trend Analysis (Table 5.1)

WHOQUOL-BREF Physical health

Result summaries of these models (table 5.1) indicate a statistically significant linear improvement in reported WHOQOL-BREF physical health scores over time (b =1.37, p <.001), as well as a significant non-linear relationship (b =-.36, p <.001). The linear trend shows an average increase in WHOQOL-BREF health scores of 1.37 at each 6 month time interval for the cohort as a whole. The non-linear trajectory indicates that the rate of health score improvement is highest from

baseline to 6 months and reduces at each successive 6-month time point. Likelihood ratio texts comparing linear and non-linear growth trends showed that non-linear growth resulted in significantly better model fit ($X^2(4)=109.45$, $p < .001$).

WHOQOL-BREF Psychological health

Psychological health scores tended to reduce slightly over time with an average decrease of .24 ($p = .032$) but that the overall trend was characterised by stability with only a dip in scores during the middle periods (6 and 12 months), followed by a modest improvement at 18 months. As with Physical health scores, the Likelihood ratio test confirmed that a non-linear growth trajectory was a better fitting model than a linear one ($X^2(4)=15.01$, $p = .005$).

Given that physical and psychological scales employed a similar scoring system and range, figure 5.1 shows that the time changes in physical health scored were much more pronounced, and that psychological well-being scores exhibited a more stable, slightly non-linear trajectory for the cohort as a whole.

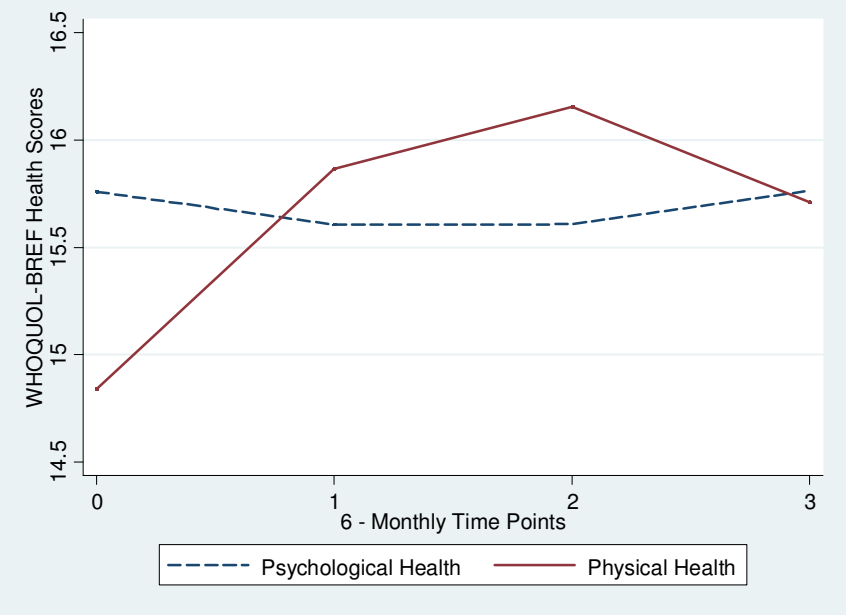

Figure 5.1

Comparing WHOQOL-BREF (Physical and Psychological Health) whole cohort trends over time.

Attitudes to Ageing (AAQ)

Figure 5.2 shows that the Attitudes to Ageing Questionnaire (AAQ) sub-scale scores showed similar patterns of stability and maintenance over the time period, with a small but statistically significant increase in positive attitudes to ageing (AAQ-Gain) (b = .02, *p* =.022), no significant change in AAQ-Psychosocial Loss scores (b =-.006, *p* =.56) and a small decline in AAQ-Physical Change scores (b =-.04, *p* =.001). Given that three AAQ subscales employ the same scoring system, figure 5.2 highlights that volunteers scored consistently higher on the positive attitudes to ageing (AAQ-Gain), compared to more negative attitudes associated with loss and decline. Tests comparing linear and non-linear trends showed no significant differences in the likelihood ratio tests, indicating that stable linear change models were more parsimonious in describing change trends on all three AAQ subscales.

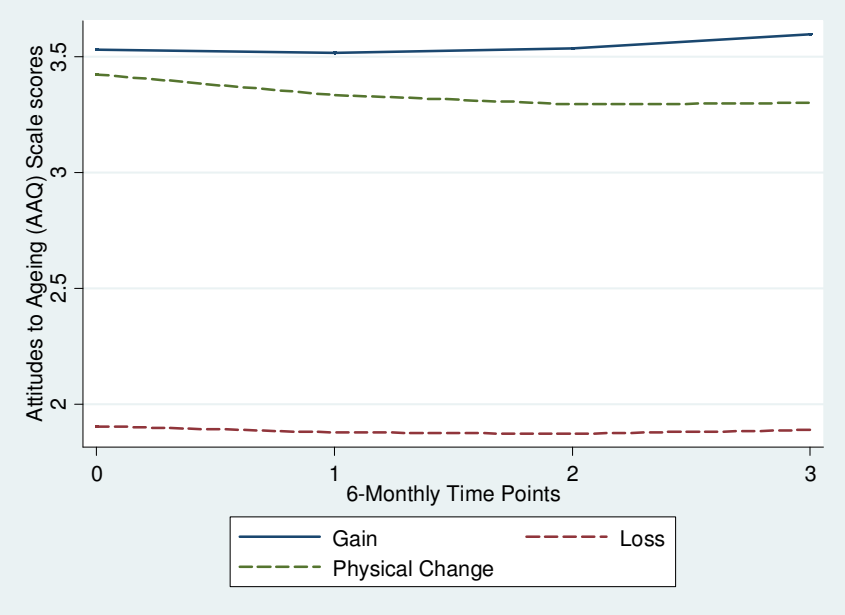

Figure 5.2

Comparison whole cohort trends over time for Attitudes to Ageing (AAQ).

Activity Levels and BMI

Reported levels of vigorous and mild physical activities displayed small but statistically significant linear decreases over time. The number of reported days in the previous week spent doing vigorous activities declined on average by .12 days at every 6 months time point (*p* =.005), and by .13 days for mild activities (*p* =.004).

Moderate activity levels demonstrated a stable pattern over the time period and volunteers also reported consistently higher participation rates in moderate activities compared to vigorous or mild. Given the modest reductions in vigorous and mild activities reported over the time period this has not impacted on reported BMI levels over the period with a pattern of stability and maintenance recorded in this area (b =-.04, *p* =.30). Again, the Likelihood ratio tests confirmed that modest linear change models best conveyed the trends in the data with regard to both activity levels and BMI.

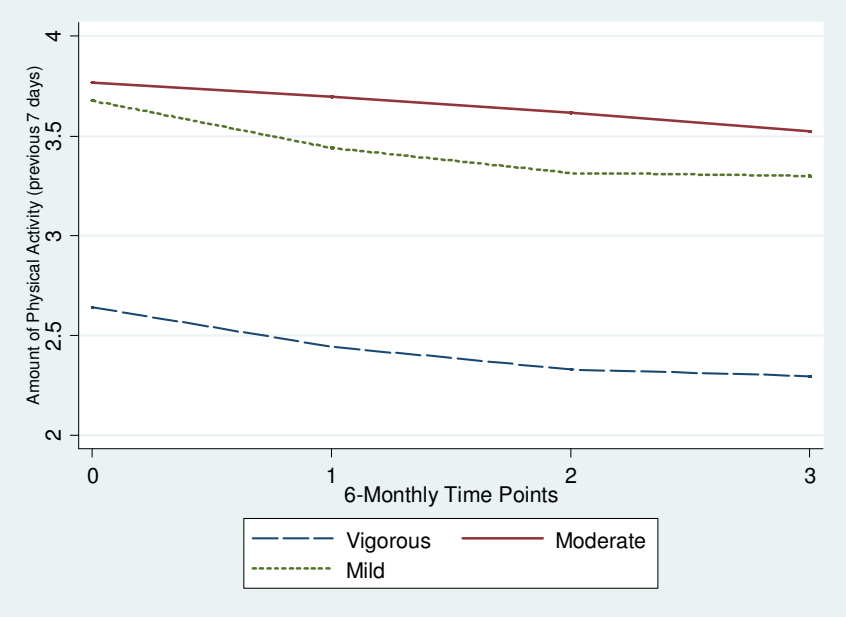

Figure 5.3

Comparing whole cohort trends for reported average number of days engaged in vigorous, moderate and mild activities (in 7 Days previous to completing each survey).

Table 5.1 summarises the general trends over the three time points. For reported physical health, there was a general improvement in scores over time as assessed by the WHOQOL-BREF. The WHOQOL-BREF's psychological well-being scores displayed a pattern of maintenance over the time period as did reported levels of social support, moderate / mild activity and self-report body mass index (BMI). There was a slight decline in vigorous activity during the period. Further analysis of these trends by age group and sex is provided in figures 5.4-5.9 with overall group means given in table 5.2.

Table 5.2

A comparison of observed mean scores on reported physical health, psychological health, attitudes to ageing and activity levels at baseline and 6, 12 and 18 months post baseline.

	Baseline	6 months	12 months	18 months	Matched Sample size
WHOQOL-BREF Physical health	14.95 (2.12)	16.36 (2.83)	16.18 (2.82)	15.96 (3.02)	216
WHOQOL-BREF Psychological health	15.79 (2.15)	15.56 (2.30)	15.62 (2.07)	15.74 (2.48)	220
AAQ Psychosocial Gain	3.54 (0.54)	3.50 (0.54)	3.55 (0.57)	3.56 (0.56)	216
AAQ Psychosocial Loss	1.91 (0.60)	1.85 (0.57)	1.89 (0.59)	1.86 (0.59)	203
AAQ Physical Change	3.44 (0.72)	3.28 (0.72)	3.48 (0.73)	3.26 (0.73)	209
Body Mass Index (BMI)	27.08 (4.84)	27.18 (4.90)	27.06 (4.88)	27.02 (5.17)	197
Vigorous Physical Activities (No. of days in last week)	2.71 (1.98)	2.35 (2.18)	2.43 (2.17)	2.36 (2.18)	221
Moderate Physical Activities (No. of days in last week)	3.90 (2.10)	3.72 (2.27)	3.71 (2.19)	3.48 (2.29)	229
Mild Physical Activities (No. of days in last week)	3.56 (2.29)	3.38 (2.41)	3.26 (2.29)	3.36 (2.24)	210
Lubben Social support Scale	4.09 (.95)	4.06 (.90)	3.99 (.95)	3.98 (.93)	211

Note : Figures in brackets represent standard deviations.

5.2 WHOQOL-BREF Physical health scores over time (by age and gender)

A total of 229 respondents provided matched data over the three time points and results revealed a statistically significant improvement in WHOQOL-BREF Physical Health scores from baseline to 6 months and this change was sustained at the 12 and 18 month time points. Figures 9 and 10 show that both women and men reported an improvement in physical health from baseline to 6 months with a leveling off at 12 months. This was true for both the younger and older age groups with men in the 70+ age group starting at the lowest point and showing the biggest improvement (figure 5.5).

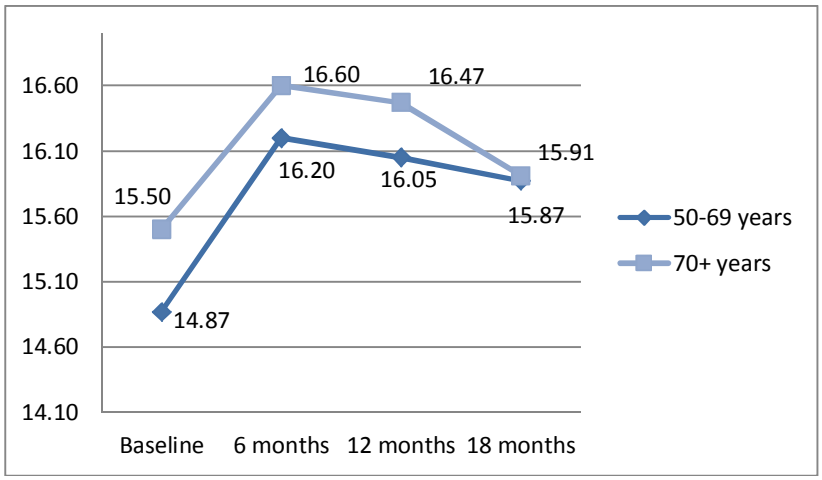

Figure 5.4

Mean WHOQOL-BREF Mean Physical Health scores over time (Women).

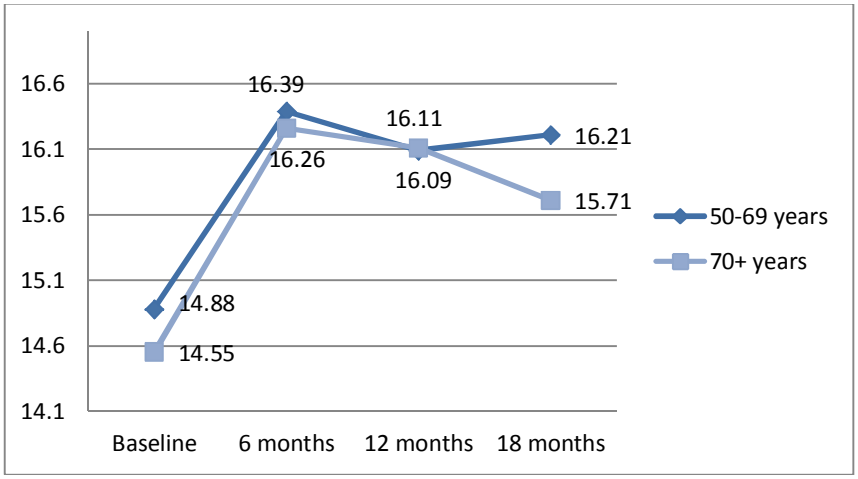

Figure 5.5

Mean WHOQOL-BREF Mean Physical Health scores over time (Men).

5.3 WHOQOL-BREF Psychological health scores over time (by age and gender)

Results revealed no statistically significant change in WHOQOL-BREF Psychological Health scores over time. The pattern for mental health scores was therefore one of maintenance over the time period. Figures 5.6 and 5.7 show that mental health scores reduced in the period from baseline to 6 months with slight improvements again at 12 months for both men and women in the 50-69 age group. The pattern for the 70⁺ age group was more stable over time with men scoring consistently lower than women. It should, however, be noted that the difference between men and women in this (70⁺ years) age category was not statistically significant.

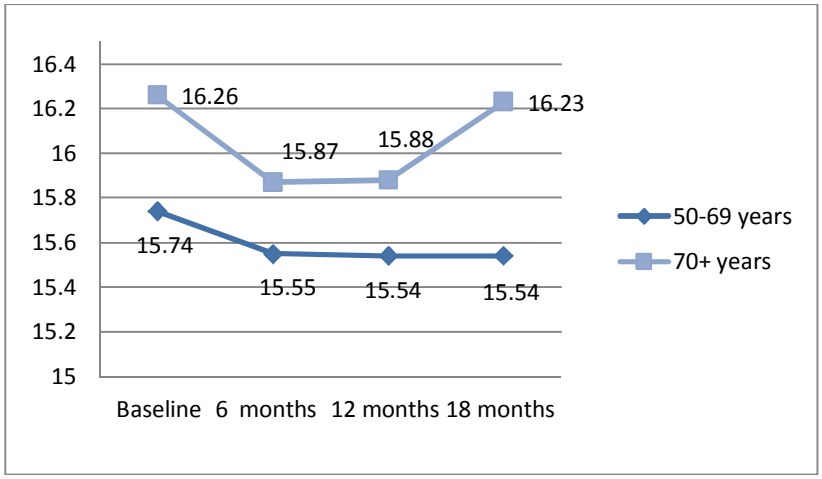

Figure 5.6

Mean WHOQOL-BREF Mean Psychological Health scores over time (Women).

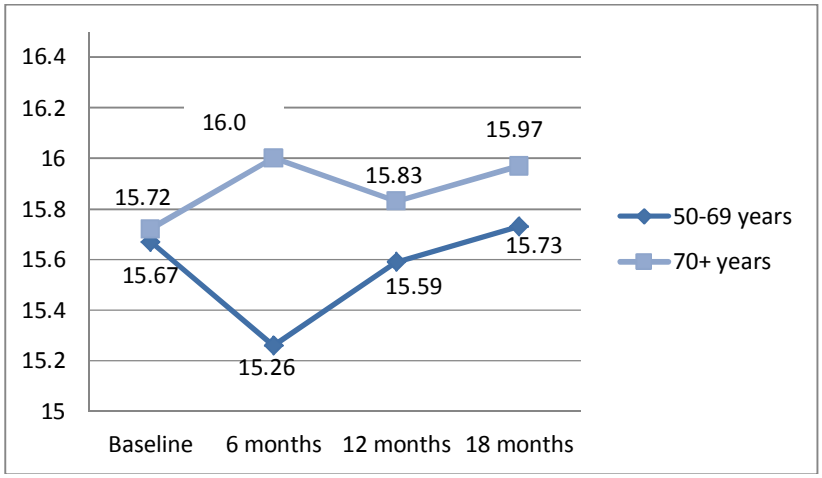

Figure 5.7

Mean WHOQOL-BREF Mean Psychological Health scores over time (Men).

5.4 Explaining trends in WHOQUOL-BREF Physical health scores (Table 5.2)

Given the significant linear and non-linear trends in WHOQOL-BREF (Heath) scores, a number of covariates were tested in the multilevel model relating to WHOQOL-BREF (Physical Heath) scores. These included level-2 personal variables such as age, sex, socio-economic status (weekly income, receipt of pension credits), living status (living alone or with partner/others), having a disability, caring responsibilities, volunteering experience (new versus existing volunteers at baseline) and satisfaction with the volunteering experience after 6 months. Each of these variables was used to account for both differences at baseline in reported health and subsequent variations in individual health change trajectories. The majority of organisations surveyed were classified as voluntary/community based (94%) with small numbers represented by church/faith based groups (4%), statutory organizations (2%) and housing association (.3%). Given the skewed nature of this variable, organisational classification was not used to explain variations in health patterns.

A series of models was specified building upon the baseline model 1 for WHOQUOL physical health (Table 5.3). With the exception of age (control variable), the final model 2 included only those explanatory variables that made a statistically significant contribution to the analysis.

Physical health differences at baseline (fixed effects)

Results showed that at baseline there were no significant differences in reported WHOQOL-BREF health scores between men and women, older and younger volunteers, those living alone and those living with a partner/family, those with and without caring responsibilities and those new to volunteering compared to experienced volunteers.

Weekly income was dropped from the analysis because of missing responses for approximately 30% of cases. Receipt of pension credits was used as a proxy indicator of income and results did show that those in receipt of pension credits reported significantly poorer physical health than those not in receipt of pension credits. Pension credit can be regarded as a proxy for socioeconomic status with age included in the model as a control, (see table 5.3, model 2). In addition, volunteers

reporting having some form of disability reported significantly lower health scores at baseline. The health differential was more pronounced by pension credit status (b= -4.50, p=.019) than by disability (b =-1.70, < .001).

Higher physical health scores at baseline were also linked to lower BMI scores (b =-.06, p<.001), higher overall activity levels (b =.06, p <.001) and better psychological health (b= .46, p <.001).

Factors explaining physical health change trajectories (interaction effects)

Although there was a slight dip in psychological health scores at 6 and 12 months, followed by a modest recovery at 18 months for the cohort as a whole, individual improvements in psychological health over time were associated with improvements in physical health. Psychological Health scores were treated as a level-1 time varying covariate in the analysis, and a group centered version of this variable was included in the model in order to account of intra-individual change in psychological health over time. The varying effects of psychological health were indeed statistically significant (b =.21, *p* <.001, table 5.3., model 2).

The multilevel model showed that there was also variation at the volunteer level in the degree of change in reported health over time (X^2_{time} = 0.70, model 2). This indicates that for 95% of respondents the estimated linear improvement trajectory for physical health scores ranged between 0.219 and 3.5 at each 6 month time point). A number of interaction variables were constructed between time (linear), time^2 (non-linear) and a series demographic explanatory variables in order to test for the moderating effects of sex, age, socioeconomic status, living arrangements, caring responsibilities, volunteering experience and satisfaction with volunteering on the relationship between time and reported physical health. Some of these interaction terms were able to account for the differential improvement rates in individual volunteer health trajectories over time. Firstly, improvement rates for those reporting a disability were much flatter over the period (b = -1.38, p< 0.001). As noted earlier, improvements in psychological well-being over time were associated with improvements in physical health (b =.21, p <.001). The model further indicated the existence of a cross-level interaction term between psychological health and sex of

respondent (b=.199, *p* =.024). This showed that co-occurrence in time of improvements in physical and psychological health was more evident among male volunteers. In the same way, the association between physical improvement and mental health improvement over time was also stronger for those in receipt of pension credits.

Random effects

The random effects parameters in the model showed a positive correlation between individual volunteer health scores at baseline and subsequent individual rates of change (COV $_{time, constant}$ = 0.517, r =.52), illustrating that volunteers with higher reported health scores at baseline were more likely to display greater improvements in health than those with lower initial health scores. This is also supported by the interaction effect previously cited in table 5.3 for disability over time (b =-1.39, *p* =0.001) which showed that the health change trajectory of those reporting having some form of disability was lower and more consistent with a maintenance pattern rather than improvement over time. Results therefore suggest that volunteers with lower WHOQUOL-BREF health scores at baseline have flatter health change trajectories over the time period, with an increased likelihood of maintenance or even decline in health for those with the lowest baseline health scores. This is not unrealistic. Older volunteers come into volunteering with a range of previous medical histories and are more likely to bring with them existing health issues or problems. This is evident also in section 3 of the results which describe the health characteristics of the baseline sample. In combination, these findings suggest that any effects of the volunteering experience on health are likely to be mediated by factors outside the control of volunteering organisations, and even the individuals themselves.

Table 5.3

Multilevel analysis of WHOQUOL-BREF (physical health) scores with covariates age, BMI, activity levels, disability, pension credits, WHOQUOL-BREF (psychological health) and cross level interactions.

	Initial Model 1 (no covariates)			*Final Model 2 (with covariates)*		
FIXED EFFECTS	*Coefficient*	*Std. Error*	*p-value*	*Coefficient*	*Std. Error*	*p-value*
Time (Linear)	1.366	0.124	0.000	1.859	0.131	**0.000**
Time^2 (non-Linear)	-0.358	0.039	0.000	-0.487	0.043	**0.000**
Age in years (centered)				-0.001	0.012	0.914
BMI (centered)				-0.061	0.017	**0.000**
Activity (centered				0.062	0.011	**0.000**
Disability reported				-1.700	0.230	**0.000**
Receiving Pension Credits				-4.495	1.922	**0.019**
Psychological Health (centered)				0.461	0.047	**0.000**
Psychological Health changes over time				0.206	0.059	**0.000**
INTERACTIONS						
Time x disability				-1.389	0.289	**0.000**
Time^2 X disability				0.360	0.093	**0.000**
Psychological health changes x Males				0.199	0.088	**0.024**
Psychological health (between) x Pension credit				0.240	0.119	**0.045**
Constant	14.838	0.480	0.000	8.052	0.753	0.000
RANDOM EFFECTS (variance components)						
Time (Linear)	0.711			0.701		
TIme^2 (non-linear)	0.054			0.062		
Psychological Health change	-			0.136		
Constant	3.783			1.359		
COV (Time, time^2)	-0.175			-0.194		
COV (Time, Psych. Health change)	-			0.013		
COV (Time, Constant)	1.640			0.517		
COV (Time^2, Psych. Change)				-0.018		
COV (Time^2, Constant)	-0.402			-0.112		
COV (Psych. Changes, Constant)	-			-0.039		
Residual	1.516			1.035		
Log likelihood	-2390.58			-1935.09		

5.5 Explaining trends in WHOQUOL-BREF Psychological Health scores

Psychological health differences at baseline

As noted in table 5.1, WHOQOL-BREF psychological health scores declined modestly over the period of the study but that the scores reported were on nevertheless consistently higher than those reported in a large UK based study of groups of healthy adults and adults with specific medical conditions (Skevington & McCrate, 2011, see table 5.6). At baseline there were no significant differences in reported WHOQOL-BREF psychological health scores in terms of age, gender, experience of volunteering, pension credit status or having caring responsibilities. Those living alone (b=-.57, p=.018) and those with a disability (b=-1.64, p <.001) reported lower mental health scores at baseline.

Psychological health change trajectories

As shown by the analysis of mean psychological health scores for the cohort as a whole, there was a slight overall reduction in psychological health scores over the time period but the non-linear nature of the time trend suggests a stable psychological profile for the cohort as a whole over the time period. This stability was also demonstrated at the individual volunteer level in terms of the lack of variability in individual volunteer change trajectories over time (0.159). This compares to greater variability in individual physical health trajectories (0.711, table 5.3). Given this lack of variation, it was therefore unsurprising that none of the main demographic variables were able to account for such small differences in the individual psychological change profiles over time. In addition, the differences across volunteers in their mental health change trajectories was not linked to the baseline psychological health (COV time, constant = -0.171, r = -0.29). Differences in psychological health between volunteers at baseline were linked to their initial levels of reported social support (b = .67, p <.001) and physical health 9 (b = .45, p <.001). In addition, individual improvements in physical health (b = .34, p <.001) and the level of social support (b = .35, p <.001) were associated with improvements in psychological health over time.

The stability in psychological health scores is impressive in this age group given that over one third of those sampled at baseline reported hypertension problems and/ or arthritic conditions, yet the majority 80%+ also expressed satisfaction with their functional status and their volunteering experiences at 6, 12 and 18 months. The next section compares the psychological health scores obtained in the volunteer sample with other studies of older adults which have employed the WHOQUOL-BREF. Despite significant percentages declaring suffering from specific health conditions, being in pain, yet remaining physically active, these comparisons suggests that the volunteers' psychological health is on a par with healthy adults in other cultural contexts and that their attitudes generally reflect strong levels of stoicism and positivity. The maintenance of mental health scores over the period of study could be explained by findings in the literature relating how volunteering can help older people maintain a sense of purpose and self-esteem. Paylor (2011) points to a number of factors revealed in his review recent research studies which can help explain the psychological benefits of volunteering, namely 'perceptions of self' and 'social integration'. Perceptions of self' refers to how volunteering can shape the way that people think about themselves by helping people find a sense of purpose thereby increasing self-confidence. In the same way, 'social integration' refers to how volunteering connects people with other people and provides the building blocks of social capital" (Paylor, 2011, p27). For older people, the maintenance of health and the prevention of decline associated with retirement and ageing may be highly valued. The stability in mental health scores therefore should be interpreted in a favourable light.

Table 5.4

Multilevel analysis of WHOQUOL-BREF (psychological health) scores with covariates age, BMI, activity levels, disability, pension credits, WHOQUOL-BREF (physical health) and cross level interactions.

	Initial Model 1 (no covariates)			*Final Model 2 (with covariates)*		
FIXED EFFECTS	*Coefficient*	*Std. Error*	*p-value*	*Coefficient*	*Std. Error*	*p-value*
Time (Linear)	-0.235	0.109	0.032	-0.989	0.131	**0.000**
Time^2 (non-Linear)	0.078	0.037	0.035	0.144	0.043	**0.000**
Disability				0.154	0.277	0.560
Living alone status				-0.196	0.198	0.322
Social Support(centered)				0.677	0.111	**0.000**
Social support changes over time (within variation)				0.349	0.114	**0.002**
Physical Health (centered)				0.449	0.044	**0.000**
Physical Health changes over time (within variation)				0.338	0.039	**0.000**
Constant	15.759	0.12	0.000	6.285	0.856	0.000
RANDOM EFFECTS (variance components)						
Time (Linear)	0.023			0.159		
Physical health changes	-			0.052		
Social support changes				0.604		
Constant	3.606			2.142		
COV (Time, Physical Health changes)	-			-0.072		
COV (Time, Social Support changes)	0.084			0.133		
COV (Time, Constant)	-0.045			-0.171		
Residual	1.41			1.011		
Log likelihood	-2332.70			-1713.08		

5.6 Comparing WHOQOL-BREF scores, Attitudes to Ageing (AAQ) and General Health Questionnaire (GHQ-12) scores with other studies.

5.6.1 WHOQUOL-BREF Scores

Comparing health figures obtained in this study with other population studies in the UK, Ireland, Europe or the US is difficult since there is no consensus on the use of measures aimed at assessing quality of life. The British Household Panel Surveys

(BHPS 1991-2008) have included a Northern Ireland cohort since 2001 and employed the SF-36 (Ware & Sherbourne, 1992) in the 2004 wave only. The BHPS was replaced by the Understanding Society Survey in 2009/10 and this also uses the CASP-19 to assess Quality of Life measure. The English Longitudinal Study on Ageing (ELSA) and the U.S. Health and Retirement Study (HRS) also employ the CASP-19 (Hyde, Wiggins, Higgs & Blane, 2003); and the Survey of Health Ageing & Retirement in Europe (SHARE) uses a modified version of the CASP-19 (CASP-12).

More recently, several studies in the UK have used the WHOQOL-BREF to assess quality of life in adults and older people (e.g. Skevington, Loft & O'Connell, 2004; Deary, Gow et al., 2007; Murray et al., 2011; Brett, et al., 2012; Mõttus, Gale, Starr & Deary, 2012). Mõttus et al. (2012) examined community dwelling older people living in Scotland, using data from the 1936 Lothian Birth Cohort (LBC1936). They reported that adults whose ages ranged from 67.7 - 71.3 years at the time of assessment recorded a mean physical health score of 4.03 (SD=.66). Using the same scoring method employed by Mõttus et al. (2012), the current study shows similar levels of physical health scoring among the volunteers at each of the four time points (M=3.69,4.05, 4.02 and 3.97 respectively). The Scottish study also reported a mean psychological health score of 3.92 (SD=.45) and this compares to the current study values at each time point of 3.97, 3.88, 3.94 and 3.94 respectively.

Bret et al. (2012) employed the same scoring method for the WHOQOL-BREF as was used in the current study. The authors compared domain scores for both the 1936 Lothian Birth Cohort LBC1936 (aged around 70 at the time of assessment) and the 1921 Lothian Birth Cohort (LBC1921) aged 79^{+}. Table 5.5 shows that the physical health scores recorded at baseline for the Northern Ireland cohort were on average lower than community dwelling adults aged 70 living in Scotland and were indeed more similar to the older Scottish adults (aged 79^{+}). However, after baseline, the subsequent increases in volunteer physical health scores over time evident among the volunteer sample were more consistent with the younger Scottish group (aged 70). The higher health scores at 6, 12 and 18 months were also close to those reported for a sample of older Canadians aged 60-95 years and consistently higher than a representative population sample of older Norwegians of a similar age (60-90

years) (Kalfoss et al., 2008). The psychological health scores were also consistently higher among the NI volunteer sample compared to the Scottish and Norwegian adults, but were marginally lower than the Canadian sample (table 5.5).

Table 5.5

Comparing (unadjusted) means (and standard deviations) of WHOQOL-BREF Physical and Psychological Health domains WITH older age cohorts in Scotland, Canada and Norway.

	WHOQUOL-BREF		Attitudes to Ageing AAQ		
Mean Scoring method	Physical health	Psychological health	Psych. Growth	Psych. Loss	Phys. Change
Volunteer Now 2013 study					
Baseline (N=337)	14.78	15.97	28.27	35.29	27.57
6 months (N=291)	16.20	15.75	27.94	35.46	26.27
12 months (N=274)	16.09	15.82	26.57	35.10	27.82
18 Months (N=267)	15.90	15.74	28.49	35.22	26.15
Mean over time	**15.74**	**15.82**	**27.82**	**35.27**	**26.95**
Bret et al., (2012) Scotland					
LBC1936 (aged 70) (N=1091)	16.1	15.7	-	-	-
LBC1921 (aged 79+) (N=550)	14.8	15.3			
Kalfoss et al, (2008, 2010)					
Canada (aged 60-95) (N=192)	16.13	16.05	20.02	35.56	28.21
Norway (aged 60-91) (N=469)	14.47	15.00	29.02	29.64	26.42

In addition, the current results can be benchmarked against a recent large scale study comparing WHOQOL-BREF scores for healthy and unhealthy people across twenty-seven disease groups/ health conditions at 38 UK sites in a wide range of settings (N=4628) (Skevington & McCrate, 2011). This study employed an alternative 0-100 scoring scale for all domains of the WHOQOL-BREF as described in the official manual (Harper, 1996), and domain scores for the volunteer sample have been re-calculated using this scoring method to aid comparisons here. In line with results given in tables 5.5 and 5.6, this shows that the volunteer sample scores were consistently higher than all sub-samples of people with specifically diagnosed health problems. Compared to 'well' samples the volunteers reported lower physical health

scores at baseline but their improvements in physical health over time brought their scores closer to these 'well' groups. In terms of psychological wellbeing, the volunteer sample scored on average consistently higher than both the well and unwell samples. Volunteer scores have also been compared to population norms from an Australian study by Hawthorne et al. (2006). Again, health scores at baseline were lower than the Australian samples, but the increase in scores after baseline results in higher levels of reported health than those reported for the 60^{+} age groups. In terms of psychological health, the volunteer sample scores are similar to the 50-59 year old Australian sample and better than the 60^{+} age groups.

Table 5.6

Comparison of unadjusted means (and standard deviations) of WHOQOL-BREF Physical and Psychological Health or current study against people in UK with various health conditions and Australian population norms.

	Physical health	Psychological health
*Volunteer Now study (2013)*Baseline		
(N=337)	66.21 (15.65)	73.42 (14.24)
6 months (N=291)	74.55 (19.71)	71.87 (14.02)
12 months (N=274)	74.41 (19.27)	72.66 (12.47)
18 Months (N=267)	72.28 (20.63)	73.21 (13.29)
Mean over time	**71.86 (18.82)**	**72.79 (13.51)**
Skevington & McCrate (2011) UK		
Well (N = 1324-1328)	76.49 (16.19)	67.82 (15.56)
Lifestyle problems (N = 121-123)	54.06 (20.20)	54.15 (16.76)
Psychiatric (N = 77-80)	54.57 (20.62)	45.93 (25.99)
Musculoskeletal (N = 493)	54.84 (20.09)	57.31 (17.99)
Neurological (N = 45)	40.37 (20.44)	54.81 (18.13)
Dermatological (N = 67-70)	63.36 (18.82)	68.49 (14.22)
Cardiovascular (N = 57-59)	45.19 (22.05)	54.74 (21.47)
Endocrine (N = 519-524)	67.84 (19.55)	67.66 (16.10)
Gastrointestinal (N = 656-666)	54.99 (20.62)	56.03 (18.45)
Urogenital (N = 86-87)	66.20 (19.63)	50.93 (20.33)
Hawthorne et al., (2006) Australia		
50-59 years (N=66)	80.3 (16.9)	73.8 (12.6)
60-69 years (N=188)	72.3 (17.8)	69.9 (15.0)
70-79 years (N=252)	69.6 (17.9)	70.1 (13.2)

5.6.2 Attitudes to Ageing (AAQ) domain scores

The AAQ was designed as part of a larger study to develop a measure of quality of life (QOL) of older adults and to assess factors related to QOL. In taking a lifespan development approach, the experience of older age was a conceptualised one in which older adults experience both losses and gains (Laidlaw et al., 2006). Positive attitudes to one's own ageing in terms of psychosocial growth may have a protective effect on mental and physical health (Ostir et al., 2004). Understanding attitudes of older adults can assist with evaluating programmes that are meaningful to older adults, contribute to their psychological growth, minimize physical decline and reduce perceptions of psychological loss (Molzahn et al., 2009). Attitudes also influence decisions that have an impact on health-promoting behaviours, as suggested in the WHO Active Ageing Policy Framework (2002).

A number of studies using the AAQ have been conducted among older people in Spain (Lucas-Carrasco et al., 2013; Brazil (Chachamovich et al., 2008), Canada and Norway (Kafloss et al., 2010), and the UK (Laidlaw, 2006). Results from the Spanish Study were not available at the time of writing this report as the publication release date was March 2013 and the Brazilian study only reported responses at the individual question level rather than the domain level. In order to compare findings from the current study with the Canadian and Norwegian study, AAQ scale scores were calculated using the same scoring method employed by Kafloss et al., (2010). Kafloss et al. reported that the sample of Norwegian older people aged 60^{+} tended to have more positive attitudes to ageing than their Canadian counterparts in that they reported higher psychosocial growth, lower psychosocial loss and lower physical change scores. The Volunteer sample was more closely aligned with the Norwegian sample in terms of psychosocial growth and physical change, but psychological loss scores were comparable to the higher scores given by the Canadian sample. These differences combined with the finding that psychosocial growth was the only attitude set to improve over the time period (albeit in a small way) suggest that formal volunteering may have more of a positive effect on growth attitudes but that feelings of loss due to ageing remain consistently higher. Despite the slight improvement

over time in growth scores, the attitude sets displayed by older volunteers remain stable over the time period.

5.6.3 General Health Questionnaire (GHQ-12) Scores.

Volunteer mental health/psychological? scores were also assessed at time point 4 (18 months) using the General health Questionnaire (GHQ-12, Goldberg and Williams, 1988). The GHQ-12 questionnaire concentrates on the broader components of psychological morbidity and consists of twelve items measuring general levels of happiness; depression and anxiety; sleep disturbance; and ability to cope over the last few weeks. The twelve items are rated on a four-point response scale, where a score of 0 is given to responses such as that the symptom is present 'not at all' or 'no more than usual', and a score of 1 is given to responses such as 'rather more than usual' or 'much more than usual'. Responses to the GHQ12 items were scored, with one point given each time a particular feeling or type of behaviour was reported to have been experienced 'more than usual' or 'much more than usual' over the past few weeks. These scores are combined to create an overall score of between zero and twelve. A score of four or more (referred to as a 'high' GHQ12 score) has been used here to indicate the presence of a possible psychiatric disorder.

Scores on the GHQ-12 were calculated in order to compare the percentages 'at risk' in the volunteer sample with recent population estimates in Northern Ireland, England and Scotland. Table 5.7 shows that only 7 volunteers (2 males and 5 females) were in the 50-54 age category at 18 months, making percentages in this group invalid. Results showed that both male and female volunteers exhibited lower overall risk of psychological disturbance compared to Northern Ireland population estimates within all three valid age bands. The risk for volunteers was also lower than estimates in Scotland and England. The one exception to this was the risk for females in the 75^{+} category whose risk was 5 cases in 22 (23%) compared to 14% for Northern Ireland and 17 % for Scotland. Given the low numbers in this category it is difficult to assess whether mental health issues are a significant risk for the female 75^{+} age group.

Table 5.7

A comparison of percentages of volunteers scoring 4 or more on the General Health Questionnaire (GHQ-12) with estimates from the N. Ireland Health Survey (2011/12), Scotland & England (2008) and Scotland (2010/11).

AGE	GENDER	GHQ-12 Scores (4 or more)			
		Scotland and England (2008) %	Scotland (2010/11) %	Northern Ireland (2011/12) %	**NI Volunteer sample at 18 months %**
*45-54**	Males	12	14	21	**- (N=1/2)**
	Females	19	21	24	**- (N=3/5)**
	ALL	16	17	23	**- (N=4/7)**
55-64	Males	12	17	18	**11 (N=3/27)**
	Females	15	16	22	**8 (N=4/49)**
	ALL	14	17	20	**9 (N=7/76)**
65-74	Males	9	8	13	**5 (N=2/42)**
	Females	13	13	18	**11 (N=6/57)**
	ALL	11	11	16	**8 (N=8/99)**
75+	Males	14	9	17	**0 (N=0/13)**
	Females	17	18	14	**23 (N=5/22)**
	ALL	16	14	15	**14 (N=5/35)**

Sources: Health Survey Northern Ireland 2011/12; Health Survey Scotland 2008/9, 2010/11; Health Survey England 2008/9

5.6.4 Quality of Life perceptions across time (Table 5.8)

Comparing the percentages agreeing with various quality of life statements (table 5.8) shows a similar maintenance pattern over the three time periods with the majority of respondents expressing positive views in relation to quality of life, enjoyment of life, having a meaningful life and mobility. Relatively fewer volunteers endorsed negative attitudes such as being limited by pain and having negative mood feelings over the same time periods.

Table 5.8

A comparison of percentage responding to various quality of life measures at baseline, 6, 12 and 18 months (matched sample)

	% OF MATCHED SAMPLE			
	Baseline	6 Months	12 Months	18 Months
Quality of Life (Well /very well)	95.9	91.9	91.1	90.8
Enjoys life (Very/extremely)	82.9	77.0	84.1	82.7
Meaningful life (very/extremely)	76.8	72.2	77.2	76.5
Energy (mostly/completely)	80.0	79.8	77.9	77.0
Able to get around (Well/very well)	92.7	88.9	85.3	80.7
Satisfaction with health (Yes/Very)	80.4	78.6	79.4	74.6
Satisfaction with sleep (Yes/Very)	72.7	68.3	68.3	64.2
Pain limits you (Very/extremely)	4.9	4.0	5.3	6.5
Negative feelings (Never/seldom)	79.5	80.7	81.1	81.6
Negative feelings (Quite often)	16.7	14.5	15.2	15.1

5.7 Physical Activity levels over time by age and gender.

Physical activity can be defined as all forms of activity, such as everyday walking or cycling, work or voluntary-related activity, active recreation such as going to a gym, dancing, jogging, gardening or playing active games, as well as organised and competitive sport. Three questions on physical activity were included in the questionnaire at all four time points. These questions related to definitions of

vigorous, moderate and mild activity levels (See section 2.5.2 describing measures, p10).

There is a growing body of evidence worldwide of the health benefits of engaging in regular physical activity throughout the lifespan. A number of recent systematic reviews have shown that regular physical activity has an inverse dose– response association with coronary heart disease, stroke, type 2 diabetes and some types of cancer (Kesaniemi, Riddoch, Reeder et al., 2010; Warburton, Charlesworth, Ivey et al., 2010; Paterson & Warburton, 2010). Studies involving older adults (65^{+}) have demonstrated an inverse relationship between physical activity and cardiovascular disease risk that is similar in magnitude to that observed for younger individuals (Sherrington, Whitney, Lord et al., 2008). In addition, some studies have concluded that regular physical activity helps maintain and improve muscle strength, thus reducing the risk of falls in older people (Portegijs et al., 2007; O'Donovan, Blazevich, Boreham et al., 2010).

Among volunteers in this study, the overall pattern of physical activity levels was also one of maintenance for mild and moderate activities in the period from baseline to 12 months with a reduction in vigorous activities from baseline to 6 months and a subsequent levelling off in the period 6-12 months. Figures 5.8-13 describe activity levels for men and women separately.

5.7.1 Vigorous activity.

The older age group (70^{+}) reported a gradual reduction over time in the amount of rigorous physical activities. There was some variation by age group and sex over time. Men in the younger age category (50-69 years) reported spending more time engaged in vigorous activities than women of this age. For the older age category, this trend was reversed with women in the 70^{+} age group reporting higher activity levels than their male counterparts.

Age differences in activity levels were more pronounced among the male volunteers with older men reporting consistently lower levels of vigorous activity at 6 and 12 and 18 month periods than their younger male counterparts in the 70+ age group (fig. 4.14).

For women, vigorous activity levels were generally reported as lower than men's. Somewhat surprisingly, women in the older age group recorded more vigorous activity on average than women in the younger age group over the first 12 months. However, there was a gradual decline in vigorous activity levels reported at each six monthly interval for the older 70+ group compared to a more consistent and stable trend for the younger female age group (figure 4.13).

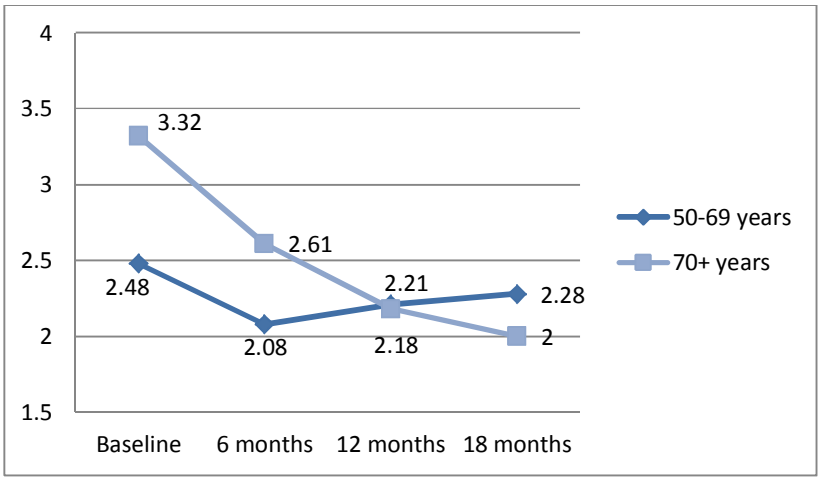

Figure 5.8

Mean number of days in previous week engaged in VIGOROUS physical activity (Women).

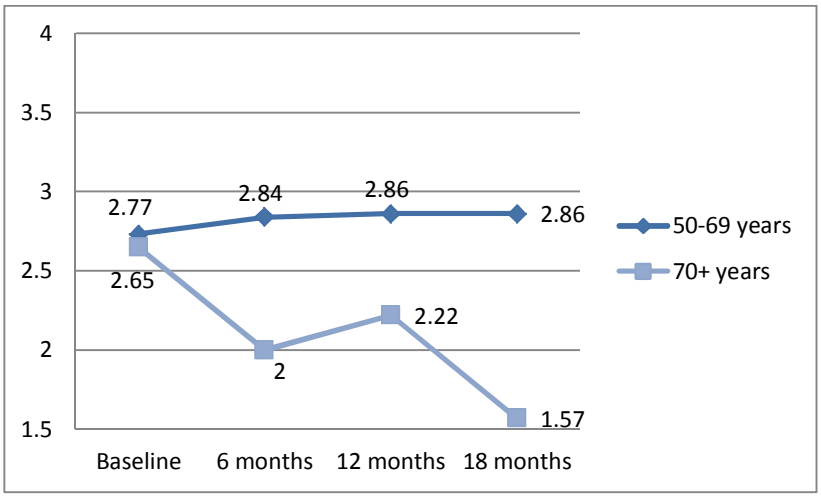

Figure 5.9

Mean number of days in previous week engaged in VIGOROUS physical activity for at least 10 minutes at a time (Men).

5.7.2 Moderate activities

For the cohort as a whole, there was a slight decline over the 12 month period in the mean number of days reportedly spent on moderate activities but this reduction was not evident for the younger men aged 50-69 who exhibited a pattern of activity maintenance over the four time periods. For women in the 70^{+} age group, there was a decline in moderate activity over the first three periods from baseline to 12 months and a levelling off at 18 months. By contrast, women in the 50-69 age category reported a reduction in moderate activities from baseline to 6 months with a levelling off at 12 months followed by a slight decline at 18 months. For men in the 70^{+} age group, moderate activity levels increased from baseline to 6 months and were maintained at 12 months. This was followed by a more dramatic reduction in their reported activity levels at 18 months. For men aged 50-69, the general trend over the 18 month period was upward (figure 4.15).

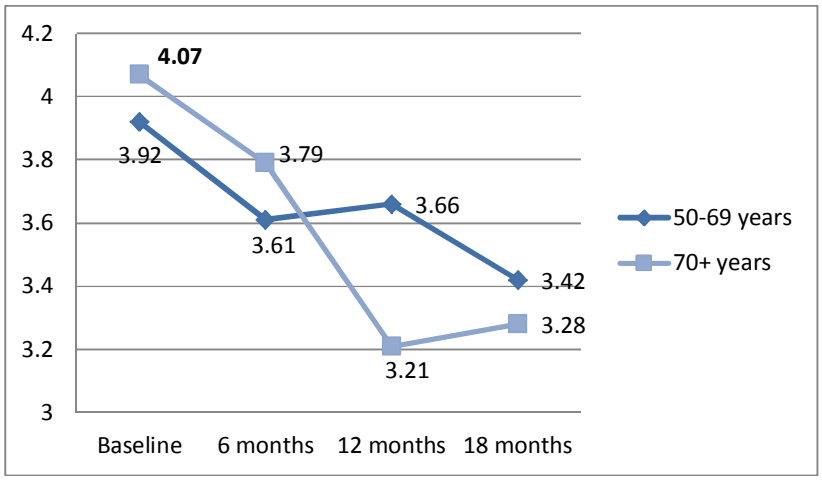

Figure 5.10

Mean number of days in previous week engaged in MODERATE physical activity (Women).

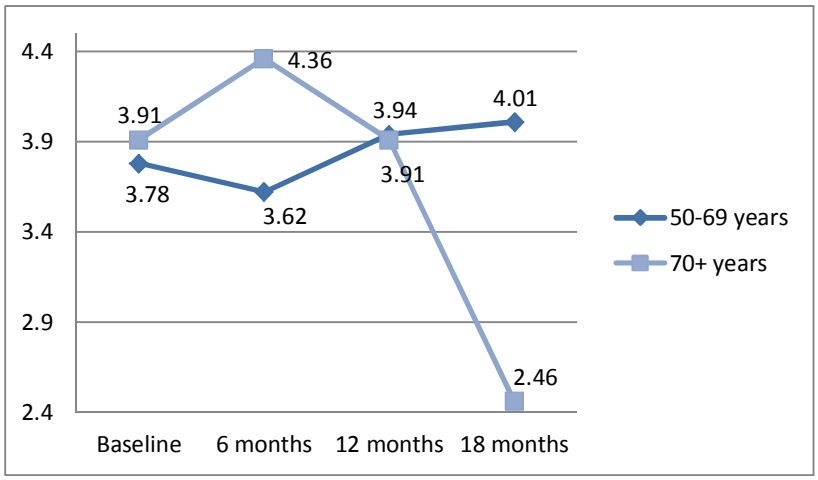

Figure 5.11

Mean number of days in previous week engaged in MODERATE physical activity for at least 10 minutes at a time (Men).

5.7.3 Mild activities

The overall pattern for mild activities was one of maintenance for the cohort as a whole over the time period, and this was especially so in the 50-69 age group. For

the older group (70+ years), mild activities were generally maintained from baseline to 6 months and declined from 6-12 months for both men and women.

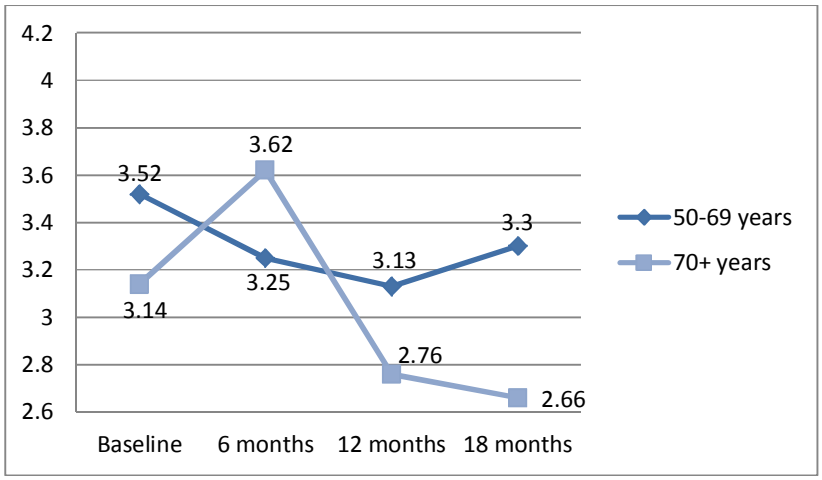

Figure 5.12

Mean number of days in previous week engaged in MILD physical activity for at least 10 minutes at a time (Women).

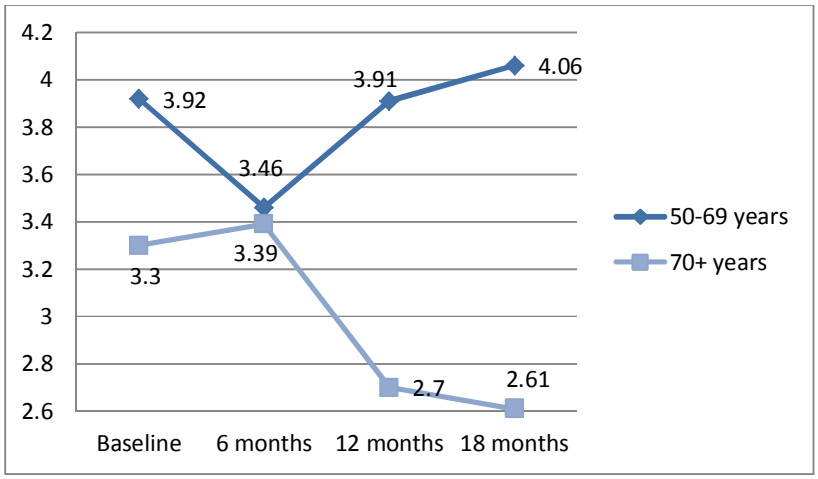

Figure 5.13

Mean number of days in previous week engaged in MILD physical activity for at least 10 minutes at a time (Men).

5.7.4 Seasonality

The influence of seasonal factors in population activity levels has received some attention in the research literature. Klenck, Buchele, Rapp et al., (2012) found that weather conditions are a factor in walking duration and physical activity among older people living in Germany. It was speculated in the previous interim report at 12 months that observed reductions in more rigorous activity from baseline to six months among the older age group (70^{+}) may in part be attributable to seasonal influences among the older group. Wave 1 data was collected during the spring, summer and early autumn months (March-November, 2010), whereas wave 2 data was collected largely during the autumn, winter and spring periods (October – June 2011). The increase in activity levels recorded for the 12-month period coincided with the wave 3 data collection period which largely during the summer, autumn and early winter (May-January 2011). Wave 4 was similar but not identical to wave 2 data collection and occurred largely during the winter and early months (December-June 2012).

Tucker and Gilliland's (2007) review of 37 primary studies published from 1980-2006 from eight countries (USA, France, Australia, Cyprus, Holland, Canada, Guatemala and Scotland) found that season and weather conditions have an integral effect on physical activity patterns across all age groups. Haggarty et al., (1994) reported seasonal effects in the Scottish context with increased activity levels in the spring/summer. Lower activity levels among older people in winter may therefore be associated with decreased fitness levels and consequential increases in blood pressure. Goodwin, Pearce et al., (2001) have cited evidence showing that older adults have raised blood pressure levels in winter compared to summer. This study also linked lowered deep body temperature among older people in winter to increases in blood pressure. Other studies have also implied a possible causative role of increased blood pressure in the higher number of strokes and heart attacks in the winter (Keatinge et al., 1992; Donaldson et al., 1997). Although it is generally advantageous for older people to be physically active to prevent circulatory disease, Goodwin et al., (2001) suggest that some older people should avoid vigorous or

intense activities at particular times of the day during the winter when blood pressure is more elevated (mornings, evenings). Consequently, the drop in vigorous physical activity at 6 months and 18 months for men in the 70+ age group (figure 5.13) due to a possible seasonal dip in activity levels could paradoxically be beneficial to health among this older group.

In conclusion, given that each data collection wave lasted for 6 months, this meant that no wave could be classified as completely season specific. Indeed, no two waves covered exactly the same months of the year, although there was some similarity between waves 1 and 3, and between waves 2 and 4 for pragmatic and logistical reasons (see table 1.1, p. 25). For this reason, the study waves were designed to minimise the potential influence of seasonal variations in activity levels.

5.8 Body Mass Index (BMI) changes over time by age and gender

Self-reported Body Mass Index displayed a maintenance pattern over the 18 month time period and this was the case for both men and women as well as for the younger and older age groups. On average, the older age group (70+ years) reported higher BMI scores than the younger age group and age group differences were more pronounced for men over the three time points (figure 5.15).

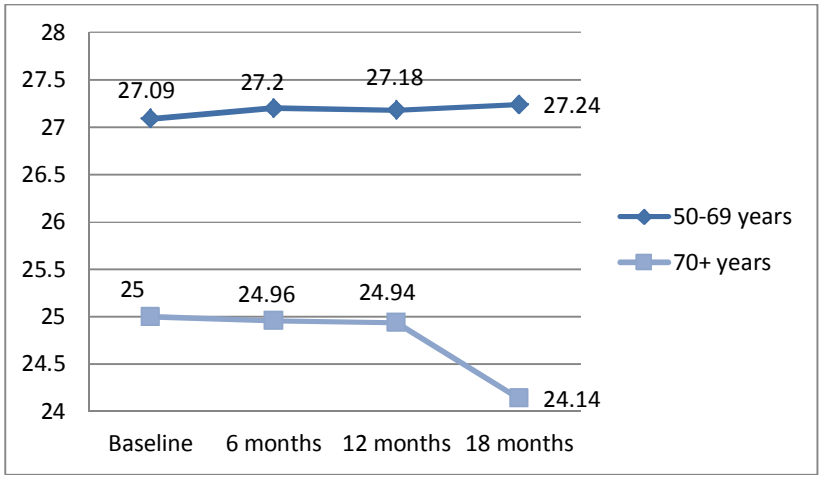

Figure 5.14

Mean self-reported Body Mass Index (Women).

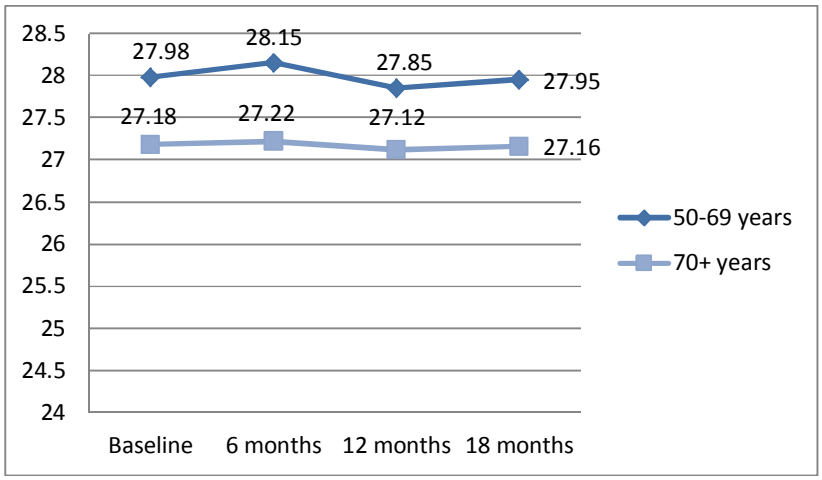

Figure 5.15

Mean self-reported Body Mass Index (Men).

5.8.1 Obesity in Northern Ireland

The prevalence of obesity in Northern Ireland is increasing in all age groups, including older persons (A Fitter Future for All Consultation report 2010-11, DHSSPS). Data from large population studies show that mean body weight and BMI gradually increase during most of adult life and reach peak values at 50–59 years of age in both men and women. Data from longitudinal cohort studies in the US and Finland suggest that body weight and BMI do not change, or decreases only slightly, in older adults (60–70 year old at study entry) (Rissanen, Heliovaara & Aromaa, 1988; Fogelholm, Kujala, Kaprio & Sarna, 2000). Results from the Health Survey for England (2010) indicate that overweight and obesity rates peak in the 55-64 age group (table 5.10). For older people, being overweight can be accompanied by health complications due to risk of stroke, coronary heart disease and diabetes and losing weight or being underweight brings potential harmful effects on muscle and bone mass. These concerns affect healthcare providers, policy makers, and the public.

Tables 9a-c show that the majority of the volunteer cohort are in the normal and underweight categories with only small percentages in the severely underweight and obese categories. These percentages persist over the four time periods for both men and women. The stability in reported BMI over the three time points is related to relatively high activity levels among this cohort. In addition, table 5.10 compares

those classified as overweight and obese in the volunteer cohort at each time point, with population estimates taken from a recent study in England (2010). Although these figures compare self-report BMI in the Northern Ireland cohort with more objective anthropometric assessments in the English context, the comparison nevertheless serves to highlight that that volunteers in the Northern Ireland context have consistently healthier BMI ranges than general population estimates.

Table 5.9a

A comparison of percentage of volunteer cohort in various BMI classifications at baseline, 6, 12 and 18 months (matched whole sample – Men only)

(WHO) CLASSIFICATION	BMI range (kg/m^2)	% OF MATCHED SAMPLE			
		Baseline	6 Months	12 Months	18 months
Very severely underweight	< 15.0	0	0	0	0.9
Severely underweight	15.0 to 15.99	0.5	0.5	0.5	0.5
Underweight	16.0 to 18.5	0.9	0.9	0.9	1.9
Normal (healthy weight)	18.51 to 24.99	35.6	35.3	36.7	32.1
Overweight	25 to 29.99	41.5	40.9	40.0	42.8
Obese Class I (Moderately obese)	30 to 34.99	14.0	15.3	14.9	15.3
Obese Class II (Severely obese)	35 to 39.99	4.1	4.2	4.7	3.7
Obese Class III (Very severely obese)	over 40	2.3	2.8	2.3	2.8
		100%	100%	100%	100%

Table 5.9b

A comparison of percentage of volunteer cohort in various BMI classifications at baseline, 6, 12 and 18 months (matched whole sample – Men only)

(WHO) CLASSIFICATION	BMI range (kg/m^2)	% OF MATCHED SAMPLE			
		Baseline	6 Months	12 Months	18 months
Very severely underweight	< 15.0	0	0	0	1.6
Severely underweight	15.0 to 15.99	0.8	0.8	0.8	0.8
Underweight	16.0 to 18.5	1.5	0.8	1.5	2.4
Normal (healthy weight)	18.51 to 24.99	39.1	42.2	43.1	33.9
Overweight	25 to 29.99	40.6	35.2	33.8	40.9
Obese Class I (Moderately obese)	30 to 34.99	12.8	14.8	13.8	15.0
Obese Class II (Severely obese)	35 to 39.99	2.3	2.3	3.8	2.4
Obese Class III (Very severely obese)	over 40	3.0	3.9	3.1	3.1
		100%	100%	100%	100%

Table 5.9c

A comparison of percentage of volunteer cohort in various BMI classifications at baseline, 6, 12 and 18 months (matched whole sample – Women only)

(WHO) CLASSIFICATION	BMI range (kg/m^2)	% OF MATCHED SAMPLE			
		Baseline	6 Months	12 Months	18 months
Very severely underweight	< 15.0	0.3	0	0.4	1.2
Severely underweight	15.0 to 15.99	0.3	0.3	0.4	0.4
Underweight	16.0 to 18.5	0.6	0.6	0.7	1.5
Normal (healthy weight)	18.51 to 24.99	36.3	36	37	33.5
Overweight	25 to 29.99	42.0	40.5	38.9	41.5
Obese Class I (Moderately obese)	30 to 34.99	15.4	16.5	15.9	15.8
Obese Class II (Severely obese)	35 to 39.99	3.3	3.9	4.4	3.5
Obese Class III (Very severely obese)	over 40	1.8	2.5	2.2	2.7

Table 5.10

A comparison of volunteer cohort percentages classified as being overweight (BMI>25) and obese (BMI>30) with population estimates in Northern Ireland and England 2011.

Age	BMI CLASSIFICATION	Health Surveys for…		Volunteer Cohort (%)			
		England 2011	Northern Ireland 2010/11	Baseline	6 Months	12 Months	18 months
*45-54**	Overweight	40	40	37*	54*(1)	50 (2) *	67
	Obese	32	30	33*	23*	13*	33
	Mean BMI	*28.6*	28.2	*28.8*	*27.9*	*28.4*	*29.8*
55-64	Overweight	40	41	43	40	36	39
	Obese	32	34	20	24	29	27
	Mean BMI	*28.6*	28.5	*27.5*	*28.3*	*28.8*	*28.9*
65-74	Overweight	43	42	43	40	40	41
	Obese	31	30	20	25	21	21
	Mean BMI	*28.5*	28.2	27.2	27.1	26.9	26.5
75+	Overweight	42	47	36	38	39	45
	Obese	30	16	17	14	17	15
	Mean BMI	28.1	26.7	26.3	26.9	27.2	27.2

Note: * indicates that volunteer cohort percentages are based on those aged 50-54. Numbers in these categories were small due (<5) to restricted age range so percentages should be treated with caution.

5.8.2 Comparisons with the Continuous Household Survey for Northern Ireland 2010-11.

Recent figures from the 2010-11 Continuous Household Survey (CHS) for Northern Ireland indicate that sedentary activity tends to increase with age. Table 5.11 shows that approximately 68% of the 50-69 year olds reported 'No days per week' normally spent in sport or physical activity. The figure for sedentary behaviour increases to 81% of those aged 70+ years. In addition, the figures on the actual amount of time spent on sport and physical activity mirror these findings.

By contrast, figures from this study indicate strikingly higher rates of physical activity among older volunteers and lower rates of sedentary behaviour. Direct comparisons with the CHS figures presented in tables 5.9 and 5.10 are not possible due to differences in the questions used but the general trends are clear. Responses to the three separate questions on physical activity (vigorous, moderate, mild) were combined to arrive at percentage figures for sedentary behaviour in the previous seven days. The percentage indicating that they had been engaged in 'no days' of physical activity in the previous seven days was 3.2% at baseline. This figure rose to 4.7% at 6 months, dropped to 3.5% at 12 months and rose again slightly to 5.8 at 18 months, thus indicating that sedentary behaviour was low and stable for the duration of the study.

Table 5.11

Continuous Household Survey (2010-11) figures for the number of days per week normally spent participating in sport and physical activity

	% of respondents participating…								
	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days	Base
All	59	14	10	8	3	2	1	3	*3,529*
Aged 50-	68	12	9	4	1	1	0	3	*1,125*
Aged 70+	84	8	5	3	0	1	0	0	*542*
Aged 50-	67	13	10	4	1	1	0	3	*872*
Aged 65+	81	9	5	3	0	1	0	1	*795*

Table 5.12

Continuous Household Survey (2010-11) figures for time normally spent per week participating in sport and physical activity

Profile of respondent	% of respondents participating for following times during a week				Base
	No time	Less than 2.5 hrs	2.5 and less than 5 hrs	Over 5 hours	
All respondents	55	20	15	10	*3,216*
Aged 50-69	66	15	11	8	*1,053*
Aged 70 and over	83	6	7	4	*525*
Aged 50-64	64	16	12	8	*809*
Aged 65 and over	80	8	7	5	*769*

5.8.3 New Guidelines on recommended activity levels

A new report in 2012 entitled 'Start Active, Stay Active' issued by the four Chief Medical Officers (CMOs) of England, Scotland, Wales and Northern Ireland includes new guidelines on recommended activity levels for older people for the first time in the UK. The report highlights that across the UK, participation in physical activity declines significantly with age for both men and women and also varies between geographical areas of the UK and socio-economic position (table 5.13). Self-reported physical activity levels are highest among men in Scotland with 45% meeting recommended levels, compared to 33% in Northern Ireland, 38% in Wales and 39% in England. In addition a recent British Heart Foundation Report (2010) points to also a considerable difference by age, with those aged 65 or above consistently less likely to meet the recommended amount.

Table 5.13

Self-report measures of the percentage of adults meeting UK physical activity guidelines (2011).

	Men	Women
Northern Ireland	33%	28%
England	40%	28%
Wales	36%	23%
Scotland	43%	32%

These figures show that more than half of adults do not meet the recommended levels of physical activity. However, the true position is likely to be worse than this as individuals self-report surveys tend to over-estimate the amount of physical activity people do. The 'Start Active, Stay Active' report further highlights the risks of excessive sedentary behaviour and stresses the importance of physical activity for people of all ages. These figures also concur and show little change from figures cited in a report by the Centre for Research in Ireland (CARDI, 2011) which highlighted that 36% of people over the age of 50 in ROI (Department of Health and Children, 2007) and 39% of people over the age of 50 in NI (DHSS&PS, 2006) report low levels of physical activity in their daily lives.

Emerging evidence from systematic reviews highlighted by the Sedentary Behaviour and Obesity Expert Working Group in the UK (2010) showed an association between sedentary behaviour and overweight and obesity, with some research also suggesting that sedentary behaviour is independently associated with all-cause mortality, type-2 diabetes, some types of cancer and metabolic dysfunction. This report explicitly recognises that older adults (65^{+}) who participate in any amount of physical activity gain some health benefits, including maintenance of physical health and cognitive function.

According to the guidelines set out for older people in the CMOs report

> "*...older adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of*

10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week." (p56).

However, the evidence suggests that the overall volume of activity is key to the beneficial effects of physical activity rather than specific types of activity or combinations of intensity or frequency. Accordingly, the report suggest that

> *"...older adults should aim to achieve the recommended amount of activity in a manner that is most convenient and comfortable for them"* (p 40).

The report also cites evidence from the US, Canada and UK that those older adults who regularly engage in moderate physical activity are likely to benefit from more vigorous exercise (75 minutes spread over a week) or combinations of vigorous and moderate activities. It is important to stress that individuals should seek medical advice on increasing their activity levels and that activity level increases need to be built up gradually over time. (Kesaniemi, Riddoch, Reeder et al., 2010; O'Donovan, Blazevich, Boreham et al., 2010; Patterson & Warburton, 2010; Warburton, Charlesworth, Ivey et al., 2010).

The benefits of physical activity on physical well-being have been well-established by research [*e.g.* (Rooney, 1993)] and are promoted by governments and voluntary agencies working with older people. A recent research briefing paper from CARDI entitled '*Physical Activity and Mental Health in Ageing*' highlighted significant links between maintaining recommended levels of physical activity and the positive effects on mental health and brain functioning among older people. The key findings of the report were as follows:

1. Higher levels of physical activity may alleviate stress levels and improve memory (Kempermann et al., 2010).
2. Barriers to older age groups participating in physical activity include self-perception that they are not capable, safety concerns and lack of access to activities specifically designed for older people (NI Assembly, 2010).

3. People over 50 years of age who are engaged in moderate to high levels of physical activity have a 50-56% reduction in the odds of having depressive symptoms (Morgan et al., 2011).
4. Engaging in regular physical activity reduces the risk of cardiovascular disease, preserves functional ability and benefits psychological health in older people. However, people who have physical, psychological or mental health disorders are the group most likely to report inactivity (TILDA, 2011).
5. Physical activity has the potential to promote brain plasticity in older people, which is relevant to the development of treatments for degenerative brain diseases such as Alzheimer's and helping with recovery from strokes (Carson et al.,, 2010).
6. Older people are one of the groups with low levels of physical activity, yet can also benefit most from that activity. Policy initiatives should not only encourage innovative ways of healthy and active living for all older people but also address the barriers.

The findings of the current study concur with the briefing paper in terms of physical and mental health maintenance and the low rates of sedentary activity among volunteers sampled. Providing more access to volunteering experiences may therefore be one way of addressing the barriers issue by providing more age appropriate forms of activity.

6.0 Conclusions and Policy implications

Policy Implications

6.01 Individuals

Retirement can be an exciting time which opens up space to do new things. However, it is also apparent that many people find the transition difficult and can impact negatively on health and well being, especially for those who are unable to fill gaps left after leaving employment i.e. filling their day. Preparation for retirement should be something that is flagged up to pre-retirees by all those professionals that they come into contact with during this period- employers, civil servants, health professionals and family and friends etc.

A recent discussion paper commissioned by the Institute for Economic Affairs (Sahlgren, 2013) has pointed out that there has been little if any research examining the relationship between the number of years spent in retirement and health. Sahlgren argues that it is possible that health will initially improve when somebody retires and then, after a while, start to deteriorate due to reduced physical activity and social interaction. This research based in the UK states that:

> *"…being retired decreases physical, mental and self-assessed health. The adverse effects increase as the number of years spent in retirement increases… and retirement increases the probability of suffering from clinical depression by about 40 per cent and increases the probability of having at least one diagnosed physical condition by about 60 per cent."*

6.02 Government

This research report adds to the existing body of research that highlights the health benefits of volunteering and the strategic value of volunteering as an 'active ageing' activity which leads to better and more sustained health and well being into older age. This evidence base deserves cross government support, including supporting

work to address barriers to volunteering, especially to those under-represented groups.

Health Professionals are often the first point of contact for older people who are at risk of social isolation or depression. It would be useful to develop a set of guidelines to help professionals to identify those people who could benefit from volunteering and signpost them to a group or individual that can help them to find a suitable volunteering opportunity.

As part of the wider body of work to address health inequalities, support to improve diversity in volunteering would be welcomed across local and central government. The Volunteering Strategy for NI openly calls upon the support of all government departments to support its delivery (Department for Social Development, 2011).

Encourage local government to introduce rates of volunteering as an indicator of how well local authorities are performing in promoting active ageing. This is a recommendation already supported by policy shapers across Europe (Volonteurope, 2012).

6.03 Organisations

Good practice and support systems for volunteers are a key consideration in an older person's decision to start, remain or re-enter an organisation as a volunteer. The Volunteering Infrastructure has a role in promoting evidence based good practice including the link between satisfaction levels and experience of policy and practices for supporting volunteers. Previous research carried out in NI has lead to good practice guides for attracting, involving and retaining older people as volunteers (Volunteer Now, 2011b).

Weekly income was dropped from the analysis because of missing responses for approximately 30% of cases. Receipt of pension credits was used as a proxy indicator of income for those over 65 and results did show that those in receipt of

pension credits reported significantly poorer physical health. than those not in receipt of pension credits. Pension credit can be regarded as a proxy for socioeconomic status with age included in the model as a control, (see table 5.3, model 2). In addition, volunteers reporting having some form of disability reported significantly lower health scores at baseline. The health differential was more pronounced by pension credit status
(b= -4.50, p=.019) than by disability (b= -1.70, < .001). This showed that the co-occurrence in time of improvements in physical and psychological health was more evident among male volunteers. In the same way, the association between physical improvement and mental health improvement over time was also stronger for those in receipt of pension credits.

Despite significant percentages declaring suffering from specific health conditions, being in pain, yet remaining physically active, these comparisons suggests that the volunteers' psychological health is on a par with healthy adults in other cultural contexts and that their attitudes generally reflect strong levels of stoicism and positivity. The maintenance of mental health scores over the period of study could be explained by findings in the literature relating how volunteering can help older people maintain a sense of purpose and self-esteem. Paylor (2011) points to a number of factors revealed in his review recent research studies which can help explain the psychological benefits of volunteering, namely 'perceptions of self' and 'social integration'. Perceptions of self' refers to how volunteering can shape the way that people think about themselves by helping people find a sense of purpose thereby increasing self-confidence. In the same way, 'social integration' refers to how volunteering connects people with other people and provides the building blocks of social capital" (Paylor, 2011, p27). For older people, the maintenance of health and the prevention of decline associated with retirement may be highly valued. The stability in mental health scores therefore should be interpreted in a favourable light.
The Volunteer sample was more closely aligned with the Norwegian sample in terms of psychosocial growth and physical change, but psychological loss scores were comparable to the higher scores given by the Canadian sample. These differences combined with the finding that psychosocial growth was the only attitude set to improve over the time period (albeit in a small way) suggest that formal volunteering

may have more of a positive effect on growth attitudes but that feelings of loss due to ageing remain consistently higher. Despite the slight improvement over time in growth scores, the attitude sets displayed by older volunteers remain stable over the time period.

Results showed that both male and female volunteers exhibited lower overall risk psychological disturbance compared to Northern Ireland population estimates within all three valid age bands. The risk for volunteers was also lower than estimates of the population in Scotland and England. The one exception to this was the risk for females in the 75^{+} category whose risk was 5 cases in 22 (23%) compared to 14% for Northern Ireland and 17 % for Scotland. Given the low numbers in this category it is difficult to assess whether mental health issues are a significant risk for the female 75^{+} age group.

The timeframe covered by this study can be viewed both in terms of the partial effects on health of formal volunteering experiences, as well as the effects of ageing over an 18 month period. That said, the evidence presented here is that volunteering experiences are associated with realistic improvements in health (i.e. where improvements are possible), and can be instrumental in moderating the natural effects of ageing by supporting health maintenance and reducing rates of declines.

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