Age UK's *fit for the future* *'Social Prescribing' extension* ***project***

Evaluation report

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Executive Summary

- The ***fit for the future*** 'social prescribing' extension project evaluation was interested in the potential impact on the outcomes of older people that are referred to the project by health care professionals. It focuses on additional survey data collected by three of the 11 local Age UK Partners which took part in the programme: Nottingham and Nottinghamshire; Newcastle; and West Cumbria. Each area received additional funding to deliver ***fit for the future*** activities for newly recruited older people, specifically enlisted through health care professionals.
- Whilst research on 'social prescribing', both its use and efficacy, are still in early stages, findings here indicate it has the potential to make more effective use of health care resources and support medical interventions aimed at improving the health and well-being of patients.
- The methods used to inform this evaluation include analysis of a longitudinal paper based, 2 phase survey (completed at baseline and three month timepoints), as well as qualitative interviews with two health care professionals (based in Nottingham and Nottinghamshire, and Newcastle).
- Both the health care professionals interviewed viewed 'social prescribing' as playing an important role in reducing capacity, increasing independence, and contributing towards preventative care in the longer term. The main challenges were perceived to be the ability to demonstrate its effectiveness and ensuring long term funding is provided to help embed services in local communities.
- The main characteristics of survey respondents broadly mirrored those who took part in the main ***fit for the future*** survey.
- It was found, overall, that less variables reached statistical significance in the extension study than was observed in the original surveys across the equivalent timepoints. However, significant positive change was identified for: satisfaction with life; attitude toward physical activity; and exercises that make respondents breathe harder.
- West Cumbria showed a statistically significant change in life satisfaction and the likelihood of eating a cooked meal prepared from basic ingredients in the extension study, which was not observed in the original survey. On the other hand, a significant result was obtained for reduced likelihood of falls in the original survey, but not the extension study.
- For Newcastle, respondents showed a decline around healthy eating, yet a statistically significant increase in hard breathing activities in the extension (no significance was observed in the original study).
- Regarding Nottingham and Nottinghamshire, a significant change between timepoints 1-2 was not observed in the original or extension survey.
- We would suggest that one of the most important element of social prescribing, is its ability to provide an additional route for older people (who may be in most need of the specific support) to become aware of, and be encouraged to take part in, projects such

as ***fit for the future***, alongside the potential resource savings to the health and social care sectors. However, more research is needed in this area.

Introduction and background

This report, undertaken by **CIRCLE, University of Leeds** provides an additional evaluation based on Age UK's ***fit for the future*** programme, which was part of the Big Lottery Funded ***'*fit as a *fiddle portfolio 2013-2015'***.

The ***fit for the future*** programme is a person-centred programme with the overall objective of supporting the physical health and mental well-being of older people living with at least one long-term health condition, with a primary focus on those with declining health and/or mental well-being. The ***fit for the future*** programme was delivered in 11 local Age UK areas and the evaluation included a three phase survey of participants, completed at three timepoints (at the start of their involvement in the programme; three months; and nine months after the start of the intervention).

Three of the 11 local Age UK areas (Nottingham and Nottinghamshire - Nottinghamshire hereafter; Newcastle; and West Cumbria) were additionally funded to deliver ***fit for the future*** activities for (a minimum of 200) newly recruited older people. These additional participants were enlisted specifically through health care professionals (HCPs), representing a form of social prescribing (see below for an explanation). This can be contrasted to the main ***fit for the future*** programme which involved referrals from HCPs but also from other sources such as referrals from voluntary or other statutory organisations, as well as self-referral.

The evaluation of this additional ***fit for the future*** activity in Nottinghamshire, Newcastle and West Cumbria involved an additional two phase survey completed by participants based in each of the three local Age UK areas, and interviews with two health care professionals. The survey was completed at two timepoints, at the start of the participant's involvement and then three months later. In terms of timeframe this corresponds to timepoints one and two of the main ***fit for the future*** survey[1] (Wigfield et al, 2015).

The main aim of the evaluation of these additional activities was to assess the extent to which the benefits gained by the older people participating in the programme were determined by the referral route, and to explore the potential impact of social prescribing.

In the following section, some background information to related research around social prescribing is considered, this is followed by: an overview of the research methods; interviews with two healthcare professionals; the profile of survey respondents; a discussion of the impact on participants; and finally a conclusion drawing together the findings.

[1]Hereafter the survey analysed for the main ***fit for the future*** survey will be referred to as the 'original' survey, and the findings discussed in this report are referred to as the 'extension' survey, to help avoid confusion.

Background to 'social prescribing'

This report is interested in understanding the potential value of 'social prescribing', in light of an increasing recognition that the 'social' as well as the 'medical' aspects of long term conditions, need to be tackled (Nesta, 2013:6). For the purposes of this report, social prescribing is defined as:

> *"a means of enabling primary care services to refer patients with social, emotional or practical needs to a range of local, non-clinical services, often provided by the voluntary and community sector"* (Age UK, 2011:4)

These measures are viewed as complementary to medical services, enabling a more 'holistic' approach to managing the health and well-being of the population (Dayson and Bashir, 2014). The main assessed benefits of social prescribing have been described as:

- *"Better social and clinical outcomes for people with long-term conditions (LTCs) and their carers.*
- *More cost-efficient and effective use of NHS and social care resources.*
- *A wider, more diverse and responsive provider base."*
  (Dayson and Bashir, 2014:i).

Research has also indicated that adopting a social prescribing model can improve community cohesion, mental well-being, and help to reduce social exclusion (Age UK, 2011:4). Further, a recent study found that nine out of ten GPs felt that their patients would benefit from social prescribing (Nesta, 2013). In 2011 Age UK completed a small pilot, working with 12 General Practices and six local Age UKs across the Yorkshire and Humber area, which included referrals to the previous **fit as a fiddle** portfolio of activities. Qualitative findings showed improvements in local community linkage and to the emotional well-being of older beneficiaries, alongside enabling clinicians to make more effective use of their time (Age UK, 2011).

However, despite these recorded benefits social prescribing has not yet experienced widespread coverage. For example in the Nesta study referred to above, despite 90% of GPs recognising the benefits of social prescribing, less than 20% actually offered this (Nesta, 2013). Further, whilst the number of localities experimenting with social prescribing trials has been increasing, these have generally been small scale, and effectiveness or cost benefit have not been conclusively demonstrated (Centre for Reviews and Dissemination, 2015; Williams, 2015).

The Rotherham Social Prescribing Project, an evaluation of which was undertaken by the Centre for Regional Economic and Social Research, represents the first large scale trial of

social prescribing of its kind (a total of 1,607 beneficiaries). The evaluation of the Rotherham Social Prescribing Project found that health care costs had been reduced by around a fifth, and that patients who had been referred reported improvements in well-being, thus illustrating the potential cost benefit and effectiveness of social prescribing (Dayson and Bashir, 2014). However, despite these promising findings some issues have been identified, such as the risk of bias due to patients not being randomly selected; and importantly it also lacked a control group. It was also felt that detecting significant changes was adversely affected by the short timeframe before follow up (at six and 12 months) (Centre for Reviews and Dissemination, 2015).

In summary, whilst social prescribing, both its use and efficacy, are still in early stages, findings indicate its potential contribution to make more effective use of health care resources and support medical interventions in increasing the health and well-being of patients.

Overview of research methods

A longitudinal paper-based survey of older people

A two phase survey of older people referred to local Age UKs by HCPs was designed by Age UK, based on the original ***fit for the future*** survey (Wigfield et al, 2015). Views were recorded at two specific time points: at the start of their involvement; and three months later. Each of the three local Age UK partners aimed to reach a target of at least 100 older people completing each of the two surveys. As can be seen in Table 1, these numbers were initially met, but dropped to less than 100 for the second survey.

In total the research team received a total of 305 completed questionnaires for all three areas in a format which was suitable for entry into the statistical software[2].However; analysis was restricted to those who completed the surveys at both timepoints, reducing the number to 247. The data were subsequently entered into statistical software, (IBM SPSS Statistics 22), checked, cleaned and then analysed. Data from Survey 1 were used to outline the profile of participants.

All the variables were run using a sign test, this examines whether two related samples are different, the differences between the groups are calculated, and the direction of change is measured. The statistical summary tables presented in this report include: frequency (with or without the corresponding percentage); the median (with the associated interquartile range); and the statistical significance level. The median is the value that divides the sample in two – with half of the values being smaller and half larger than the median value. The interquartile range is the corresponding measure of scatter: it represents the 'middle' 50 per cent of the values in the sample. It is important to note that the median does not always provide an effective indicator of the magnitude of change. That is, even if a significant positive change has occurred, the median score may remain the same[3].

Qualitative interviews with healthcare professionals

Two telephone interviews with HCPs who had been involved in the referral process were carried out in both Newcastle and West Cumbria (the research team were unable to secure an interview with an equivalent professional in Nottinghamshire). The aim of these interviews was to capture information about: their expectations and actual experiences of working with local Age UKs; suggestions for improvement; lessons learned for themselves and for their organisation; and their assessment of whether the referral process could be sustained. Each interview lasted approximately 30 minutes and was conducted by telephone following a semi-structured interview schedule. The interviews were transcribed and

[2]The survey data were supplied by local Age UK partners in the form of completed paper surveys.

[3] Sign tests have been applied due to the 'non parametric' nature of the data: accordingly the median' measure of central tendency is reported, as the mean score is heavily influenced by outlying or 'skewed' score distributions.

analysed manually to assess the main points and some key quotes are presented in the report to illustrate findings and to add specific detail to the discussion. It is important to note that the sample of participants and stakeholders identified for interviews may not necessarily reflect the views of all participants and stakeholders involved with the local Age UKs in each respective area.

Working with health care professionals

This section provides a short overview of the telephone interviews carried out with two HCPs whose General Practices are involved in referring patients to the ***fit for the future*** programme: a GP based in Newcastle; and a Community Rehabilitation team leader in West Cumbria. The discussion that follows should be viewed as providing an illustration of how HCP's based in two of the three areas have worked with Age UK, and to consider the main benefits and challenges.

Both interviewees confirmed that their respective organisation's had got involved with Age UK to improve community links, reduce capacity, and for the benefit of the older person. Whilst both HCP's reported initially completing 'paperwork', the arrangement to refer patients was 'informal', and neither organisation kept records.

The main benefit of referring older people to ***fit for the future*** was perceived, by the HCPs, to be the provision of preventative support. This was particularly so for the Rehabilitation Service, whose team leader believed that referring patients at an early stage risk of falls to an Age UK falls group could help delay the onset of the older person developing more complex needs, thus reducing demand for medical services:

> *It helps us out [referring to Age UK West Cumbria], otherwise those patients are more likely to get deconditioned and not get out as much and have health problems which impacts on the rehab service, it is like a preventative service, really (HCP West Cumbria)*

Alongside health benefits, both HCP's also referred to 'softer' outcomes, such as the role of ***fit for the future*** in preventing loneliness and social isolation:

> *You are talking to somebody and they talk about being lonely, isolated, not having the confidence to go out, or being bored and unfulfilled and you become aware that they need structure in their life or social stimulation* (HCP, Newcastle).

For example, the Community rehabilitation team started working with the local Age UK to refer to a falls group, but also signpost those assessed as potentially benefiting from the 'social element' of what Age UK had to offer. Alongside this, referrals were assessed as potentially reducing the dependence levels of older patients:

> *[The] social prescribing project was a good way to improve people's coping strategies, to help them cope with their health issues with a more independent manner rather than going to the GP all the time* (HCP, Newcastle).

Both HCPs viewed health and social care as interlinked, believing that if Third Sector organisations which provide for the latter are not adequately funded, this will have a

detrimental impact on health provision, mainly due to capacity, as more patients will inevitably end up requiring health services:

> *There is need for social – psychological type of services – health is as much to do with social and environmental factors as with medication and things like that. So I think this type of pilot is very much part of primary care (HCP Newcastle).*

> *If social [care] can't provide, then health [care] will feel the impact heavily, if Third Sector not being funded, will have effect on health (HCP, West Cumbria).*

In terms of the wider health and social care system, both HCP interviewees suggested that joined up working with Third Sector organisations such as Age UK saved resources by freeing up capacity, and it also enables clinicians and GPs to have more time to work with patients who have complex needs (as touched upon above). But it was conceded by both interviewees that positive change in terms of preventative services are hard to measure:

> *We need larger number of participants to see if there are savings. Also with older people there is a lot of unpredictability – there is a lot of variation from year to year – so many variables going on, unpredictable things – it's not a nice easy model to say that someone deteriorates at this rate therefore you need this type of intervention*(HCP Newcastle)*.*

It was also pointed out that whilst joined up partnership working is seen as a political priority, sufficient funding is not always available to match the political will, and that effective partnerships are adversely affected by the short term nature of funding:

> *Its harder to get people to invest time in it to develop it as they're always thinking 'is it just going to stop in nine months', we have spent all this time and it is stopping anyway, so people may not invest time in it, as viewed as one of those things that will 'stop again'*(HCP, West Cumbria)

In summary, both HCPs viewed 'social prescribing' as playing an important role in reducing capacity, increasing independence, and contributing toward preventative care in the longer term. However, the main challenges are demonstrating its effectiveness and ensuring long term funding is provided to help embed services in local communities.

The Survey Respondents

This section now considers the main characteristics of the respondents to the survey. A total of 305 older people completed Survey 1,and 247 completed both Survey 1 and 2. As can be seen from Table 1, the proportion of respondents are drawn fairly equally between the three participating local Age UKs. The number of responses for each survey question varies due to 'missing values', where participants have not provided an answer.

Table 1: Number of respondents (percentage)

	Survey One	**Survey Two**
Newcastle	103 (33.8)	80 (32.4)
Nottinghamshire	100 (32.8)	78 (31.5)
West Cumbria	102 (33.4)	89 (36)
Total	**305**	**247**

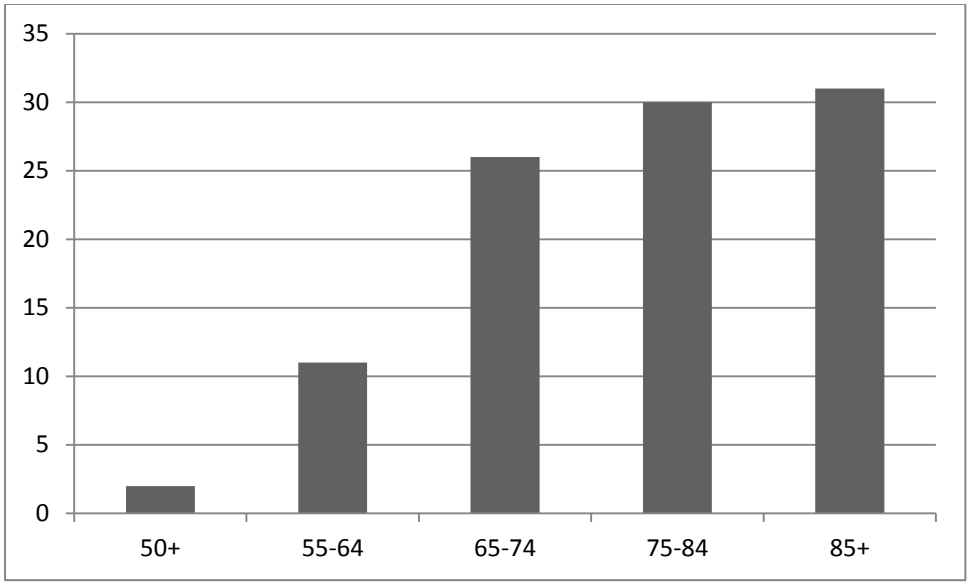
Age and gender of participants

Table 2 provides information relating to the gender of the older people who responded to this question. Just under two thirds were women; this leaning toward female respondents reflected participation in the ***fit for the future*** programme overall and in fact, the proportion of women was even higher for the original survey respondents, at 74.7%. All three areas had more female respondents, with the proportions only differing slightly in each; In West Cumbria 67% were women, in Newcastle 64% were women, and in Nottinghamshire 60.5% were women. The majority of respondents (88%) were over the age of 65, with nearly a third (31%) being over 85. A detailed breakdown of age, by percentage, can be found in Figure 1.

Table 2: Participants by gender (percentage)

Gender	**Total number (percentage)**
Male	86 (6.7%)
Female	186 (63.3%)
Total	**272**

Figure 1: Age breakdown of participants (percentage)



Disability and Long term health conditions

Long term conditions

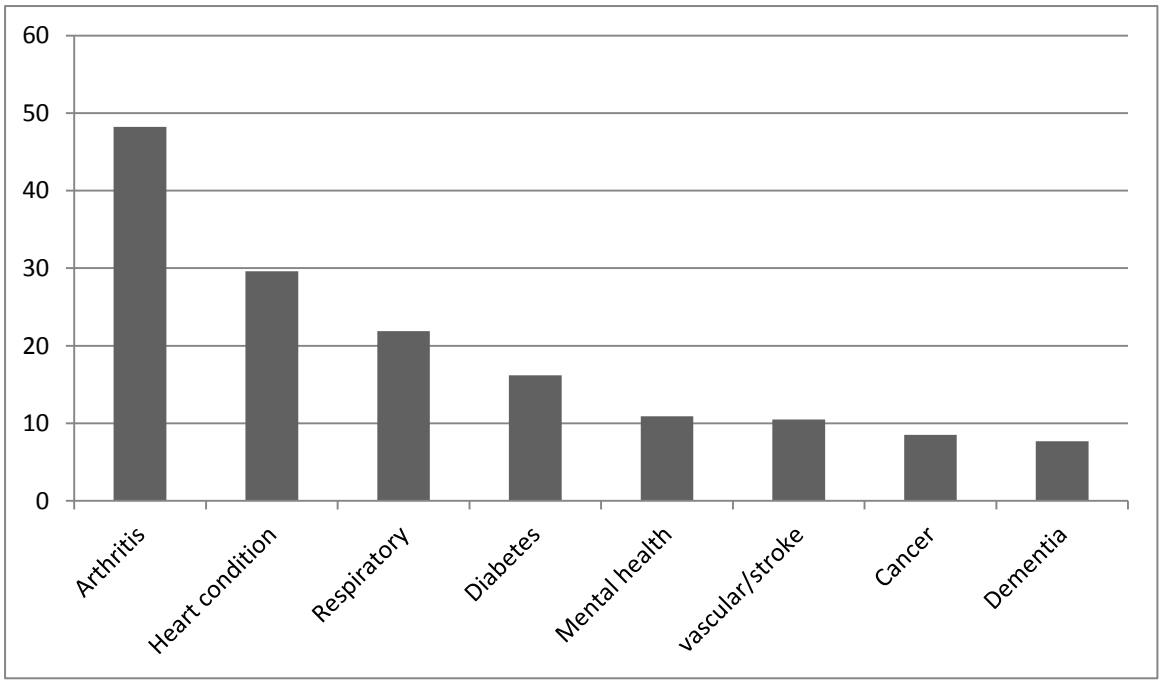
Just over 90% of respondents have a long term health condition, with just over a third (31.7%) reporting three or more, which broadly follows the numbers identified in the original surveys (see Table 3).

Table 3: Number of long term health conditions

Number	Frequency	Percent
none	30	9.8
1	106	34.8
2	72	23.6
3	68	22.3
4	23	7.5
5	4	1.3
6	1	0.3
7	1	0.3
Total	**305**	**100.0**

The most common LTC was arthritis, reported by nearly half of the sample (48.2%), with heart conditions being reported by just under a third (29.6%) (Figure 2 provides a percentage breakdown of each).

Figure 2: Types of long term condition (percentage)*

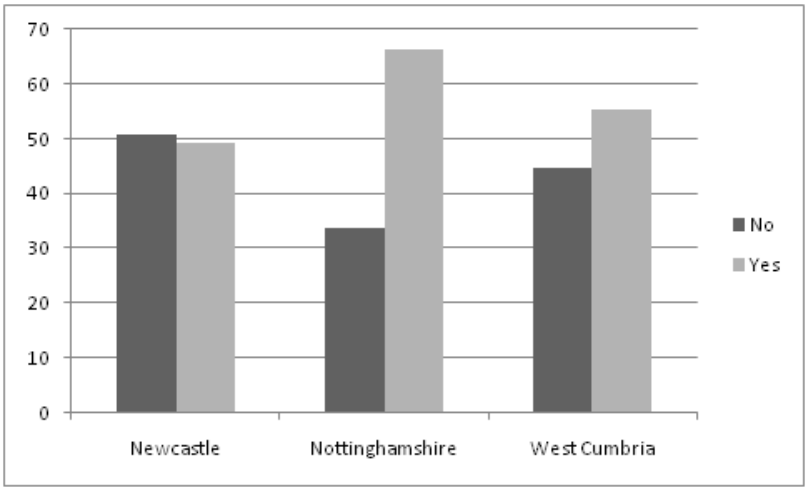


*Percentages equal more than 100, as some respondents reported more than one LTC.

Disability

Overall, 57% of respondents described themselves as having a disability, whereas 43% did not (the corresponding number for the original ***fit for the future*** survey respondents was similar, with 59% reporting a disability). However, there was variability between the three areas in relation to disability. As can be seen in Figure 3, the proportion of older people reporting that they considered themselves to be disabled was 55.3% in West Cumbria, compared to 49% in Newcastle (the proportion was far higher in the original survey, at 80%). In Nottinghamshire the comparable proportion of people reporting a disability was much higher at over two thirds (66%) (compared to 46.2% in the original survey).

Figure 3: Percentage of respondents who reported a disability (n=275)



The types of disabilities reported are listed in Table 4. Of those who reported a disability, in comparison to the ***fit for the future*** survey participants, the extension respondents were slightly more likely to report a physical disability and less likely to have a chronic illness, but overall, the differences were slight.

Table 4: Respondents with different types of disability (percentage of total sample)[4]

Disability	Percentage
Physical disability	76.1 (40.6)
Chronic illness	20.2 (10.8)
Deafness / serious hearing impairment	12.3 (6.5)
Blindness / serious visual impairment	13.5 (7.2)
Serious mental health condition	12.9 (6.9)
Other disability	9.2 (4.9)
Substantial learning difficulty	0.6 (0.3)
Substantial learning disability	0

Living arrangements and caring responsibilities

Respondents were asked whether they lived alone or with one or more other person. Over half (55.8%), lived alone (Table 5). The original ***fit for the future*** report (Wigfield et al, 2015) observed a difference between the living arrangements of male and female respondents, showing that a larger proportion of female respondents lived alone, consistent with national trends (ONS, 2014). The extension survey found a similar pattern, with 44.7% of men and 64.5% of women reporting that they lived alone, which is in fact starker than the original survey, as the same number of women lived alone (64.5 %), compared to 54% of men.

Table 5: Living arrangements

	Frequency	Percent
Live alone	168	55.8
Live with someone	133	44.2
Total	301	100

In total 16.4% of respondents were carers (slightly higher than the proportion reported by the original survey respondents, at 13.8%). Of these, a similar proportion of men and women had caring responsibilities (16.5 and 16.8% respectively), as was the case in the original survey (at 12.8 and 13.9% respectively).

[4]The percentages in Table 3.5 do not total 100%, as many respondents have more than one type of disability.

Impact on older people

The data analysed compares the changes reported between survey one and survey two, with the total number of respondents who completed both surveys being 247, as previously stated. The effect that gender[5], age and caring responsibilities have on the variables where a change was identified are also considered and discussed, where appropriate. The data is considered in comparison to timepoints one and two of the original survey, which was also completed at the start, and three months after involvement in ***fit for the future*****.**

The differences between the findings in this survey are compared to the main ***fit for the future*** survey, but it needs to be borne in mind that we are unable to provide direct comparisons to the original ***fit for the future*** survey. This is because we do not know the specific referral routes of the original sample, and therefore cannot manipulate the data to exclude those referred by HCPs. That is, we are aware that some of the participants in the original ***fit for the future*** survey were referred by HCPs, so we are unable to provide any comparison. So whilst the results across the 'original' and 'extension' surveys are compared and contrasted (both the overall findings and those based in the three individual areas), direct comparison was not possible.

Differences on the basis of ethnicity, religion or sexuality are not considered due to the limited variation in the data. For example the overwhelming number of respondents (97.5%) identified themselves as White British and all as heterosexual; for religious belief 98% either identified themselves as Christian (75%), or of following no religion (23%); Tables with information for each of these characteristics can be found in Appendix 1. Table 6 provides the percentage of positive change for the key variables assessed.

[5]It needs to be borne in mind that men constituted just over one third of the overall sample, and therefore the number of women is greater.

Table 6: Older people with a positive outcome observed

Outcome	Verification Method	% of older people with positive outcome Survey 1 - 2	Sample Size
Older people feel more positive about themselves.	7-item Warwick-Edinburgh Mental Well-being Scale	39,2	199
Older people feel less lonely.	Loneliness Survey Question	17.5	229
Older people feel less isolated.	Isolation Survey Question	14.8	229
Older people are satisfied with their life	Life Satisfaction Score	36.9	233
Older people have increased the number of minutes of physical activity they do per week as per the Department of Health physical activity guidelines.	Walking Survey Question	35	216
	Hard breathing Survey Question	34.7	216
	Muscle Strengthening Activity Survey Question	28	211
Older people have an improved body mass index (BMI).	BMI Survey Question	30.4	148
Older people have an improved waist circumference.	Waist Circumference Survey Question	15,7	83
Older people have reduced their average alcohol consumption per week.	Alcohol Consumption per week Survey Questions	32	50
Older people have reduced the number of cigarettes they smoke per day.	Cigarette Consumption per day Survey Questions	41.7	24
Older people have increased their daily consumption of fruit and vegetables.	Fruit & veg intake per day Survey Questions	31.7	234
Older people feel more supported to manage their LTCs.	Feel supported to manage LTC Survey Question	18.2	214
Older people feel more in control of their own care as relevant to their specific LTCs.	Feel in control of managing LTC Survey Question	14.9	215

*Denotes a statistically significant change at the 1% level of significance

Summary of main observed changes in original survey

Before discussing and comparing the original survey with the extension survey results, it may be helpful to recap on the main positive changes that were observed between timepoints 1-2 in the original survey. The following variables showed a statistically significant, positive change overall: WEMWBS; satisfaction with life; feeling isolated; attitude to healthy eating; fruit and vegetables eaten; attitude to physical activity; minutes walking and hard breathing activities. When isolated by individual area there were no statistically significant positive changes observed in Newcastle or Nottinghamshire between timepoints 1-2; West Cumbria showed a statistically significant positive change for the likelihood of falls. It should be noted that positive changes were more likely to be observed between timepoints 1-3 for the three areas in the original survey, suggesting that some variables may need longer to produce a measureable positive outcome. However, it is important to note that we have no information relating to the duration of the ***fit for the future*** activities that survey respondents participated in or even whether those who completed the survey at the nine month timepoint were still involved in the programme[6].

The results of the extension survey are now considered, focusing on the main variables in turn, namely: mental well-being; social networks; healthy eating; physical activity; weight loss; smoking and alcohol consumption; and impact on LTCs.

Impact on mental well-being

The original ***fit for the future*** survey found a positive mental well-being outcome, with the 7-item Warwick-Edinburgh Mental Well-being Scale (WEMWBS) showing that older people felt more positive about themselves at the end of the intervention than at the start, with the main impact appearing to take place in the first few months. Whilst there was a slight increase in the WEMWBS score in the extension survey, this did not reach statistical significance (Table 7).

Table 7: 7-item Warwick-Edinburgh Mental Well-being Scale - median (interquartile range)

Survey One	Survey Two	*n* value	*Statistically significant change**
26 (7)	27 (8)	199	No

*Sign test, z = -917, p. = .359.

With specific regard to the three areas covered in the extension project, a statistically significant positive change in WEMWBS score was not observed for any area, in either the original or extension survey.

[6]It should also be borne in mind that we are unable to report with certainty that the changes observed in either the original or extension survey are due to participation in ***fit for the future***, as they may have been influenced by other, non-related events.

Satisfaction with life

Respondents were asked to provide a rating of their overall satisfaction with life, and as with the original ***fit for the future*** survey, older people were statistically more satisfied with life (see Table 8, below). In the original ***fit for the future*** survey, a great deal of variation was identified, with the 'actual' average life satisfaction scores differing widely between the three areas, with Newcastle producing a median of 5 at the start and 6 at timepoint 2, Nottinghamshire scoring 8 at all timepoints, and West Cumbria with an initial median of 7, rising to 8 by timepoint 2 (none of the three areas involved in the extension study produced a significant result). As can be seen in Table 8, satisfaction with life baseline scores for each area in the extension survey are broadly similar to the original (aside from Newcastle's baseline score being slightly higher, at 6). However, unlike the original report, Newcastle and Nottinghamshire's median scores remained the same across the two timepoints; West Cumbria, on the other hand, showed a significant increase in life satisfaction.

Table 8: Satisfaction with life scale, by area – median (interquartile range)

Area	Survey One	Survey Two	*n* value	*Statistically significant change**
Overall	7 (3)	8 (3)	233	Yes
Newcastle	6 (3)	6 (3)	71	No
Nottinghamshire	8 (4)	8 (4)	75	No
West Cumbria	7 (3)	8 (3)	77	Yes

* sign tests, sign tests, overall (z = -2.714, p. = .007), Newcastle (z = 0, p. 1), Nottinghamshire (z = -1.193, p. = .233), West Cumbria (z = -3.467, p. = .001)

Satisfaction with life scores were broken down to assess its effect on particular sub groups of respondents. It was found that whilst there was an improvement overall on the satisfaction with life scale, for respondents with caring responsibilities, the observed effect varied (Table 9), with the increase in life satisfaction being more pronounced for those without a caring responsibility. Whilst the number who reported themselves to be carers was low (n = 39), this may be worth exploring further.

Table 9: Satisfaction with life scale - median (interquartile range)

Variable		Survey One	Survey Two	*n* value	*Statistically significant change**
Caring responsibilities	No	7 (3)	8 (4)	190	Yes
	Yes	7 (4)	8 (2)	39	No

* Carers (p. = .523, no z score as bimodal distribution), non carers (z = -3.357, p. = 0.01).

Social networks: isolation and loneliness

In the original survey, of the questions which focused on participants' social connectedness, only the 'feeling isolated' variable reached statistical significance overall. However, none of

the four variables relating to social networks produced a significant result for the extension survey (Table 10).

Table 10: Change in the value of indicators measuring loneliness and isolation - median (interquartile range)

Variable	Survey One	Survey Two	*n* value	*Statistically significant change**
Lack of companionship	2 (1)	1 (1)	233	No
Feeling isolated	1 (1)	1 (1)	233	No
Feeling left out	1 (1)	1 (1)	226	No
Feeling in tune with others around you	2 (1)	2 (1)	225	No

*sign tests, lack of companionship (z = -2.159, p. = .031), feeling isolated (z = -.504, p. - .614), feeling left out (z = 0, p. = 1), feeling in tune with others around you (z = -.110, p. = .912)

Focussing on the geographical areas where the programme was delivered, the original survey found that older people felt they lacked companionship less often than the average at the start of ***fit for the future,*** in both Nottinghamshire and West-Cumbria. A statistically significant result was found in Newcastle, but only between timepoints 1 and 3, and not 1-2. A separate test was run on each area involved in the extension, and no statistical significance was found.

In the original survey the four measures of social connectedness were applied to assess if there were any differences based on gender. For women, it was found that there were positive changes overall in companionship, feeling left out, and feeling in tune, but that these were not statistically significant. However, a statistically significant result was obtained for women being less isolated between the first and second (and between 1-3) timepoints, whereas no significant change was observed for men. With regard to the extension survey, whilst neither reached statistical significance, women were more likely than men to report that they lacked companionship, some of the time or often (the median overall score for women was 2 (1), compared to a median score of 1 (1) for men, at both the start and at the end points of the extension survey.

Impact on healthy eating: attitudes and behaviour

We looked at the impact on older people's attitudes and behaviour in relation to healthy eating, assessing whether there was a change towards a more positive attitude[7]. Whilst a

[7]Respondents were asked to choose one of the following three options: *'I don't think healthy eating is important for my health'*, *'I think healthy eating is important for my health, but I am not doing anything about*

statistically significant change overall was identified in the original survey regarding attitudes to healthy eating; this was not found in the extension (see Table 11). However, when the data is broken down by area, no difference between the two surveys is observed. That is, Newcastle, Nottinghamshire or West Cumbria did not produce a significant result either in the original between timepoints 1-2, or the extension surveys.

Table 11: Changes in attitudes to healthy eating - median (interquartile range)

Survey One	Survey Two	*n* value	*Statistically significant change**
3 (0)	3 (0)	245	No

*sign test, z = -1.393, p. =.164.

The eating behaviour of participants was further explored by asking them how many portions of fruit and vegetables they ate on an average day and how often they ate a meal prepared and cooked from basic ingredients. There was a statistically significant increase in the average number of portions of fruit and vegetables older people reported eating per day in the original survey, which was not found in the extension survey. However, when broken down by area, the outcomes between the three areas are actually similar, with West Cumbria showing a positive change both in the original survey (though between timepoints 1-3 only), and in the extension (see Table 12)[8].

One of the main differences observed for this variable is in Newcastle; though it did not reach statistical significance in the original survey, portions of fruit and vegetables slightly increased. However, in the extension, a statistically significant 'decrease' was found, meaning that consumption of fruit and vegetables actually reduced across the two timepoints; these findings are presented in Table 12.

Table 12: Number of portions of fruit and vegetables eaten per day – median (interquartile range)

Portions of fruit and vegetables	Survey One	Survey Two	*n* value	*Statistically significant change**
Overall	3 (2)	3 (2)	234	No.
Newcastle	3 (1.75)	3 (1)	74	Yes (negative change)
Nottinghamshire	3 (3)	3 (3)	74	No
West Cumbria	3 (2)	3 (2)	86	Yes

*Sign tests, Newcastle (z = -2.801, p. = .005), Nottinghamshire (z = -.596, p. = .551), West Cumbria (z = -2.742, p. = .006)

it at the moment' and *'I think healthy eating is important for my health, and I am doing something about it at the moment*'.

[8] Whilst a significant change was observed in Nottinghamshire in the original surveys, this was only between timepoints 2-3, and as these relate to later timepoints, are not directly comparable to the extension.

A significant rise in the proportion of those eating 'five or more' portions of fruit and vegetables a day was found in the original ***fit for the future*** surveys, but this was not the case for the extension, which, in fact, witnessed a slight *decline* in the number of portions eaten per day (see Table 13). When each area was considered separately, it was found that respondents based in Nottinghamshire and West Cumbria who ate over five portions showed a slight, though not statistically significant, increase, but that Newcastle showed quite a dramatic drop, from a median score of 5 at the start, to 3 portions at the second timepoint (this information is shown in Table 13). As can be seen, the overall numbers are small, with only 17 respondents in Newcastle reporting that they ate five or more portions of fruit and vegetables in a typical day, so these findings should be treated with caution.

Table 13: Respondents reporting eating five or more portions of fruit and vegetables a day –median (interquartile range)

	Survey One	**Survey Two**	***n* value**	***Statistically significant change****
Overall	5 (0)	5 (2)	66	No
Newcastle	5 (0)	3 (1)	17	Yes (negative)**
Nottinghamshire	5 (0.5)	5 (1)	29	No
West Cumbria	5 (2)	5.5 (1)	20	No

*sign tests, Overall (z = -1.357, p. = .175), Newcastle (p. = .001), Nottinghamshire (p. = 1), West Cumbria (p. = .508)

**as each area produced a binomial distribution, z scores have not been recorded.

Cooked meals

Participants' behaviour relating to healthy eating was explored in the surveys by asking them how often they ate a meal prepared and cooked from basic ingredients. Both the original and extension survey's did not find a statistically significant change in the proportion of participants who were more likely to eat a cooked meal made from basic ingredients at the end of the programme than at the start of the intervention. Though, as shown in Table 14, there was a slight rise in the likelihood of respondents preparing a meal 4-6 times a week and every day.

As with portions of fruit and vegetables eaten, Newcastle showed a negative change, where the number of cooked meals eaten was less than at baseline; this decline was not observed in the original survey. Similarly Nottinghamshire also showed a slight, though not statistically significant, decline, yet showed no change in the original. On the other hand, West Cumbria respondents reported a significant increase in the extension, which was not identified in the original survey (the output from the statistical test can be found in Table 15).

Table 14: Eating a meal prepared and cooked from basic ingredients per week - percentages[9]

	Survey One	Survey Two	*n* value
Not more than once a week	20.7	24.1	241
2-3 times a week	23.2	21.6	
4-6 times a week	22.7	24.7	
Every day	37.6	39.5	
Total	100.0	100.0	

Table 15: Eating a meal prepared and cooked from basic ingredients per week - median (interquartile range)

	Survey One	Survey Two	*n* value	*Statistically significant change**
Overall	4 (2)	4 (2)	241	No
Newcastle	4 (2)	4 (2)	75	No
Nottinghamshire	4 (2)	4 (2)	78	No
West Cumbria	4 (2)	4 (2)	88	Yes

*Sign tests, Overall (z = -370, p. = -712), Newcastle (z = -2.004, p. = .045), Nottinghamshire (z = -.5.30, p. = .596), West Cumbria (z = -2.600, p. = 0.09)

Impact on physical activity: attitudes and behaviour

As with the original ***fit for the future*** survey, a statistically significant positive change in attitude to physical activity was observed in the extension survey (see Table 17). Table 16 shows the percentage change in attitudes to health across the two survey timepoints.

Table 16: Changes in attitudes to physical activity - percentages

	Survey One	Survey Two	*n* value
'I think physical activity is important for my health, and I am doing something about it at the moment'	60.9	68.9	238
'I think physical activity is important for my health, but I am not doing anything about it at the moment'/'I don't think physical activity is important for my health'	39.1	31.1	
Total	100.0	100.0	

[9]The categories '*never*', '*less than once a week'* and '*once a week'* are combined in this table.

Table 17 presents the findings relating physical activity behaviour, including minutes walked per day, hard breathing exercise, and muscle strengthening activity, alongside the aforementioned output in relation to attitudes toward physical fitness.

Table 17: Changes in physical activity levels - median (interquartile range)

Variable	Survey One	Survey Two	*n* value	*Statistically significant change**
Changes in attitudes to physical activity	3 (1)	3 (1)	238	Yes
Minutes walking a day	40 (40)	40 (40)	216	No
Minutes of activity breathing harder per week	0 (60)	20 (85)	216	Yes
Minutes doing physical activity for strength per week	10 (90)	10 (90)	211	No

* Sign tests attitude (z =-2.571, p. = 0.10), minutes walking (z = -2.049, p. = .040), hard breathing (z = -.294, p. = .>0.01), strength training (z = - 1.592, p. = .111)

Whilst the extension survey found that the number of respondents who walked 40 minutes or more each day had increased in Nottinghamshire (from 37.5% at baseline to 52% at timepoint 2); the observed change was not significant. Though Nottinghamshire reached statistical significance on this variable in the original survey, this was between timepoints 1-3, not timepoints 1-2, thus suggesting a longer timeframe may be necessary to observe real change, though we cannot, of course, say this for certain. With regard to Newcastle and West Cumbria, no significant change was observed, either in the original, or extension survey.

With regard to undertaking activity that made people breathe harder, the result for the extension survey overall was statistically significant (see Table 17), and as can be seen in Table 18, below, respondents in Newcastle and Nottinghamshire both showed an increase in this type of activity between timepoints 1-2, though West Cumbria showed no change. There are differences between the extension and original survey, as in the extension a statistically significant increase was observed for Newcastle, which was not found in the original.

With regard to muscle strength training, an increase in this type of activity, as with the original survey, was not found. However, whilst Newcastle scores remained the same between both timepoints, Nottinghamshire and West Cumbria reported slight increases.

Table 18: Minutes spent doing activities that make 'you breathe somewhat harder' (interquartile range)

	Survey One	Survey Two	*n* value	*Statistically significant change**
Newcastle	0 (32.50)	20 (160)	61	Yes
Nottinghamshire	0 (71.25)	30 (142.50)	70	No
West Cumbria	10 (60)	10 (60)	88	No

*Sign tests, Newcastle (z = -3.712, p. = .>001), Nottinghamshire (z = -.2.499, p. = .012), West Cumbria (z = -884, p. = 377).

Gender

The findings for the change in physical activity overall was significant, and both men and women had improved between the two timepoints. However, it was found that when gender was isolated, the observed change was greater for males than for females, and did not produce a significant result for females. With regard to activities which involved breathing harder, a statistically significance result was observed in men, but not women, see Table 19 (this difference between the genders on this particular variable was not observed in the original).

Table 19: Changes in hard breathing activity by gender - median (interquartile range)

	Survey One	Survey Two	*n* value	*Statistically significant change**
Male	00 (40)	20 (120)	79	Yes
Female	00 (60)	10 (60**)**	131	No

*Sign tests, male (z = -3.166, p. = .002), female (z = -2.539, p. = .011.

Reducing BMI and waist circumference

BMI is the most commonly used indicator of a person's weight in relation to their height.[10]In the original ***fit for the future*** findings a change to BMI showed a small but significant change from timepoints one to three, but did not find significance for timepoints 1-2, and this is the same for the extension study, as can be seen in Table 20. A non-statistically significant finding was also found when individual areas were isolated, both in the original and extension surveys.

The same test was run again for only those who were assessed as overweight based on their BMI scores at the start of the intervention. As with the original survey, significance was not found between timepoint one and two, though a small reduction in BMI was observed, as

[10] BMI categories: BMI <18.5 underweight; 18.5-24.9 healthy range; BMI≥25 overweight; BMI≥30: obese. Source: NHS Choices, 2014.

can be seen in Table (20). Also, the overall number of respondents who were recorded as overweight, based on their BMI score, was low (n = 36). It is worth noting that the BMI of overweight participants showed a significant decrease in the original surveys between timepoints 2-3, suggesting overall changes to BMI due to weight loss may take longer to take effect, though we cannot assert this with any certainty.

Table 20: BMI -median (interquartile range)

	Survey One	Survey Two	*n* value	*Statistically significant change**
All respondents	25.18 (6.4)	25.16 (6.3)	148	No
Overweight respondents	32.07 (4.68)	32.56 (4.5)	36	No

*sign test All(z = -.410, p. = .682), overweight(p. = .832 (a z score was not produced as data had a binomial distribution)

BMI is not sufficient as a single indicator of healthy body weight, as body shape is also relevant when assessing potential risks associated with excess weight. Body fat stored around the abdomen increases the risk of developing type 2 diabetes and cardiovascular problems, compared to body fat around the hips and on the thighs[11]. Analysing the measurements of all participants in the extension study, no change in waist circumference was found (Table 21). In a similar vein, whilst a small reduction in waist circumference was identified in the original survey, it was not statistically significant.

Table 21: Waist circumference in centimetres - median (interquartile range)

Survey One	Survey Two	*n* value	*Statistically significant change**
86.36 (2.03)	86.36 (2.03)	83	No

*sign test, z = -1.200, p. = .230.

Smoking and alcohol consumption

Reducing both the number, and amount of cigarettes smoked per day were among the aims of ***fit for the future***. Of the 247 older people who completed both surveys in the extension study, only 24 stated that they were smokers, and just over a fifth (n =50) consumed any

[11]NHS recommendations for waist circumference as follows: for women, ideal: < 80cm (32"), high: 80 - 88cm (32" to 35"), very high: >88cm (35"). For men: ideal: < 94cm (37"), high: 94 - 102cm (37" to 40"), very high: >102cm (40").

alcohol at the start of the intervention. Whilst the number of cigarettes smoked reduced from a median score of 11 to 10 this finding was not significant, in line with the original ***fit for the future*** survey responses. Similarly, whilst consumption of alcohol slightly reduced between survey one and two, significance was not found, this again reflects the findings of the original report (Table 22). As the overall numbers are so small, and significance was not reached, tests were not carried out on individual areas.

Table 22: Amount of cigarettes and alcohol consumed -median (interquartile range)

	Survey One	**Survey Two**	***n* value**	***Statistically significant change****
Number of cigarettes smoked (daily)	11 (14)	10 (15)	24	No
Units of alcohol (weekly)	6 (7)	5 (5.5)	50	No

*sign tests, Cigarettes (p. = .302, no z score produced due to the binomial distribution of the data), alcohol (z = -371, p. = .710).

Managing long-term health conditions

This section focuses on whether and the extent to which older people felt more supported to manage their LTCs and felt more in control of their own care related to their specific LTCs[12]. As highlighted previously, the overwhelming majority (90.2%) of the sample reported having one or more LTC, which is slightly lower than the original survey (at 93.2%). The four indicators used to explore older people's feelings relating to the management of their LTCs showed very similar values at both timepoints of the survey (Table 23). Further, as with the original survey, the results of the tests of statistical significance did not indicate change, either overall, or when each area was isolated.

[12]There were four separate questions related to the management of LTCs (see Table 28). Respondents could choose between five options: '*strongly agree'*, '*agree'*, '*disagree'*, '*strongly disagree'* and '*don't know'*. Don't know answers were disregarded when calculating changes, other responses were coded from 1 to 4. A positive outcome in participants' feelings about managing their LTC is indicated by a negative change in the value of the indicators.

Table 23: Older people and the management of their long-term health conditions - median (interquartile range)

Variable	Survey One	Survey Two	*n* value	*Statistically significant change**
I am fully informed about issues relating to my long term health conditions	2 (1)	2 (1)	214	No.
I am fully involved in decisions regarding managing my long term health conditions	2 (1)	2 (1)	216	No.
I am fully supported in managing my long term health conditions	2 (1)	2 (1)	214	No.
I am fully in control of the care for my long term health conditions	2 (1)	2 (1)	215	No.

**sign tests, informed* (z = – 496, p. = .620), involved (z = 0, p. =. 1), supported (z = -712, p. = .476), control (z = -123, p. = .902)

Preventing long-term health conditions

One of the overall aims of ***fit for the future*** was to prevent / delay the development of LTCs and thus to enable older people to remain independent and reduce the cost of LTCs to the health and social care system. One important aspect of this preventative work focussed on falls.

Older people were asked if they had experienced a fall or loss of balance in the month before each wave of the survey. As data in Table 24 indicates, the proportion of older people who did not report a fall or loss of balance increased from 74.9 per cent at the start of the intervention to 81.5 per cent at three months. Whilst these proportions are slightly higher than the original survey, it did not reach statistical significance overall.

Table 24: Older people reporting experiencing a fall or loss of balance - percentages

	Survey One	Survey Two	*n* value	*Statistically significant change**
No	74.9	81.5	227	No.
Yes	25.1	18.5		
Total	100.0	100.0		

*Sign test z = -1.793, p. = 0.73.

When individual areas were isolated, the only difference observed was that West Cumbria showed a statistically significant decrease in participants reporting falls between timepoints 1-2 in the original survey, which was not found in the extension survey.

Older people participating in ***fit for the future*** were asked about the number of unplanned visits to GPs, hospitals and other health professionals. As the reported numbers were very small, we combined the three categories and analysed how the number of visits to health professionals changed over time. As with the original survey, a statistically significant change over time was not found.

Conclusion

The extension project was interested in looking at the potential impact of health care referrals, focusing on additional survey data collected by three of the 11 local Age UK partners. In light of findings which have indicated the potential of 'social prescribing' to make more effective use of health care resources and increase the health and well-being of patients, it was expected that this type of referral to the ***fit for the future*** project would be particularly effective.

It was found, overall, that less variables reached statistical significance in the extension than was observed in the original surveys across the equivalent timepoints; though significant positive change was identified for: **satisfaction with life**; **attitude toward physical activity**; and **exercises that make respondents breathe harder**. However, due to the differences in sample sizes for the two surveys overall, it is viewed as more appropriate to compare the three areas to each other; where some differences were identified.

For example West Cumbria showed a statistically significant change in life satisfaction and the likelihood of eating a cook meal prepared from basic ingredients in the extension, which was not observed in the original. On the other hand, a significant result was obtained for reduced likelihood of falls in the original survey, but not the extension.

For Newcastle, respondents showed a decline around healthy eating, yet a statistically significant increase in hard breathing activities in the extension (no significance was observed in the original).

Regarding Nottinghamshire, a significant change between timepoints 1-2 was not observed in the original or extension survey. A further point, as highlighted above, is that improvement across some variables may become more apparent over time, particularly as some areas which did not reach significance in the original survey between timepoints 1-2 did in fact reach significance at timepoints 1-3.

Whilst some differences between the original and extension surveys were observed, it is not possible to attribute these to the referral route, for the reasons explained in the introduction. In fact, it may be that the important element of adopting a social prescribing model relates to the types of referral it can engender, rather than necessarily leading to different outcomes per se, particularly bearing in mind that having a LTC was a prerequisite to taking part in ***fit for the future***. We would suggest that the most important element of social prescribing, if it were to become more widespread within the health care sector, is its ability to provide an additional route for older people to become aware of, and be encouraged to take part in, projects such as ***fit for the future.*** This is particularly so for socially isolated older people where a GP or similar health professional may be their only

outside contact. Furthermore, it may be that HCPs such as a local GP are a trusted source of information, potentially encouraging more reluctant older people to get in touch with their local Age UK. Alongside this, and as suggested by the HCPs interviewed, is the potential resource savings that social prescribing offers to the health sector, in terms of reducing pressure on services and delaying the onset of conditions becoming more acute. Though, as highlighted in Section 2, more research is needed in this area.

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Appendix One: Characteristics of respondents (percentage)

Table 1: Ethnicity

Ethnic background	Percentage
White British	97.5
Irish	1.0
Gypsy or Irish Traveller	0.0
Other White	1.0
Indian	0.0
Pakistani	0.0
Chinese	0.0
Other Asian	0.0
Mixed white and Black Caribbean	0.0
Mixed white and Black African	0.0
Mixed white and Asian	0.0
Other mixed background	0.0
Caribbean	0.5
Other Black, African, Caribbean	0.0
Arab	0.0
Any other ethnic background	0.0
Total	**100.0**

Table 2: Religion

Religion or belief	Percentage
No religion	23
Christian	75
Buddhist	0
Hindu	0

Muslim	0
Sikh	0
Other religion	2
Total	**100**

Table 3: Sexual orientation

Sexual orientation	**Percentage at end (%)**
Heterosexual	100
LGBT	0
Total	**100**