

British Red Cross

*We acknowledge The Cooperative Society, who funds the Community Connector service as a charity partnership with British Red Cross through money raised by colleagues, members and customers.*

Thursday 21st March 2019

**Evaluation of the British Red Cross Community Connectors Programme**

**Final Report: Appendices. March 2019**

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# Appendix 1: Matching Analysis and Results

Appendix 1 provides additional information on the methods and results for the matched comparator work

**Method**

Matching involves finding individuals with similar characteristics to the service users who would have needed the intervention but who have not received it in order to assess the impact of the intervention. The English Longitudinal Study of Ageing (ELSA) (Banks et al., 2019) was used to identify individuals who did not receive the Community Connectors intervention.

**Data**

ELSA is a longitudinal study of individuals aged 50 and over that is focused on ageing and asks questions on health, social life including the UCLA, well-being and activities. The original sample was drawn from households whose head was a participant in the Health Survey for England (HSE) in 1998, 1999 and 2001. Individuals were eligible in Wave 1 (2002-2003) if they were born before 1st March 1952 (i.e. aged 50 years and over) and still living in private residential address in England. Partners aged 50 years and over were also included. Over subsequent Waves of ELSA, attrition has been addressed by supplementing the cohort with additions from HSE. Data from the most recent two waves, 2014/15 and 2016/17, was used in the matching component. In both waves, data was collected using computer assisted personal interviews (CAPI). As partners could be included in the ELSA sample, there are potentially couples whose data would be dependent on each other and if both are selected for matching, this dependence would be carried into the analysis where there are no equivalent couples. Therefore, one individual from each couple was selected for inclusion in the sample. This was done by randomly dropping one individual in each couple using random numbers. Proxies could complete some questions in ELSA but given differences in self-report and proxy-report, these proxy reports were excluded.

The intervention group were service users that had used the Community Connectors programme. Note that the services were delivered in sites across England, Wales, Scotland and Northern Ireland which is broader than the data in ELSA which focuses on England. Matching was not restricted to just those from England in ELSA to maximise on available data. We tested whether there were any differences in terms of missing data and loneliness across the countries included in service user data to see whether this varied. The data provide in January 2019 (n=5,787) was used. Service users were assessed for inclusion at the start – we used data on those who were accepted (n=5,320/5,787). For those who were accepted, their status was recorded as closed (n=3,695) when they stopped using the service because they had reached the end of their agreed provision (n=1,224, 33%) or because the service user decided they no longer required support before the agreed provision period was over (n=1,209, 33%). However, a number of service users had their status closed because of reasons such as having no contact, needing other services, or other reasons which are not specified (n=1,102, 30%). Some cases were closed due to death (n=39) or admission to hospital (n=119). In the analysis looking at change from baseline to end-of-service, we focused on those who had UCLA end-of service scores irrespective of the reason for a case being closed – although those who decline or cannot be contacted are also more likely to have missing end-of-service UCLA scores.

**Measures and questions used**

Matching requires the same information in both the service users and the chosen dataset – in this case ELSA. ELSA participants completed:

* Five questions relating to loneliness (feel lack companionship, feel left out, feel isolated from others, fells in tune with people around them, feel lonely), the first 3 of which are used to calculate the UCLA scores.
* Four questions on overall wellbeing based on the Office for National Statistics questions (happy, anxious, satisfied and whether things they do are worthwhile) with scores ranging from not at all (0) to completely (10)
* The CASP19 which is a set of 19 questions that ask about quality of life in older people. Scores range from 0 to 57 with higher scores indicating greater quality of life. It has been shown to be associated to some of the risk factors of loneliness such as living alone and difficulty walking (Howell D 2012).
* A self-rated health question – ranging from excellent (1) to poor (5). They also reported whether they had a limiting health conditions which was used to identify health issues.
* A variable to identify potential mobility problems was created in ELSA based on questions around problems walking including walking 100 yards, climbing several flights of stairs without resting and climbing one flight of stairs without resting.
* Bereavement was based on whether respondents reported that their spouse/partner had died since the last ELSA interview which covers a 2-year period.
* Divorce or separation was identified using information from the previous wave (2012/2013) on marital status. Individuals who were previously married or cohabiting but were now divorced or separated were identified as being recently divorced or separated.
* Participants were asked whether they had children and this was used to generate a variable about having no children.
* Living arrangements were based on a derived variable about the number of people living in a household – if this was reported as one, then they were considered to be living alone.
* Age, gender and ethnicity were also recorded.

Community connector service users completed:

* The first 3 UCLA questions from which the UCLA scores can be calculated.
* Information on whether individuals were bereaved, divorced, had no children, whether they had a health condition and mobility problems and whether they were new mums as well as date of birth, gender and ethnicity were recorded as part of the routine data collected by Community Connectors.
* A sub-set have the ONS4 and the SWEMWBS from the additional follow-up data
* A sub-set also have a self-rated health question and a question about how much their physical or emotional health interferes with their social activities which is similar to the questions from the Veteran RAND-36 questionnaire.

**Matching**

Matching relies on available information (observable characteristics) to identify suitable matches for the service users e.g. the level of their loneliness should match that of those who are identified from ELSA. In previous analysis (using the July data) we used age, gender, living arrangements (living alone vs. living with others) as well as two trigger groups (mobility limitations and health issues) to match. However, using only this information results in poor matches in terms of the key variable of concern which is loneliness (UCLA scores). We therefore matched on the trigger groups which occurred in both the service user data and the control data (ELSA) and a measure of loneliness (UCLA scores or questions). The updated matching criteria included:

1. Age-groups (50-60, 60-70, 70-80 and 80+), female, living arrangements (living alone vs not living alone) and UCLA scores groups (3-4, 5-6, 7-8 and 9)
2. Age-groups, female, living alone, the presence of health issues and UCLA scores groups
3. Age-groups, female, living alone, the presence of health issues, mobility limitations and UCLA scores groups
4. Age-groups, female, living alone and individual UCLA questions based on actual responses (1 to 3)
5. Age-groups, female, living alone, the presence of health issues and individual UCLA questions.

Groups were used for age and UCLA scores as using exact age or UCLA scores results in smaller matched samples. The 4 UCLA groups represent different levels of loneliness. Living arrangements were based on whether someone lived alone or not. Those in institutions and sheltered accommodation were assumed to not live alone. When using the UCLA questions, we only tested including the health issues trigger group as sample sizes were small. We did not include other trigger groups such as divorce or bereavement in the matching as these were generally better matched in the initial analysis. This also reduces the loss of data that is the cost of increasing the number of variables that we match on. We also did not match on ethnicity as majority of the service users were white.

We undertook matching for the smaller group who had additional follow-up based on the same criteria as 1 and 2 above. We did not undertake matching using 3, 4 or 5 as the sample size was much smaller. This still results in small samples therefore the analysis of the additional data is exploratory as they cannot be interpreted meaningfully in addressing questions about typical users of the Community Connectors service as they do not match the wider service users.

**Analysis**

*Descriptive analysis*

The service user data and ELSA were described in terms of demographics, trigger groups and UCLA and SWEMWBS scores where available in order to assess whether matching was required. Chi square tests were undertaken to compare the samples – comparing the service user data to ELSA in these characteristics to identify where there were differences. We also assessed the matched samples to see whether the matching had worked. This was tested for age and UCLA scores and any trigger groups not used in matching. Any statistically significant differences indicated that matching is needed or had not worked for that characteristic. As we are not using all the information it is likely that there will be some poor matches for trigger groups.

*Missing data analysis*

In order to support matching, only those who had no missing data on the characteristics that were used to identify their controls could be used as it is not possible to match without this information. This reduces the sample size on which analysis can be undertaken e.g. if an individual is missing age information but has all the other information, they cannot be matched. We compared those with and without missing data in age, gender, living arrangements and baseline UCLA data by looking at trigger groups. We also compared the baseline UCLA data for those who with and without end-of-service UCLA data. Any statistically significant differences indicated that those included in the matching were different from other service users and had an impact on generalisability of results i.e. results were relevant for those ***with data*** but could not be assumed to apply to everyone who used the service. Comparisons were done separately for the service user data and ELSA data.

*Comparison of UCLA scores*

The key assessment is the change in UCLA scores from baseline to end-of-service when comparing service users to ELSA matches. Negative values indicate improvements in terms of loneliness for service users compared to their ELSA match controls. We also considered what the impact of being in the different trigger groups was. This was done by including the trigger groups in the regressions as well as considering whether there were differences in the outcomes based on *simultaneously* being in a trigger group *and* being a service user. This could be done for all trigger groups apart from being a young new parent.

We assessed whether individuals had improvements, no change or deteriorated in their UCLA scores at the end-of service. This is important in order to identify what type of change has occurred in the service-user sample compared to their ELSA matched controls. Finally, we assessed whether participants had changed in their loneliness status or not based on UCLA groups (lonely - UCLA score 6-9; not lonely - UCLA score 3-5). Individuals could be lonely at baseline and not lonely at end-of-service or still be lonely and those who were not lonely at baseline could remain the same at end-of service or they could become lonely.

*Comparison of other wellbeing and health measures*

The wellbeing questions (ONS-4) and general health were also compared using a similar approach to the UCLA scores i.e. using regressions with start and end-of-service scores. In order to compare wellbeing changes to loneliness changes, Cohen’s D effect sizes, which are standardised differences (calculated as the difference in baseline and end-of-service scores divided by overall standard deviation) were calculated for UCLA and these measures. Values between 0.2 and 0.5, 0.5 to 0.8, and 0.8 or more denote ranges containing small, medium, and large effect sizes, respectively according to Cohen’s criteria (Cohen, 1992). Effect sizes have an added advantage over mean differences as they standardise the scores from different measures to allow comparisons e.g. UCLA scores only range from 3 to 9 while ONS-4 questions range from 0 to 10. Effect sizes also take into account variation in the scores (standard deviation). Large variations indicate that results can vary around the mean differences. When included in the effect size calculation, these large variations result in smaller effect sizes to reflect uncertainty in outcomes. The reverse is true when variations are small.

Figure 1 shows the analysis that was undertaken. All analyses were undertaken using Stata 14.2 (StataCorp 2015).

**Figure 1: Summary of matching analysis**

*Green – primary comparison; Orange – exploratory analysis*

**Results**

**Description of data before matching**

Table 1 presents the data across the service users who were accepted and whose status was closed (n=3,695) and the ELSA data with random exclusion of partners who are also part of the ELSA sample (n=6,167). There are statistically significant differences across the two samples across the demographic information (age and gender) and other characteristics such as whether individuals live alone or are in the trigger groups apart from the recently bereaved group. Some of these differences are due to missing information. For example, 23% of the service users do not have gender information. As already noted, other missing data is due to the nature of ELSA where there are no individuals aged below 50 or individuals who would be classified as young new mothers. There are also differences in the UCLA scores. Mean (standard deviation(SD)) scores for service users are 7.3 (1.7) while in ELSA they are 4.2 (1.5) indicating that service users are more lonely on average with 85% of the service users classified as lonely (based on those with UCLA data) compared to 21% in ELSA. See also Figure 2. However, majority of the accepted service users are missing UCLA data (62%). When focusing on those who had additional data, service users had lower mean wellbeing scores compared to ELSA and where more likely to report poor health (Appendix xx Table 1).

**Table 1: Description of overall samples before matching**

|  |  | **Community Connectors****(n=3,695)** | **Additional sample (n=336)**  | **ELSA****(n=6,167)** |
| --- | --- | --- | --- | --- |
|  |  | **%** | **%** | **%** |
| Gender | Male  | 34.7 | 30.7 | 41.9 |
| Female | 65.3 | 69.3 | 58.1 |
| *Missing* | *26.6* | *5.1* | *0* |
|  |  |  |  |  |
| Ethnicity | White British/ Irish/ Other | 85.7 | 92.2 | 92.1 |
| Black British/ Other | 6.1 | 2.9 | 1 |
| Asian British/Other | 4.9 | 3.7 | 1.6 |
| Other  | 3.3 | 1.2 | 0.7 |
| *Missing* | *44.8* | *27.4* | *4.5* |
|  |  |  |  |  |
| Living arrangements | Alone | 64.5 | 68.7 | 34.1 |
| With Spouse | 11.9 | 9.1 | 65.9 |
| With Family/friends | 17.3 | 18.6 |
| Sheltered accommodation | 4.6 | 3.6 | - |
| Nursing/Care home | 1.7 | - | - |
| *Missing* | *43.7* | *18.2* | *-* |
|  |  |  |  |  |
| Age | 18-29 | 5.7 | 5.9 | - |
| 30-39 | 6.4 | 5.7 | - |
| 40-49 | 8.4 | 11.6 | - |
| 50-59 | 12.8 | 16.9 | 20.5 |
| 60-69 | 15.1 | 14.3 | 37.6 |
| 70-79 | 20.7 | 18.6 | 27.4 |
| 80-89 | 22.7 | 22.3 | 12.4 |
| 90-99 | 8.0 | 4.7 | 2 |
| 100+ | 0.2 | - | <0.01 |
| *Missing* | *35.7* | *10.4* | *0* |
|  | Age (mean, (SD)) | 66.2 (19.5) | 63.7 (19.4) | 68.3 (10.2) |
|  |  |  |  |  |
| Trigger  | Health issues | 51.7 (n=1911) | 77.7(n=261) | 35.7 (n=2201) |
| groups | Mobility issues | 26.5 (n=980) | 42.6(n=143) | 35 (n=2157) |
|  | Recently bereaved | 7.6 (n=282) | 16.1(n=54) | 7.5 (n=462) |
|  | Recently divorced/ separated | 2.8 (n=102) | 4.8(n=16) | 0.6 (n=40) |
|  | No children  | 13.5 (n=499) | 23.5(n=79) | 13.7 (n=846) |
|  | Young new parent | 1.8 (n=67) | 2.1(n=7) | - |
|  |  |  |  |  |
| UCLA start scores | UCLA total scores (mean, (SD)) | 7.3 (1.8) | 7.4 (1.7) | 4.2 (1.5) |
|  | Proportion lonely | 85.3 (n=1724) | 86.7 (n=274) | 20.7 (n=1105) |
|  | *Missing* | *59.5 (n=2198)* | *6.0 (n=20)* | *13.3 (n=821)* |
|  |  |  |  |  |
| ONS | Happy (mean, (SD)) | - | 4.4 (2.9) | 7.4 (2.2) |
|  | *Missing* | *-* | *34.8* | *15.7* |
|  | Anxious (mean, (SD)) | - | 4.5 (3.0) | 1.9 (2.5) |
|  | *Missing* | *-* | *33.6* | *15.8* |
|  | Satisfied (mean, (SD)) | - | 4.2 (2.5) | 7.3 (2.4) |
|  | *Missing* | *-* | *33.9* | *14.8* |
|  | Worthwhile (mean, (SD)) | - | 4.4 (2.8) | 7.4 (2.2) |
|  | *Missing* | *-* | *34.8* | *16.0* |
|  |  |  |  |  |
| General health | Excellent | - | 1.4 | 11.4 |
|  | Very good | - | 5.0 | 27.8 |
|  | Good | - | 17.3 | 32.8 |
|  | Fair | - | 41.8 | 19.9 |
|  | Poor | - | 34.6 | 8.1 |
|  | *Missing* | *-* | *34.5* | *0.05* |

SD Standard deviation. Missing % calculated as proportion of total sample in each group

|  |
| --- |
| **Figure 2: UCLA Loneliness Scores BRC Service Users and ELSA (baseline and end-of-service)** |
| U:\BRC\Results January data\buclafucla.png |

BRC- British Red Cross Service Users ELSA- English Longitudinal Study of Ageing sample.

**Missing information**

There were also differences in terms of those with missing data (Table 1). For example, 62% of the service users were missing baseline UCLA data whereas 13% were missing this information in ELSA. As noted in the methods section, it is important to consider whether those who are missing data used for matching are different in any way to those who are not missing data. When considering those with missing data in baseline UCLA scores, age, gender and living arrangements, there were statistically significant differences as those who had missing data were also more likely to be those with no problems compared to those without missing data:

* who *did not* have health problems (87% vs. 54%, Chi2=497 *p*<0.001)
* *without* a mobility problem (77% vs 51%, Chi2=227 *p*<0.001)
* *were not* recently divorced (70% vs. 55%; Chi2=11 p<0.001),
* who *were not* bereaved (72% vs 46%; Chi2=83, *p*<0.001),
* *with* children living at home (74% vs. 47%, Chi2 = 139 *p*<0.001),

There were no statistically significant differences when looking at missing data for new parents. This may indicate a systematic bias of ***including data*** for those ***in the trigger groups***. An assessment of UCLA baseline scores and loneliness for those with data indicates that those in the trigger groups were more likely to be lonely than those who were not in the trigger groups for health issues, divorce and recent bereavement. This has an impact on any analysis as it focuses on the outcomes of those who are worse off either in terms of trigger groups or loneliness rather than looking at everyone who used the service. The bias will make the service look better as a result i.e. if you only have data for those who can show improvements, it shows that the overall level of improvement is better than if the data was not systematically missing some individuals.

When we looked at those who were missing end-of-service UCLA scores, they were still more likely to be those *without* health issues and mobility limitations but there were no statistically significant differences in the other trigger groups. There were also no statistically significant differences in the baseline UCLA scores of those with and without UCLA end-of-service data (7.26 vs 7.3). This was also true for those in the additional sample with a 3-month follow-up where those with and without follow-up data were not different at baseline (7.43 vs 7.49).

The same assessment was undertaken for ELSA data (ELSA had no missing data in age and gender or living arrangements). Those who were missing UCLA scores were *more likely* to have a health issue (17% vs. 11%, Chi2=34, *p*<0.001) or a mobility issue (18% vs. 11%, Chi2=70, *p*<0.001) and *more likely* to have been bereaved (22% vs. 13%, Chi2=37, *p*<0.001) or divorced or separated (25% vs. 13%, Chi2=5, *p*<0.05). This the reverse of the service users as those ***in the trigger groups***were ***more likely to have missing data*** in ELSA which is the normal expectation in surveys. Those missing end-of-service UCLA data were also more likely to have health issues, mobility limitations and been recently bereaved compared to those who were not missing this data. There were also differences for those with missing end-of-service UCLA data as they had slightly higher baseline UCLA data (4.31) compared to those who had end-of-service data (4.13) and these differences were statistically significant (*p*<0.001).

ELSA data only covered England. In the service user data, majority of those in Northern Ireland (85%) and Scotland (78%) had missing data compared to 63% in England and 66% in Wales and these differences were statistically significant. Testing whether loneliness was associated with the country indicated that there were statistically significant differences in loneliness across the 4 countries based on those who had UCLA data with proportions of loneliness ranging from 82% in England to 92% in Northern Ireland. These differences may be due to either differences in missing data or differences in loneliness across the countries but it is not possible to tell which is the cause.

**Assessing matching results**

Tables 2 and 3 provide a descriptive analysis of the matched samples. Loneliness was matched across all the matched samples but age and ethnicity were not matched. Trigger group proportions varied across the matched samples and there were poor matches depending on the criteria used to match. The sample size for divorced was small in ELSA so a Fisher’s Exact test was also undertaken to test the matching which indicated that there were no statistically significant differences at the 5% level although this was borderline for Group 3 (*p*=0.055).

**Table 2: Description of matched service user and ELSA data**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Match 1 (age, gender, living alone, UCLA)** **n= 750** | **Match 2 (age, gender, living alone, health, UCLA) n= 704** | **Match 3 (age, gender, living alone, health, mobility, UCLA) n= 640** | **Match 4 (age, gender, living alone, UCLA)** **n= 638** | **Match 5 (age, gender, living alone, UCLA questions) n= 556** |
|  | **BRC****n=375** | **ELSA** **n=375** | **BRC****n=352** | **ELSA** **n=352** | **BRC****n=320** | **ELSA** **n=320** | **BRC****n=319** | **ELSA** **n=319** | **BRC****n=278** | **ELSA** **n=278** |
|  | **%** | **%** | **%** | **%** | **%** | **%** | **%** | **%** | **%** | **%** |
| *Female* | *68* | *68* | *67.9* | *67.9* | *68.1* | *68.1* | *69.6* | *69.6* | *70.1* | *70.1* |
| *Living Alone* | *65* | *65* | *64.8* | *64.8* | *65.3* | *65.3* | *63.9* | *63.9* | *64.7* | *64.7* |
| *Age*  |  |  |  |  |  |  |  |  |  |  |
|  *50-59* | 16 | 16\* | 15.6 | 15.6\* | 16.6 | 16.6\* | 15.4 | 15.4\* | 14.7 | 14.7\* |
|  *60-69* | 25.9 | 26.9 | 24.7 | 25.9 | 24.1 | 25 | 26.6 | 27.9 | 23.4 | 23.7 |
|  *70-79* | 27.2 | 25.9 | 27.8 | 27 | 26.9 | 26.3 | 26.3 | 25.4 | 27.7 | 27 |
|  *80-89* | 22.4 | 29.1 | 23 | 28.1 | 23.1 | 29.1 | 22.6 | 28.2 | 24.1 | 31.7 |
|  *90-99* | 8.5 | 2.1 | 8.8 | 3.4 | 9.4 | 3.1 | 9.1 | 3.1 | 10.1 | 2.9 |
| *Age (mean, (SD))* | *72.3**(12.1)* | *72.2**(11.2)* | *72.6**(12.1)* | *72.5**(11.4)* | *72.5**(12.3)* | *72.3**(11.5)* | *72.4**(12.0)* | *72.2* *(11.3)* | *73.1**(12.1)* | *72.8**(11.2)* |
|  |  |  |  |  |  |  |  |  |  |  |
| White  | 90.9 | 97\*  | 89.5 | 97.7\* | 90 | 97.8\* | 90.6 | 98.1\* | 91.1 | 98.9\* |
|  |  |  |  |  |  |  |  |  |  |  |
| Health  | 80 | 53.9\* | *77.6* | *77.6* | *76.6* | *76.6* | 80.3 | 53.3\* | 76.3 | 76.3 |
| Mobility  | 50.7 | 49.9 | 51.4 | 61.1\* | *57.2* | *57.2* | 50.8 | 53.9 | 49.3 | 66.5\* |
| Bereaved | 14.9 | 15.2 | 14.5 | 12.2 | 15.3 | 13.4 | 16.6 | 14.1 | 16.2 | 12.9 |
| Divorced | 3.5 | 1.3 | 4.0  | 1.7 | 3.4 | 0.9\* | 3.8 | 2.2 | 4.7 | 1.8 |
| No children  | 25.6 | 19\* | 24.7 | 16.6\* | 24.4 | 16.8\* | 23.8 | 18.1 | 23.4 | 17.8 |
|  |  |  |  |  |  |  |  |  |  |  |
| UCLA baseline mean, SD) | 6.7 (1.9) | 6.5 (1.9) | 6.6 (1.8) | 6.5 (1.8) | 6.5 (1.9) | 6.5 (1.8) | *6.7 (1.9)* | *6.7 (1.9)* | *6.5 (1.9)* | *6.5 (1.9)* |
| Proportion lonely start | 73.3 | 70.4 | 71.6 | 71.3 | 70.6 | 71.3 | *73* | *73* | *71.9* | *71.9* |

Variables used in matching are in italics

\*Statistically significant differences between BRC and ELSA sample (p<0.05). Note that the numbers for those who are divorced are small therefore the statistical test may not be accurate

**Table 3: Description of matched service user and ELSA data for additional sample**

|  |  |  |
| --- | --- | --- |
|  | **Match 1 (age, gender, living alone, UCLA)** **n= 204** | **Match 2 (age, gender, living alone, health, UCLA)** **n= 200** |
|  | **BRC****n=102** | **ELSA** **n=102** | **BRC****n=352** | **ELSA** **n=352** |
|  | **%** | **%** | **%** | **%** |
| *Female* | *70.6* | *70.6* | *71.0* | *71.0* |
| *Living Alone* | *75.5* | *75.5* | *75.0* | *75.0* |
| *Age*  |  |  |  |  |
|  *50-59* | 20.6 | 20.6 | 21 | 21 |
|  *60-69* | 14.7 | 17.6 | 15 | 17 |
|  *70-79* | 29.4 | 27.5 | 29 | 27 |
|  *80-89* | 28.4 | 32.4 | 29 | 34 |
|  *90-99* | 6.9 | 2 | 6 | 1 |
| *Age (mean, (SD))* | *72.3**(12.1)* | *72.2**(11.2)* | *72.7**(12.5)* | *72.4**(11.7)* |
|  |  |  |  |  |
| White  | 96.4 | 97.1  | 96.3 | 97.0 |
|  |  |  |  |  |
| Health  | 79.4 | 47.1\* | *79.0* | *79.0* |
| Mobility  | 57.8 | 50.0 | 57.0 | 68.0 |
| Bereaved | 21.6 | 16.7 | 22.0 | 15.0 |
| Divorced | 5.9 | 2.0 | 6.0  | 3.0 |
| No children  | 25.5 | 17.8 | 26.0 | 16.2 |
|  |  |  |  |  |
| UCLA baseline (mean (SD)) | 7.3 (1.8) | 7.1 (1.8) | 7.3 (1.8) | 7.1 (1.8) |
| Proportion lonely start | 84.3 | 83.3 | 84.0 | 82.0 |
|  |  |  |  |  |
| ONS happy (mean (SD)) | 4.5 (2.9) | 5.2 (2.9)\* | 4.6 (2.9) | 5.3 (2.8)\* |
| ONS anxious (mean (SD)) | 4.7 (3.1) | 3.4 (3.2)\* | 4.5 (3.1) | 4.0 (3.3)\* |
| ONS satisfied (mean (SD)) | 4.2 (2.4) | 4.8 (2.8)\* | 4.2 (2.5) | 5.0 (2.6)\* |
| ONS worthwhile (mean (SD)) | 4.2 (2.7) | 5.5 (2.8)\* | 4.4 (2.7) | 5.7 (2.7)\* |
|  |  |  |  |  |
| General health: |  |  |  |  |
| Excellent  | 0 | 4.9\* | 0 | 2\* |
| Very good | 3.8 | 12.7 | 4 | 8 |
| Good  | 13.5 | 34.3 | 14 | 35 |
| Fair  | 51.9 | 32.4 | 50 | 29 |
| Poor  | 30.8 | 15.7 | 32 | 26 |

Note: ONS and health measures have smaller sample sizes compared to UCLA. Community connectors n=52, ELSA n=92-95 for group 1 and Community connectors n=50, ELSA n=89-91 for group 2.

**Change in raw loneliness scores for service users compared to their ELSA matches**

Matching analysis relied on regression analysis. Results from the regression analysis are shown in Table4 and Tables 5 (a to g).

**Table 4: Change in raw loneliness scores for service users compared to ELSA**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| Match 1 |  |  |  |  |  |  |
| Service user | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* |
|  | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.5) | (-1.0 - -0.6) | (-1.0 - -0.6) |
| Health issues |  | 0.3\*\* |  |  |  |  |
|  |  | (0.0 - 0.5) |  |  |  |  |
| Mobility limits |  |  | 0.2\*\* |  |  |  |
|  |  |  | (0.0 - 0.5) |  |  |  |
| Divorced |  |  |  | -0.6\* |  |  |
|  |  |  |  | (-1.3 - 0.1) |  |  |
| Bereaved |  |  |  |  | -0.2\* |  |
|  |  |  |  |  | (-0.5 - 0.0) |  |
| No children |  |  |  |  |  | 0.1 |
|  |  |  |  |  |  | (-0.1 - 0.4) |
| Constant | 2.2\*\*\* | 2.2\*\*\* | 2.3\*\*\* | 2.4\*\*\* | 2.2\*\*\* | 2.2\*\*\* |
|  | (1.3 - 3.2) | (1.3 - 3.1) | (1.4 - 3.2) | (1.4 - 3.3) | (1.2 - 3.1) | (1.3 - 3.1) |
| Observations | 750 | 750 | 750 | 750 | 750 | 748 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
|  |  |  |  |  |  |  |
| Match 2 |  |  |  |  |  |  |
| Service user | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.7\*\*\* | -0.8\*\*\* | -0.8\*\*\* |
|  | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.5) | (-1.0 - -0.6) | (-1.0 - -0.6) |
| Health issues |  | 0.1 |  |  |  |  |
|  |  | (-0.2 - 0.3) |  |  |  |  |
| Mobility limits |  |  | 0.0 |  |  |  |
|  |  |  | (-0.2 - 0.2) |  |  |  |
| Divorced |  |  |  | -0.7\*\* |  |  |
|  |  |  |  | (-1.4 - -0.1) |  |  |
| Bereaved |  |  |  |  | -0.1 |  |
|  |  |  |  |  | (-0.4 - 0.2) |  |
| No children |  |  |  |  |  | 0.2 |
|  |  |  |  |  |  | (-0.1 - 0.4) |
| Constant | 2.5\*\*\* | 2.5\*\*\* | 2.5\*\*\* | 2.7\*\*\* | 2.5\*\*\* | 2.5\*\*\* |
|  | (1.6 - 3.5) | (1.5 - 3.4) | (1.6 - 3.5) | (1.7 - 3.6) | (1.6 - 3.4) | (1.6 - 3.4) |
| Observations |  |  |  |  |  |  |
| R-squared | 704 | 704 | 704 | 704 | 704 | 701 |
|  |  |  |  |  |  |  |
| Match 3 |  |  |  |  |  |  |
| Service user | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.9\*\*\* |
|  | (-1.1 - -0.6) | (-1.1 - -0.6) | (-1.1 - -0.6) | (-1.0 - -0.6) | (-1.1 - -0.6) | (-1.1 - -0.6) |
| Health issues |  | 0.1 |  |  |  |  |
|  |  | (-0.2 - 0.3) |  |  |  |  |
| Mobility limits |  |  | 0.1 |  |  |  |
|  |  |  | (-0.1 - 0.3) |  |  |  |
| Divorced |  |  |  | -1.0\*\*\* |  |  |
|  |  |  |  | (-1.8 - -0.3) |  |  |
| Bereaved |  |  |  |  | -0.1 |  |
|  |  |  |  |  | (-0.4 - 0.2) |  |
| No children |  |  |  |  |  | 0.2 |
|  |  |  |  |  |  | (-0.1 - 0.5) |
| Constant | 2.9\*\*\* | 2.8\*\*\* | 2.9\*\*\* | 3.1\*\*\* | 2.9\*\*\* | 2.9\*\*\* |
|  | (2.0 - 3.8) | (1.8 - 3.8) | (2.0 - 3.8) | (2.1 - 4.0) | (1.9 - 3.8) | (1.9 - 3.8) |
| Observations | 640 | 640 | 640 | 640 | 640 | 636 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Match 4 |  |  |  |  |  |  |
| Service user | -0.8\*\*\* | -0.9\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* | -0.8\*\*\* |
|  | (-1.0 - -0.6) | (-1.1 - -0.7) | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.6) | (-1.0 - -0.6) |
| Health issues |  | 0.3\*\*\* |  |  |  |  |
|  |  | (0.1 - 0.6) |  |  |  |  |
| Mobility limits |  |  | 0.2\*\* |  |  |  |
|  |  |  | (0.0 - 0.5) |  |  |  |
| Divorced |  |  |  | -0.5 |  |  |
|  |  |  |  | (-1.2 - 0.2) |  |  |
| Bereaved |  |  |  |  | -0.2 |  |
|  |  |  |  |  | (-0.5 - 0.1) |  |
| No children |  |  |  |  |  | 0.1 |
|  |  |  |  |  |  | (-0.2 - 0.4) |
| Constant | 2.9\*\*\* | 2.8\*\*\* | 3.0\*\*\* | 3.1\*\*\* | 2.9\*\*\* | 2.9\*\*\* |
|  | (1.9 - 3.9) | (1.9 - 3.8) | (2.0 - 4.0) | (2.1 - 4.1) | (1.9 - 3.9) | (1.9 - 3.9) |
| Observations | 638 | 638 | 638 | 638 | 638 | 634 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
|  |  |  |  |  |  |  |
| Match 5 |  |  |  |  |  |  |
| Service user | -0.9\*\*\* | -0.9\*\*\* | -0.9\*\*\* | -0.9\*\*\* | -0.9\*\*\* | -0.9\*\*\* |
|  | (-1.1 - -0.7) | (-1.1 - -0.7) | (-1.2 - -0.7) | (-1.1 - -0.6) | (-1.1 - -0.7) | (-1.1 - -0.7) |
| Health issues |  | 0.1 |  |  |  |  |
|  |  | (-0.2 - 0.4) |  |  |  |  |
| Mobility limits |  |  | -0.0 |  |  |  |
|  |  |  | (-0.3 - 0.2) |  |  |  |
| Divorced |  |  |  | -0.5 |  |  |
|  |  |  |  | (-1.2 - 0.2) |  |  |
| Bereaved |  |  |  |  | -0.1 |  |
|  |  |  |  |  | (-0.4 - 0.3) |  |
| No children |  |  |  |  |  | 0.0 |
|  |  |  |  |  |  | (-0.3 - 0.3) |
| Constant | 2.5\*\*\* | 2.4\*\*\* | 2.5\*\*\* | 2.6\*\*\* | 2.4\*\*\* | 2.5\*\*\* |
|  | (1.4 - 3.5) | (1.3 - 3.5) | (1.4 - 3.6) | (1.5 - 3.6) | (1.4 - 3.5) | (1.4 - 3.6) |
| Observations | 556 | 556 | 556 | 556 | 556 | 553 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
|  |  |  |  |  |  |  |
| Match 6 |  |  |  |  |  |  |
| Service user | -0.7\*\*\* | -0.8\*\*\* | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* |
|  | (-1.1 - -0.3) | (-1.3 - -0.4) | (-1.2 - -0.3) | (-1.1 - -0.3) | (-1.1 - -0.3) | (-1.2 - -0.3) |
| Health issues |  | 0.4 |  |  |  |  |
|  |  | (-0.1 - 0.9) |  |  |  |  |
| Mobility limits |  |  | 0.1 |  |  |  |
|  |  |  | (-0.4 - 0.5) |  |  |  |
| Divorced |  |  |  | -0.7 |  |  |
|  |  |  |  | (-1.8 - 0.4) |  |  |
| Bereaved |  |  |  |  | -0.3 |  |
|  |  |  |  |  | (-0.8 - 0.3) |  |
| No children |  |  |  |  |  | 0.6\*\* |
|  |  |  |  |  |  | (0.1 - 1.1) |
| Constant | 3.4\*\*\* | 3.5\*\*\* | 3.5\*\*\* | 3.7\*\*\* | 3.3\*\*\* | 3.3\*\*\* |
|  | (1.6 - 5.3) | (1.6 - 5.3) | (1.6 - 5.3) | (1.8 - 5.6) | (1.4 - 5.2) | (1.4 - 5.1) |
| Observations | 204 | 204 | 204 | 204 | 204 | 203 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Match 7 |  |  |  |  |  |  |
| Service user | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* | -0.7\*\*\* |
|  | (-1.1 - -0.3) | (-1.1 - -0.3) | (-1.1 - -0.3) | (-1.1 - -0.3) | (-1.1 - -0.3) | (-1.1 - -0.3) |
| Health issues |  | 0.2 |  |  |  |  |
|  |  | (-0.3 - 0.7) |  |  |  |  |
| Mobility limits |  |  | -0.1 |  |  |  |
|  |  |  | (-0.5 - 0.3) |  |  |  |
| Divorced |  |  |  | -0.9\* |  |  |
|  |  |  |  | (-1.9 - 0.1) |  |  |
| Bereaved |  |  |  |  | -0.3 |  |
|  |  |  |  |  | (-0.8 - 0.2) |  |
| No children |  |  |  |  |  | 0.2 |
|  |  |  |  |  |  | (-0.3 - 0.7) |
| Constant | 2.1\*\* | 2.0\*\* | 2.2\*\* | 2.5\*\*\* | 1.9\*\* | 2.0\*\* |
|  | (0.3 - 3.9) | (0.1 - 3.8) | (0.3 - 4.0) | (0.6 - 4.4) | (0.1 - 3.8) | (0.2 - 3.9) |
| Observations | 200 | 200 | 200 | 200 | 200 | 199 |
| R-squared | 0.4 | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Service users: shows difference in change in UCLA for the service users compared to their ELSA match

**Table 5a: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match1 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.5\*\*\* |  |  |  |  |
|  | (0.2 - 0.8) |  |  |  |  |
| Service user no health issues | -0.5\*\* |  |  |  |  |
|  | (-0.9 - -0.1) |  |  |  |  |
| Service user with health issues | -0.5\*\*\* |  |  |  |  |
|  | (-0.8 - -0.2) |  |  |  |  |
| ELSA with mobility limits |  | 0.5\*\*\* |  |  |  |
|  |  | (0.2 - 0.8) |  |  |  |
| Service user no mobility limits |  | -0.5\*\*\* |  |  |  |
|  |  | (-0.8 - -0.2) |  |  |  |
| Service user with mobility limits |  | -0.5\*\*\* |  |  |  |
|  |  | (-0.8 - -0.2) |  |  |  |
| ELSA divorced |  |  | 0.1 |  |  |
|  |  |  | (-1.2 - 1.4) |  |  |
| Service user not divorced |  |  | -0.7\*\*\* |  |  |
|  |  |  | (-0.9 - -0.5) |  |  |
| Service user divorced |  |  | -1.6\*\*\* |  |  |
|  |  |  | (-2.4 - -0.8) |  |  |
| ELSA bereaved |  |  |  | -0.4\* |  |
|  |  |  |  | (-0.8 - 0.0) |  |
| Service user not bereaved |  |  |  | -0.8\*\*\* |  |
|  |  |  |  | (-1.0 - -0.6) |  |
| Service user bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.3 - -0.5) |  |
| ELSA no child |  |  |  |  | 0.2 |
|  |  |  |  |  | (-0.2 - 0.5) |
| Service user with child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.0 - -0.5) |
| Service user with no child |  |  |  |  | -0.6\*\*\* |
|  |  |  |  |  | (-1.0 - -0.3) |
| Constant | 2.2\*\*\* | 2.3\*\*\* | 2.4\*\*\* | 2.2\*\*\* | 2.2\*\*\* |
|  | (1.3 - 3.1) | (1.3 - 3.2) | (1.4 - 3.3) | (1.3 - 3.1) | (1.3 - 3.2) |
|  |  |  |  |  |  |
| Observations | 750 | 750 | 750 | 750 | 748 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5b: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match2 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.1 |  |  |  |  |
|  | (-0.3 - 0.5) |  |  |  |  |
| Service user no health issues | -0.7\*\*\* |  |  |  |  |
|  | (-1.1 - -0.2) |  |  |  |  |
| Service user with health issues | -0.7\*\*\* |  |  |  |  |
|  | (-1.0 - -0.3) |  |  |  |  |
| ELSA with mobility limits |  | -0.1 |  |  |  |
|  |  | (-0.4 - 0.2) |  |  |  |
| Service user no mobility limits |  | -0.8\*\*\* |  |  |  |
|  |  | (-1.2 - -0.5) |  |  |  |
| Service user with mobility limits |  | -0.8\*\*\* |  |  |  |
|  |  | (-1.1 - -0.5) |  |  |  |
| ELSA divorced |  |  | 0.2 |  |  |
|  |  |  | (-1.0 - 1.3) |  |  |
| Service user not divorced |  |  | -0.7\*\*\* |  |  |
|  |  |  | (-0.9 - -0.5) |  |  |
| Service user divorced |  |  | -1.8\*\*\* |  |  |
|  |  |  | (-2.6 - -1.1) |  |  |
| ELSA bereaved |  |  |  | -0.2 |  |
|  |  |  |  | (-0.7 - 0.2) |  |
| Service user not bereaved |  |  |  | -0.8\*\*\* |  |
|  |  |  |  | (-1.0 - -0.6) |  |
| Service user bereaved |  |  |  | -0.8\*\*\* |  |
|  |  |  |  | (-1.2 - -0.4) |  |
| ELSA no child |  |  |  |  | 0.3\* |
|  |  |  |  |  | (-0.1 - 0.7) |
| Service user with child |  |  |  |  | -0.7\*\*\* |
|  |  |  |  |  | (-1.0 - -0.5) |
| Service user with no child |  |  |  |  | -0.7\*\*\* |
|  |  |  |  |  | (-1.0 - -0.3) |
| Constant | 2.4\*\*\* | 2.6\*\*\* | 2.7\*\*\* | 2.5\*\*\* | 2.4\*\*\* |
|  | (1.5 - 3.4) | (1.6 - 3.5) | (1.8 - 3.6) | (1.6 - 3.4) | (1.5 - 3.4) |
|  |  |  |  |  |  |
| Observations | 704 | 704 | 704 | 704 | 701 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5c: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match3 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.2 |  |  |  |  |
|  | (-0.1 - 0.6) |  |  |  |  |
| Service user no health issues | -0.6\*\*\* |  |  |  |  |
|  | (-1.1 - -0.1) |  |  |  |  |
| Service user with health issues | -0.7\*\*\* |  |  |  |  |
|  | (-1.1 - -0.3) |  |  |  |  |
| ELSA with mobility limits |  | 0.0 |  |  |  |
|  |  | (-0.3 - 0.4) |  |  |  |
| Service user no mobility limits |  | -0.9\*\*\* |  |  |  |
|  |  | (-1.2 - -0.6) |  |  |  |
| Service user with mobility limits |  | -0.8\*\*\* |  |  |  |
|  |  | (-1.1 - -0.4) |  |  |  |
| ELSA divorced |  |  | -0.3 |  |  |
|  |  |  | (-1.9 - 1.3) |  |  |
| Service user not divorced |  |  | -0.8\*\*\* |  |  |
|  |  |  | (-1.0 - -0.6) |  |  |
| Service user divorced |  |  | -2.0\*\*\* |  |  |
|  |  |  | (-2.9 - -1.2) |  |  |
| ELSA bereaved |  |  |  | -0.2 |  |
|  |  |  |  | (-0.7 - 0.2) |  |
| Service user not bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.1 - -0.6) |  |
| Service user bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.3 - -0.5) |  |
| ELSA no child |  |  |  |  | 0.3 |
|  |  |  |  |  | (-0.1 - 0.7) |
| Service user with child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.1 - -0.6) |
| Service user with no child |  |  |  |  | -0.7\*\*\* |
|  |  |  |  |  | (-1.0 - -0.3) |
| Constant | 2.7\*\*\* | 2.9\*\*\* | 3.1\*\*\* | 2.9\*\*\* | 2.8\*\*\* |
|  | (1.7 - 3.7) | (2.0 - 3.9) | (2.1 - 4.0) | (1.9 - 3.8) | (1.9 - 3.8) |
|  |  |  |  |  |  |
| Observations | 640 | 640 | 640 | 640 | 636 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5d: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match4 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.5\*\*\* |  |  |  |  |
|  | (0.2 - 0.9) |  |  |  |  |
| Service user no health issues | -0.5\*\* |  |  |  |  |
|  | (-1.0 - -0.1) |  |  |  |  |
| Service user with health issues | -0.5\*\*\* |  |  |  |  |
|  | (-0.8 - -0.2) |  |  |  |  |
| ELSA with mobility limits |  | 0.3\*\* |  |  |  |
|  |  | (0.0 - 0.6) |  |  |  |
| Service user no mobility limits |  | -0.7\*\*\* |  |  |  |
|  |  | (-1.1 - -0.4) |  |  |  |
| Service user with mobility limits |  | -0.6\*\*\* |  |  |  |
|  |  | (-0.9 - -0.2) |  |  |  |
| ELSA divorced |  |  | 0.0 |  |  |
|  |  |  | (-1.0 - 1.1) |  |  |
| Service user not divorced |  |  | -0.8\*\*\* |  |  |
|  |  |  | (-1.0 - -0.6) |  |  |
| Service user divorced |  |  | -1.6\*\*\* |  |  |
|  |  |  | (-2.5 - -0.8) |  |  |
| ELSA bereaved |  |  |  | -0.5\*\* |  |
|  |  |  |  | (-1.0 - -0.0) |  |
| Service user not bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.1 - -0.7) |  |
| Service user bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.3 - -0.5) |  |
| ELSA no child |  |  |  |  | 0.2 |
|  |  |  |  |  | (-0.3 - 0.6) |
| Service user with child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.0 - -0.5) |
| Service user with no child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.1 - -0.4) |
| Constant | 2.9\*\*\* | 2.9\*\*\* | 3.1\*\*\* | 2.9\*\*\* | 2.9\*\*\* |
|  | (1.9 - 3.9) | (1.9 - 3.9) | (2.1 - 4.1) | (1.9 - 3.9) | (1.9 - 3.9) |
|  |  |  |  |  |  |
| Observations | 638 | 638 | 638 | 638 | 634 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5e: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match5 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.2 |  |  |  |  |
|  | (-0.2 - 0.6) |  |  |  |  |
| Service user no health issues | -0.7\*\*\* |  |  |  |  |
|  | (-1.2 - -0.2) |  |  |  |  |
| Service user with health issues | -0.8\*\*\* |  |  |  |  |
|  | (-1.2 - -0.3) |  |  |  |  |
| ELSA with mobility limits |  | -0.1 |  |  |  |
|  |  | (-0.4 - 0.3) |  |  |  |
| Service user no mobility limits |  | -1.0\*\*\* |  |  |  |
|  |  | (-1.3 - -0.6) |  |  |  |
| Service user with mobility limits |  | -1.0\*\*\* |  |  |  |
|  |  | (-1.3 - -0.6) |  |  |  |
| ELSA divorced |  |  | 0.2 |  |  |
|  |  |  | (-1.1 - 1.5) |  |  |
| Service user not divorced |  |  | -0.9\*\*\* |  |  |
|  |  |  | (-1.1 - -0.6) |  |  |
| Service user divorced |  |  | -1.6\*\*\* |  |  |
|  |  |  | (-2.4 - -0.8) |  |  |
| ELSA bereaved |  |  |  | -0.3 |  |
|  |  |  |  | (-0.8 - 0.3) |  |
| Service user not bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.2 - -0.7) |  |
| Service user bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.3 - -0.4) |  |
| ELSA no child |  |  |  |  | 0.2 |
|  |  |  |  |  | (-0.3 - 0.6) |
| Service user with child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.1 - -0.6) |
| Service user with no child |  |  |  |  | -0.9\*\*\* |
|  |  |  |  |  | (-1.3 - -0.5) |
| Constant | 2.3\*\*\* | 2.5\*\*\* | 2.6\*\*\* | 2.4\*\*\* | 2.4\*\*\* |
|  | (1.1 - 3.4) | (1.4 - 3.6) | (1.5 - 3.7) | (1.3 - 3.5) | (1.3 - 3.5) |
|  |  |  |  |  |  |
| Observations | 556 | 556 | 556 | 556 | 553 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5f: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match6 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.7\*\* |  |  |  |  |
|  | (0.1 - 1.3) |  |  |  |  |
| Service user no health issues | -0.4 |  |  |  |  |
|  | (-1.2 - 0.4) |  |  |  |  |
| Service user with health issues | -0.4 |  |  |  |  |
|  | (-0.9 - 0.1) |  |  |  |  |
| ELSA with mobility limits |  | 0.1 |  |  |  |
|  |  | (-0.5 - 0.8) |  |  |  |
| Service user no mobility limits |  | -0.6\* |  |  |  |
|  |  | (-1.3 - 0.0) |  |  |  |
| Service user with mobility limits |  | -0.6\*\* |  |  |  |
|  |  | (-1.2 - -0.0) |  |  |  |
| ELSA divorced |  |  | 0.2 |  |  |
|  |  |  | (-2.0 - 2.4) |  |  |
| Service user not divorced |  |  | -0.6\*\*\* |  |  |
|  |  |  | (-1.1 - -0.2) |  |  |
| Service user divorced |  |  | -1.7\*\* |  |  |
|  |  |  | (-3.0 - -0.4) |  |  |
| ELSA bereaved |  |  |  | -0.3 |  |
|  |  |  |  | (-1.1 - 0.5) |  |
| Service user not bereaved |  |  |  | -0.7\*\*\* |  |
|  |  |  |  | (-1.2 - -0.2) |  |
| Service user bereaved |  |  |  | -0.9\*\* |  |
|  |  |  |  | (-1.7 - -0.2) |  |
| ELSA no child |  |  |  |  | 0.8\*\* |
|  |  |  |  |  | (0.0 - 1.6) |
| Service user with child |  |  |  |  | -0.7\*\*\* |
|  |  |  |  |  | (-1.1 - -0.2) |
| Service user with no child |  |  |  |  | -0.3 |
|  |  |  |  |  | (-0.9 - 0.4) |
| Constant | 3.5\*\*\* | 3.5\*\*\* | 3.7\*\*\* | 3.3\*\*\* | 3.2\*\*\* |
|  | (1.6 - 5.3) | (1.6 - 5.3) | (1.8 - 5.7) | (1.4 - 5.2) | (1.3 - 5.1) |
|  |  |  |  |  |  |
| Observations | 204 | 204 | 204 | 204 | 203 |
| R-squared | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Table 5g: Change in raw loneliness scores for service users compared to ELSA by trigger groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Match7 |  |  |  |  |  |
|  |  |  |  |  |  |
| ELSA with health issues | 0.4 |  |  |  |  |
|  | (-0.3 - 1.2) |  |  |  |  |
| Service user no health issues | -0.4 |  |  |  |  |
|  | (-1.3 - 0.5) |  |  |  |  |
| Service user with health issues | -0.4 |  |  |  |  |
|  | (-1.1 - 0.3) |  |  |  |  |
| ELSA with mobility limits |  | -0.1 |  |  |  |
|  |  | (-0.7 - 0.5) |  |  |  |
| Service user no mobility limits |  | -0.8\*\* |  |  |  |
|  |  | (-1.4 - -0.1) |  |  |  |
| Service user with mobility limits |  | -0.8\*\* |  |  |  |
|  |  | (-1.5 - -0.2) |  |  |  |
| ELSA divorced |  |  | -0.9 |  |  |
|  |  |  | (-2.6 - 0.8) |  |  |
| Service user not divorced |  |  | -0.7\*\*\* |  |  |
|  |  |  | (-1.1 - -0.3) |  |  |
| Service user divorced |  |  | -1.6\*\* |  |  |
|  |  |  | (-2.8 - -0.3) |  |  |
| ELSA bereaved |  |  |  | -0.5 |  |
|  |  |  |  | (-1.3 - 0.4) |  |
| Service user not bereaved |  |  |  | -0.8\*\*\* |  |
|  |  |  |  | (-1.2 - -0.3) |  |
| Service user bereaved |  |  |  | -0.9\*\*\* |  |
|  |  |  |  | (-1.6 - -0.3) |  |
| ELSA no child |  |  |  |  | 0.1 |
|  |  |  |  |  | (-0.7 - 0.8) |
| Service user with child |  |  |  |  | -0.8\*\*\* |
|  |  |  |  |  | (-1.3 - -0.3) |
| Service user with no child |  |  |  |  | -0.5 |
|  |  |  |  |  | (-1.1 - 0.2) |
| Constant | 1.8\* | 2.2\*\* | 2.5\*\*\* | 2.0\*\* | 2.1\*\* |
|  | (-0.1 - 3.7) | (0.3 - 4.0) | (0.6 - 4.4) | (0.1 - 3.8) | (0.3 - 4.0) |
|  |  |  |  |  |  |
| Observations | 200 | 200 | 200 | 200 | 199 |
| R-squared | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 |

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

**Change in raw loneliness scores for service users compared to their ELSA matches for the additional follow-up**

To allow comparison between changes in loneliness and changes in wellbeing, we used effect sizes. Values between 0.2 and 0.5, 0.5 to 0.8, and 0.8 or more denote ranges containing small, medium, and large effect sizes, respectively according to Cohen’s criteria (Cohen, 1992).

* UCLA -0.46 [95% CI: -0.74 to -0.18] for group 1 and -0.50 [95% CI: -0.78 to -0.22] (n=102 or 100). This effect size is smaller (-0.32 to -0.42 depending on wellbeing measure) and no longer statistically significant if focus is only on those with wellbeing measures
* ONS happiness 0.39 [95%: -0.03 to 0.81] for group 1 and 0.47 [95% CI: 0.04 to 0.89] for group 2,
* ONS anxious -0.25 [95%: -0.66 to 0.18] for group 1 and 0.06 [95% CI: -0.48 to 0.36] for group 2,
* ONS satisfied 0.83 [95%: 0.38 to 1.28] for group 1 and 0.96 [95% CI: 0.49 to 1.43] for group 2,
* ONS worthwhile activities 0.92 [95%: 0.46 to 1.37] for group 1 and 1.04 [95% CI: 0.57 to 1.51] for group 2,

The effect size was small, negative and statistically significant for the loneliness score which reflects the earlier findings that show improvements in the loneliness scores. However, when we focus on the same sample as those who have wellbeing measures at baseline and end-of-service, the effect size was smaller and no longer statistically significant which indicates that those with wellbeing data may have had either lower or higher loneliness scores at the end-of-service.

The wellbeing measures had large, positive effect sizes for satisfaction and worthwhile activities compared to the effect sizes for the loneliness scores, even when comparing with everyone who had UCLA data in the matching rather than just those who had wellbeing measures. Happiness was the same magnitude but not statistically significant for group 1 while for ONS anxious effect sizes were small and not statistically significant.

*Changes in health from baseline to end-of-service in additional follow-up*

We also assessed changes in health for those with data in the additional sample. Effect sizes for change were -0.02 [95% CI: -0.43 to 0.38] for group 1 (n=30) and -0.05 [95% CI: -0.46 to 0.35] for group 2 (n=30). This indicates that there was little difference in changes in health between the service users and their matched samples. Again, the small sample size means the results should be treated with caution.

**Summary**

When the change in scores from baseline to end-of-service was assessed, service users were more likely to have improved at end-of-service and these improvements were statistically different from their ELSA matches. These improvements in raw scores also translated into changes in loneliness status and less deterioration for service users at end-of-service.

There are a number of limitations that need to be taken into account when considering these results. The small sample size which become smaller when matching is undertaken has an impact on the generalisability of the results. Other limitations are related to the matching data – ELSA and the information available to match.

We used data from 2014/15 to provide a start sample for ELSA which is data from 3-4 years ago in order to provide a follow-up to compare to the end-of-service for the service users sample. There may be current factors that have an influence on BRC service users that may not have been an issue 3 to 4 years ago. These are unobservable factors that cannot be identified due to the limited data in the routine data for service users. However, we cannot use this data even if it provides a better match as we will not have end-of-service ELSA scores as data collection is currently on-going and the data will be available in 2020.

ELSA data was only from England whereas the service user data came from England, Wales, Scotland and Northern Ireland. There was some evidence that those in Northern Ireland were more lonely than the other countries and this may be related to unobservable factors or missing data. Finally ELSA had a longer follow-up (considered the end-of service) than the service user data which may influence the results e.g. the shorter gap in the service user data may result in inflated gains relative to ELSA. This could have been partly informed by comparing those in the additional follow-up to a matched sample. However, as has been demonstrated, matching resulted in smaller numbers at end-of-service and as only n=32 are included in the largest match group.

The limited information available in the routine data also means that there may be other characteristics which we need to match on but which are not available. However, matching on different characteristics gives very similar results which may be an indicator of robustness of the findings. This only applies for the main analysis. The additional follow-up sample is different and smaller, therefore matching analysis is exploratory for this group.

Taking into account these limitations, the matched comparator analysis indicates that service users are more likely to be lonely compared to those in the general population for those who have data. There is evidence of improvements for those who remain in the service and that a larger proportion improve compared to matched samples from those in the general population. Routine data is useful for supporting this type of analysis but missing data that is not missing at random may limit generalisability.

**Figures 3 to 16: Change in UCLA scores and Loneliness for BRC Service Users and ELSA controls**

|  |  |
| --- | --- |
| Figure 3: UCLA Scores change BRC service users and ELSA (Match 1) | Figure 4: Loneliness change BRC service users and ELSA (Match 1) |
| U:\BRC\Results January data\uclabf_match1e.wmf | U:\BRC\Results January data\uclabf_match1evs2.wmf |

|  |  |
| --- | --- |
| Figure 5: UCLA Scores change BRC service users and ELSA (Match 2) | Figure 6: Loneliness change BRC service users and ELSA (Match 2) |
| U:\BRC\Results January data\uclabf_match2e.wmf | U:\BRC\Results January data\uclabf_match2evs2.wmf |

|  |  |
| --- | --- |
| Figure 7: UCLA Scores change BRC service users and ELSA (Match 3) | Figure 8: Loneliness change BRC service users and ELSA (Match 3) |
| U:\BRC\Results January data\uclabf_match3e.wmf | U:\BRC\Results January data\uclabf_match3evs2.wmf |

|  |  |
| --- | --- |
| Figure 9: UCLA Scores change BRC service users and ELSA (Match 4) | Figure 10: Loneliness change BRC service users and ELSA (Match 4) |
| U:\BRC\Results January data\uclabf_match4e.wmf | U:\BRC\Results January data\uclabf_match4evs2.wmf |

|  |  |
| --- | --- |
| Figure 11: UCLA Scores change BRC service users and ELSA (Match 5) | Figure 12: Loneliness change BRC service users and ELSA (Match 5) |
| U:\BRC\Results January data\uclabf_match5e.wmf | U:\BRC\Results January data\uclabf_match5evs2.wmf |

|  |  |
| --- | --- |
| Figure 13: UCLA Scores change BRC service users and ELSA (Match 1)Additional follow-up | Figure 14: Loneliness change BRC service users and ELSA (Match 1) Additional follow-up |
| U:\BRC\Results January data\uclabf_match6e.wmf | U:\BRC\Results January data\uclabf_match6evs2.wmf |

|  |  |
| --- | --- |
| Figure 15: UCLA Scores change BRC service users and ELSA (Match 2) Additional follow-up | Figure 16: Loneliness change BRC service users and ELSA (Match 2) Additional follow-up |
| U:\BRC\Results January data\uclabf_match7e.wmf | U:\BRC\Results January data\uclabf_match7evs2.wmf |

Reference

Howell D. (2012). Interpreting and evaluating the CASP-19 quality of life measure in older people. *Age and ageing*, *41*(5), 612-7.

# Appendix 2: One page summary documents (trigger groups)

#### **Living alone without children at home/retirees**

|  |  |
| --- | --- |
| Area: | Within trigger group sample: (living without children at home/retirees) |
|   |  N=653   | 194(29.7%) lives in North London155(23.7%) lives in London29(4.4%) lives in South East 9(1.4%) lives in Central region,36(5.5%) lives in the South and Channel Islands105(15.8%) lives in Scotland69(10.6%) lives in Wales58(8.9%) lives in Northern Ireland and the Isle of Man |
| Referral (primary)  | N=653  | 109(16.9%) were self-referral125(19.1%) were referred by local authority190(29.1%) referred by NHS services130(19.9%) referred by third sector/charity organisations10(1.5%) were (unspecified) other referrals58(8.9%) were referred by the British Red Cross24(3.7%) were referred by family and friends3(0.5%) unknown source referrals2(0.3%) referred by the private sector2(0.3%) referred by the national government  |
| Living arrangements  |  N=514  | 407 (79.2%) live alone27(5.3%) lives in Sheltered Accommodation46(8.9%) live with Spouse/Partner27(5.3%) live with Family and Friends7(1.4%) nursing/care homes |
| Gender | N=603  | 202(33.5%) were males401 (66.5%) were females.  |
| Age | N= 653 | 179(34.6%) fall within the < 60 years339(65.4%) fall within those 60 years and above group |
| Ethnicity |  N=653 | 281 (75.0%) were which British (English). |
| Signposted |  N=653 | 230 (35.2%) signposted to services |
| Mean number of Telephone contacts |  N=466 | Mean telephone contact was = 9.0  |
| Mean support (minutes) | Mean support (minutes) was = 516  |
| Home appointments made | 283(60.7) home appointments were made |
| Loneliness status | Baseline UCLA scores (n=449) | End-line UCLA scores (n=195) |
| Not Lonely: 60(13.4%)Lonely: 389(86.6%) | Not Lonely: 97(49.7%)Lonely: 98 (50.3%) |
| Number that experienced an improvement in their wellbeing | N=12 | 6(50.0%)  |
| Goals outcomes:  | Achieved goal  | Made lots of progress  |
| Goal 1 (n=255): Goal 2 (n=214):Goal 3 (n=116): | 152(59.6%0117(54.7%)66(56.9%) | 39(15.3%)39(18.2%)16(13.8%) |

#### **Recently bereaved**

|  |  |
| --- | --- |
| Area: | Within trigger group sample: (Recently bereaved) |
|   |  N=377   | 59(15.5%) lives in North London71(18.6%) lives in London26(6.9%) lives in South East in London22(5.8%) lives in the Central region46(12.2%) lives in South and the Channel Islands 61(16.2%) lives in Scotland50(13.3%) lives in Wales42(11.1%) lives in Northern Ireland and the Isle of Man |
| Referral (primary code)  | N=377  | 82(21.8%) were self-referral80(21.2%) were referred by local authority103(27.3%) referred by NHS services55(14.6%) referred by third sector/charity organisations7(1.9%) were (unspecified) other referrals35(9.3%) were referred by the British Red Cross13(3.4%) were referred by family and friends0(0.0%) unknown source referrals1(0.3%) referred by the private sector1(0.3%) referred by the national government  |
| Living arrangements  |  N= 289  | 228 (78.9%) live alone10(3.5%) lives in Sheltered Accommodation7(204%) live with Spouse/Partner38(13.1%) live with Family and Friends6(2.1%) nursing/care homes |
| Gender | N=342  | 105(30.7%) were males237 (69.3%) were females.  |
| Age |  N=298 | 96(32.2%) fall within those aged below 60 years’ group202(67.8%) fall within those 60 years and above group |
| Ethnicity |  N=238 | 179 (75.2%) were which British (English). |
| Signposted | N=377 | 146 (38.7%) signposted to services |
| Means number of telephone contacts |  N=237 | Mean telephone contact was = 9.4  |
| Mean support(minutes) | Mean support (minutes) was = 532.8  |
| Home appointments  | 137(58.8%) home appointments were made |
| Loneliness status | *Baseline UCLA scores (n=*246) | *End-line UCLA scores (n=109)* |
| Not Lonely: 25(10.2%)Lonely: 221(89.8%) | Not Lonely: 45 (41.3%)Lonely: 64 (58.7%) |
| Number that experienced an improvement in their wellbeing |  N=10  | 7(70.0%)   |
| Goal  | Achieved  | Made lots of progress  |
| Goal 1 (n=148): Goal 2 (n=109):Goal 3 (n=71): | 82(55.4%)54(49.5%)38(53.5%) | 28(18.3%)21(19.3%)12(16.9%) |

#### **Recently divorced or separated**

|  |  |
| --- | --- |
| Area: | Within trigger group sample: (Recently divorced or separated) |
|   | N=134  | 21(15.7%) lives in North London26(19.4%) lives in London9(6.7%) lives in South East in London6(4.5%) lives in the Central region9(6.7%) lives in South and the Channel Islands31(23.1%) lives in Scotland16(11.9%) lives in Wales16(11.9%) lives in Northern Ireland and the Isle of Man |
| Referral (primary code)  | N=134  | 43(32.1%) were self-referral24(217.9%) were referred by local authority32(23.9%) referred by NHS services15(11.2%) referred by third sector/charity organisations1(0.7%) were (unspecified) other referrals11(8.2%) were referred by the British Red Cross7(5.2%) were referred by family and friends0(0.0%) unknown source referrals0(0.0%) referred by the private sector1(0.7%) referred by the national government  |
| Living arrangements  |  N=91  | 57(62.6%) live alone7(7.7%) lives in Sheltered Accommodation0(0.0%) live with Spouse/Partner26(28.6%) live with Family and Friends1(1.1%) nursing/care homes |
| Gender | N=122  | 41(33.6%) were males81 (66.4%) were females.  |
| Age |  N=114 | 47(41.2%) fall within those aged below 60 years67(58.8%) fall within those aged 60 years and above |
| Ethnicity |  N=83 | 70(84.3%) were which British (English). |
| Signposted |  N=134 | 50 (37.3%) signposted. |
| Mean number of telephone contacts |  N=105 |  Mean telephone contact was = 8.1  |
| Mean support | Mean support (minutes) was = 466.4  |
| Home appointments  | 53(61.8%) home appointments were made |
| Loneliness status | Baseline UCLA scores (n=99): | End-line UCLA scores(n=45): |
| Not Lonely: 7(7.1%)Lonely: 92(92.9%) | Not Lonely: 25(55.6%)Lonely: 20(44.4%) |
| Number that experienced an improvement in their wellbeing | N=2  | 2(100%) |
| Goal | Achieved  | Made lots of progress  |
| Goal 1 (n=57): Goal 2 (n=42):Goal 3(n=24): | 35(61.4%)24(57.1%)13(54.2%) | 12(21.1%)10(23.8%)5(120.8%) |

#### **Experiencing health issues**

|  |  |
| --- | --- |
| Area: | Within trigger group sample: (experiencing health issues) |
|   |  N=2511  | 461(18.4%) lives in North London561(22.3%) lives in London154(6.1%) lives in South East in London109(4.3%) lives in the Central region218(8.7%) lives in South and the Channel Islands 526(20.9%) lives in Scotland212(8.4%) lives in Wales270(10.8%) lives in Northern Ireland and the Isle of Man |
| Referral (primary)  | N=2511  | 465(18.5%) were self-referral.588(23.4%) were referred by local authority.736(29.3%) referred by NHS services.364(14.5%) referred by third sector/charity organisations.35(1.4%) were (unspecified) other referrals.213(8.5%) were referred by the British Red Cross.84(3.3%) were referred by family and friends.9(0.4%) Unknown source referrals.12(0.5%) referred by the private sector.5(0.2%) referred by the national government.  |
| Living arrangements  |  N=1889  | 1193 (63.2%) live alone.103(5.5%) lives in Sheltered Accommodation.227(12.0%) live with Spouse/Partner.330(17.5%) live with Family and Friends.36(1.9%) nursing/care homes. |
| Gender | N=2289  | 811(35.4%) were males.1478(64.6%) were females.  |
| Age |  N=1905 | 711(37.3%) fall within those aged below 60 years.1194(62.7%) fall within those aged 60 years and above. |
| Ethnicity |  N=1439 | 1090 (75.7%) were which British (English). |
| Signposted |  N=2511 | 933 (37.2%) signposted. |
| Number of telephone contacts |  N=1550 |  Mean telephone contact was =8.2  |
| Mean support (minutes) | Mean support (minutes) was = 465.0 |
| Home appointments  | 907(58.5%) home appointments were made |
| Loneliness status | *Baseline UCLA scores (n=1552):*Not Lonely: 210(13.5%)Lonely: 1342(86.5%) | *End-line UCLA scores* *(n=672):*Not Lonely: 328 (48.8%)Lonely: 344 (51.2%) |
| Number that experienced an improvement in their wellbeing | N=52:  | 38(73.1%)  |
|  Goal | Achieved | Made lots of progress  |
| Goal 1 (n=930): Goal 2 (n=658)Goal 3 (n=350): | 570(61.3%)331(50.3%)171(48.9%) | 121(13.0%)111(16.9%)59(16.9%).  |

#### **Mobility limitations**

|  |  |
| --- | --- |
|  Area:  | Within trigger group sample: (mobility limitations) |
|   | N=1319  | 193(14.6%) lives in North London315(23.9%) lives in London77(5.8%) lives in South East in London76(5.8%) lives in the Central region124(9.4%) lives in South and the Channel Islands 303(23.0%) lives in Scotland95(7.2%) lives in Wales136(10.3%) lives in Northern Ireland and the Isle of Man |
| Referral (primary code)  | N=1319  | 219(16.6%) were self-referral.325(24.6%) were referred by local authority.336(25.5%) referred by NHS services.209(15.5%) referred by third sector/charity organisations.28(2.1%) were (unspecified) other referrals.134(10.2%) were referred by the British Red Cross.47(3.6%) were referred by family and friends.7(0.5%) unknown source referrals.12(0.9%) referred by the private sector.2(0.2%) referred by the national government.  |
| Living arrangements  | N=1006  | 660(65.6%) live alone67(6.7%) lives in Sheltered Accommodation.116 (11.5%) live with Spouse/Partner.138(13.7%) live with Family and Friends.25(2.5%) nursing/care homes. |
| Gender | N=1206  | 381(31.6%) were males825(68.4%) were females.  |
| Age | N =1002 | 361(36.0%) fall within those aged below 60 years641(64.0%) fall within those aged 60 years and above |
| Ethnicity | N= 745  | 570 (76.5%) were which British (English). |
| Signposted | N= 1319  | 508 (38.5%) signposted |
| Mean number of telephone contacts | N=855 | Mean telephone contact was = 9.8  |
| Mean support (minutes) | Mean support (minutes) was = 534.2  |
| Home appointments  | 532(62.2%) home appointments were made |
| Loneliness status | *Baseline UCLA score* (n=874) | *End-line UCLA scores* (n =383)  |
| Not Lonely: 138(15.8%)Lonely: 736(84.2%) | Not Lonely: 189(49.3%)Lonely: 194(50.7%) |
| Number that experienced an improvement in their wellbeing | N=36 | *25(69.1)*  |
| Goal  | Achieved  | Made lots of progress |
| Goal 1 (n=493): Goal 2 (n=369)Goal 3 (n=350): | 294(59.6%)187(50.7%)103(49.5%)  | 6(12.4%)55(14.9%)30(14.4%) |

#### **Young parents (18 to 24 years)**

|  |  |
| --- | --- |
| Area: | Within trigger group sample: (Young parents) |
|   |  N= 89  | 7(7.9%) lives in North London14(15.7%) lives in London20(22.5%) lives in South East in London1(1.1%) lives in the Central region16(18.0%) lives in South and the Channel Islands 9(10.1%) lives in Scotland4(14.5%) lives in Wales18(20.2%) lives in Northern Ireland and the Isle of Man |
| Referral (primary code)  | N=89  | 43(48.3%) were self-referral.14(15.7%) were referred by local authority.9(10.1%) referred by NHS services.6(6.7%) referred by third sector/charity organisations.0(0.0%) were (unspecified) other referrals.13(14.6%) were referred by the British Red Cross.4(4.5%) were referred by family and friends.0(0.0%) unknown source referrals.0(0.0%) referred by the private sector.0(0.0%) referred by the national government  |
| Living arrangements  |  N=56  | 11(19.6%) live alone1(1.8%) lives in Sheltered Accommodation.17(30.4%) live with Spouse/Partner.27(48.2%) live with Family and Friends.0(0.0%) nursing/care homes. |
| Gender | N=74  | 2(2.7%) were males72(97.3%) were females.  |
| Age |  N=61 | All fall within age group under 60 years  |
| Ethnicity |  N=47 | 34 (72.3%) were which British (English). |
| Signposted |  N=89 | 34 (38.2%) signposted |
| Number of telephone contacts | N=52 |  Mean telephone contact was = 5.1  |
| Mean support (minutes) | Mean support (minutes) was = 442.3  |
| Home appointments  | 21(30.6%) home appointments were made |
| Loneliness status | Baseline UCLA scores (n=43): | End-line UCLA scores (n=18): |
| Not Lonely: 3(7.0%)Lonely: 40 (93.0%) | Not Lonely: 9(50.0%)Lonely: 9(50.0%) |
| Number that experienced an improvement in their wellbeing | N=2  | 2(100%)  |
| Goal  | Achieved | Made lots of progress |
| Goal 1 (n=27): Goal 2 (n=21)Goal 3 (n=14): | 10(37.0%)1(28.6%)1(7.1%)  | 7(25.9%)6(28.6%)4(28.6%) |

#### **Service users not belonging to any of the trigger groups**

|  |  |
| --- | --- |
|  | Within the Not trigger group |
| Area | n=3023 | 573(19.0%) lives in North London628(20.8%) lives in London201(6.6%) lives in South East in London135(4.5%) lives in the Central region299(9.9%) lives in South and the Channel Islands580(19.2%) lives in Scotland263(8.7%) lives in Wales344(11.4%) lives in Northern Ireland and the Isle of Man |
| Referral source (primary) | n=3023 | 625(20.7%) were self-referral.692(22.9%) were referred by local authority.822(27.2%) referred by NHS services.436(14.4%) referred by third sector/charity organisations.49(1.6%) were (unspecified) other referrals.252(8.3%) were referred by the British Red Cross.114(3.8%) were referred by family and friends.11(0.4%) unknown source referrals.16(0.5%) referred by the private sector.6(0.2%) referred by the national government |
| Living arrangements | n=2230 | 1436(64.4%) live alone118(5.3%) lives in Sheltered Accommodation.254(11.4%) live with Spouse/Partner.380(17.0%) live with Family and Friends.42(1.9%) nursing/care homes. |
| Gender | n=2726 | 922(33.8%) were males1804(66.2%) were females.  |
| Age |  | 844(36.7%) fall within those aged below 60 years1453(63.3%) fall within those aged 60 years and above |
| Ethnicity  | n=1742 | 1134(76.6) were which British (English). |
| Signposted  | n=3023 | 1101(36.4) signposted.  |
| Loneliness  | Baseline UCLA(n=1835) | Endline UCLA(n=781) |
| Not Lonely: 262(14.2%)Lonely: 1577(85.8%)  | Not lonely: 386(48.4%)Lonely: 395(50.6%) |
| Number that experienced an improvement in their wellbeing | n=2 | 1(50%) |
| Goal | Achieved goal  | Made lots of progress |
| Goal 1 (n=236)Goal 2 (n=81)Goal 3 (n=53): | 209(88.6)56(69.1)29(54.7) | 9(3.8%)11(13.6%)13(24.5%) |

# Appendix 3: Proportion of volunteer support by scheme

|  |  |  |  |
| --- | --- | --- | --- |
| **Scheme** | **Paid Staff Only****N (%)** | **Volunteer****N (%)** | **Total****N (%)** |
| Aberdeen Community Connector | 16 (64.0) | 9 (36.0) | 25 (100.0) |
| Barking & Dagenham Community Connector | 132 (97.8) | 3 (2.2) | 135 (100.0) |
| Blackpool Community Connector | 43 (69.4) | 19 (30.6) | 62 (100.0) |
| Blyth Community Connector | 64 (97.0) | 2 (3.0) | 66 (100.0) |
| Boston Community Connector | 18 (100.0) | 0 (0.0) | 18 (100.0) |
| Brixton Community Connector | 44 (88.0) | 6 (12.0) | 50 (100.0) |
| Camborne & Redruth Community Connector | 61 (95.3) | 3 (4.7) | 64 (100.0) |
| Carmarthenshire Community Connector | 43 (82.7) | 9 (17.3) | 52 (100.0) |
| Conwy Community Connector | 53 (59.6) | 36 (40.4) | 89 (100.0) |
| Corby Community Connector | 40 (97.6) | 1 (2.4) | 41 (100.0) |
| Douglas Community Connector | 25 (75.8) | 8 (24.2) | 33 (100.0) |
| Dundee Community Connector | 195 (100.0) | 0 (0.0) | 195 (100.0) |
| Durham Community Connector | 21 (63.6) | 12 (36.4) | 33 (100.0) |
| Fife Community Connector | 86 (96.6) | 3 (3.4) | 89 (100.0) |
| Golborne Community Connector | 79 (86.8) | 12 (13.2) | 91 (100.0) |
| Holloway Community Connector | 56 (93.3) | 4 (6.7) | 60 (100.0) |
| Inverness Community Connector | 28 (100.0) | 0 (0.0) | 28 (100.0) |
| Luton Community Connector | 64 (91.4) | 6 (8.6) | 70 (100.0) |
| Middlesbrough Community Connector | 42 (97.7) | 1 (2.3) | 43 (100.0) |
| New Cross Community Connector | 75 (59.5) | 51 (40.5) | 126 (100.0) |
| Newcastle Community Connector | 101 (61.2) | 64 (38.8) | 165 (100.0) |
| Newport Community Connector | 46 (90.2) | 5 (9.8) | 51 (100.0) |
| North Belfast Community Connector | 72 (93.5) | 5 (6.5) | 77 (100.0) |
| Nottingham Community Connector | 24 (96.0) | 1 (4.0) | 25 (100.0) |
| Oldham Community Connector | 51 (100.0) | 0 (0.0) | 51 (100.0) |
| Plymouth Community Connector | 10 (100.0) | 0 (0.0) | 10 (100.0) |
| Poole Community Connector | 146 (99.3) | 1 (0.7) | 147 (100.0) |
| Reading Community Connector | 32 (61.5) | 20 (38.5) | 52 (100.0) |
| Shetland Community Connector | 25 (21.6) | 91 (78.4) | 116 (100.0) |
| Southampton Community Connector | 74 (96.1) | 3 (3.9) | 77 (100.0) |
| Stockport Community Connector | 81 (89.0) | 10 (11.0) | 91 (100.0) |
| Stonebridge & Harlesden Community Connector | 34 (97.1) | 1 (2.9) | 35 (100.0) |
| Thanet Community Connector | 27 (93.1) | 2 (6.9) | 29 (100.0) |
| Torfaen Community Connector | 34 (49.3) | 35 (50.7) | 69 (100.0) |
| West Belfast Community Connector | 259 (98.5) | 4 (1.5) | 263 (100.0) |
| York Community Connector | 17 (37.8) | 28 (62.2) | 45 (100.0) |
| Total | 2218 (83.0) | 455 (17.0) | 2673 (100.0) |

*Please note this is based on service users who have had their cases closed.*

# Appendix 4: Demographics of the wellbeing sample in relation to all service users

|  |  |  |  |
| --- | --- | --- | --- |
| **Demographic** |  | **Wellbeing sample****(n= 67)** | **All service users**  **(n= 5787)** |
| **Gender** | **Female** | 46 (75.4) | 2855 (64.9) |
| **Male** | 15 (24.6) | 1547 (35.1) |
| **Total** | 61 (100) | 4402 (100) |
|  |  |  |  |
| **Ethnicity** | **White British** | 38 (88.3) | 2492 (76.7) |
|  | **Not White British** | 5 (11.7) | 758 (23.3) |
|  | **Total** | 43 (100) | 3249 (100) |
|  |  |  |  |
| **Living arrangements** | **Alone** | 33 (63.5) |  2108 (64.0) |
| **Living with others** | 19 (36.5) | 1177 (35.8) |
| **Total** | 52 (100) | 3285 (100) |
|  | **60 years and older** | 41 (66.1) | 2538 (63.6)  |
| **Age** | **Under 60** | 21 (33.9) | 1440 (36.1) |
| **Total**  | 62 (100) | 3993 (100) |
|  | **Mean Age** | 65 (±25.3) | 64.5 (±26.4) |

*Please note that numbers for each demographic will vary depending on missing cases.*

# Appendix 5: Follow up sample in relation to trigger groups

|  |  |  |  |
| --- | --- | --- | --- |
| **Trigger group** |  | **Wellbeing sample** | **All service users** |
| **Living without children at home/ recently retired** | **Yes** | 12 (17.9) | 653 (11.3) |
|  | **No** | 55 | 5134 (88.7) |
|  |  |  |  |
| **Recently divorced/separated** | **Yes** |  | 134(2.3) |
|  | **No** |  | 5653 (97.7) |
|  |  |  |  |
| **Recently bereaved** | **Yes** | 10 (14.9) | 377 (6.5) |
|  | **No** | 57 | 5410 (97.7) |
|  |  |  |  |
| **Experiencing health issues** | **Yes** | 52 (77.6) | 2511 (43.4) |
|  | **No** | 15 | 3276 (56.6) |
|  |  |  |  |
| **With mobility issues** | **Yes** | 36 (53.7) | 1319 (22.8) |
|  | **No** | 31 | 3276 (56.6) |
|  |  |  |  |
| **Young parents** | **Yes** | 2 (3%) | 89 (1.5) |
|  | **No** | 65 | 5698 (98.5) |
|  |  |  |  |
| **Trigger group status** | **Yes** | 2 | 2764 (47.8) |
|  | **No** | 65 | 3023 (52.2) |

# Appendix 6: Demographics of the follow up sample in relation to all service users

|  |  |  |  |
| --- | --- | --- | --- |
| **Demographic** |  | **Follow-up sample****(n= 79)** | **All service users (n= 5787** |
| **Gender** | **Female** | 51 (68.9) | 2855 (64.9) |
| **Male** | 23 (31.1) | 1547 (35.1) |
| **Total** | 74 (100) | 4402 (100) |
|  |  |  |  |
| **Ethnicity** | **White British** | 44 (80) | 2492 (76.7) |
|  | **Not White British** | 12 (20) | 758 (23.3) |
|  | **Total** | 60 (100) | 3249 (100) |
|  |  |  |  |
| **Living arrangements** | **Alone** | 50 (80.6) |  2108(64.0) |
| **Living with others** | 12 (19.4) | 1177(35.8) |
| **Total** | 62 (100) | 3285(100) |
|  | **60 years and older** | 42 (62.7) | 2538 (63.6)  |
| **Age** | **Under 60** | 25 (37.3) | 1440 (36.1) |
| **Total**  | 74 (100) | 3993 (100) |
|  | **Mean Age** | 65 | 64.5(±26.4) |

# Appendix 7: Follow up sample in relation to trigger groups

|  |  |  |  |
| --- | --- | --- | --- |
| **Trigger group** |  | **Follow-up sample (n=79)** | **All service users** |
| **Individuals with health issues** | **Yes** | 66 (83.5) | 2511(43.4) |
|  | **No** | 13 (16.5) | 3276(56.6) |
|  |  |  |  |
| **Individuals with mobility issues** | **Yes** | 36 (45.6) | 1319(22.8) |
|  | **No** | 43 (54.4) | 3276(56.6) |
|  |  |  |  |
| **Individuals recently bereaved** | **Yes** | 12 (15.2) | 377(6.5) |
|  | **No** | 67 (84.8) | 5410(97.7) |
|  |  |  |  |
| **Individuals living without children at home/recently retired** | **Yes** | 24 (30.4) | 653 (11.3) |
|  | **No** | 55 (69.6) | 5134(88.7) |
|  |  |  |  |
| **Divorced/separated** | **Yes** | 7 (8.9) | 134(2.3) |
|  | **No** | 72 (91.1) | 5653(97.7) |
|  |  |  |  |
| **Young parents** | **Yes** | 1 (1.3)  | 89(1.5) |
|  | **No** | 78 (98.7) | 5698(98.5) |
|  |  |  |  |
| **Not recorded as being in a trigger group** | **Yes** | **4 (5.1)** | **2764(47.8)** |
|  | **No** | **75 (94.9)** | **3023(52.2)** |