LEEDS BECKETT UNIVERSITY

EVALUATION OF CONNECT FOR HEALTH

Quantitative Summary Report

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Methodology

Questionnaires

In order to measure change in wellbeing, mental and physical health, social isolation and loneliness as well as ability to manage long term conditions, a questionnaire was administered by Connect for Health Well-being Coordinators to clients at baseline (during the initial assessment) and administered again when individuals 'exited' the service (described throughout as 'follow-up' or 'post-stage').

The questionnaire completed by clients at baseline and follow-up included seven statements designed to measure the wellbeing of participants. Responses to each statement were assigned a value from 1 to 5, with the least positive option scoring the lowest and the most positive option scoring the highest. For each participant the response scores were added together to give a total 'wellbeing' score. The maximum possible score was 35 and the minimum was 7.

The questionnaire also included 3 questions related to relationships and social networks. The response to these 3 questions were scored, and a total 'social network' score calculated for each participant. Once again, the least positive option scored the lowest and the most positive option scored the highest. The maximum possible score was 15 and the minimum was 3.

Ninety-five percent confidence intervals of the average change in 'wellbeing' and 'social network' scores from baseline to post stage were calculated. Paired (related samples) t-tests were also used to assess whether there was a statistically significant difference in average scale scores from baseline to post stage. A confidence interval provides an indication of the range within which the true effect is likely to be. The width of a confidence interval is affected by the size of the sample, with smaller samples tending to have larger confidence intervals than bigger ones. A confidence interval of a mean difference that does not pass through 0 is indicative of a statistically significant change.

For all inferential tests a p value of 0.05 or less was taken to be statistically significant. In some cases, percentages may not add up to exactly 100% due to rounding.

Findings

Demographic data from questionnaire respondents

In total, 436 participants provided demographic information. The sex, age, and ethnicity of individuals are detailed below.

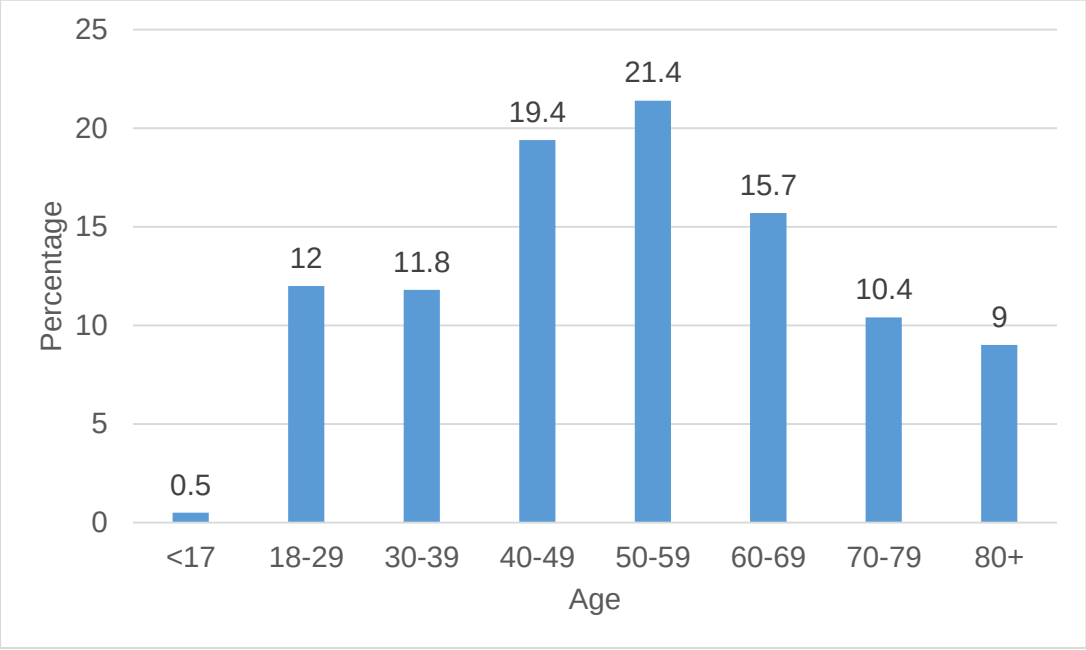
Sex (n=435)

Overall, 63.9% of participants were female and 36.1% male.

Age *(n=434)*

In total, 434 participants provided a date of birth which was used to calculate each person's age at analysis. The mean age of participants was 53.1 years (SD=18.02 years), with the oldest individual being 94 years old and the youngest 16 years. Figure 1 shows that the largest proportion of individuals (21.4%) were aged between 50-59 years old. Over half (56.5%) of participants were between 40-69 years old and 43.7% were under 50 years old.

Figure 1: Age of participants (n=434)



Ethnicity (n=436)

Table 1 shows that 86.9% of participants were White British, and a further 2.3% White Irish (n=10). Fourteen participants (3.2%) described their ethnic background as Asian/ Black Asian.

Table 1: Ethnicity of participants

	Frequency	Percent
White British	379	86.9%
White Irish	10	2.3%
Other White	6	1.4%
Mixed White and Black Caribbean	3	0.7%
Mixed White and Black African	2	0.5%
White and Asian	2	0.5%
Asian and Black Asian	14	3.2%
Black Caribbean	3	0.7%
Black African	8	1.8%
Other Black African	2	0.5%
Other	7	1.6%

Wellbeing

In total, 342 participants provided complete wellbeing data at baseline and post stage. The average wellbeing score at baseline was 18.16 (SD=6.03). The highest score was 35 and the lowest was 7. At the post stage the average score was 22.13 (SD=5.8) with the highest score being 35 and the lowest 7.

The average change in score was 3.98 (SD=5.33) with a 95% confidence interval of 3.41 to 4.55, which is indicative of significant change. This is supported by the results of a paired t-test, which suggested there was a statistically significant improvement in well-being from baseline to post stage ($t=13.81$, $df=341$, $p<0.001$). The size of the improvement was medium to large ($d=0.75$).

Out of the 342 participants:

- 265 (77.5%) had an improved wellbeing score from baseline to post stage
- 58 (17%) had a decrease in score
- 19 (5.6%) had no overall change.

Analysis of change in wellbeing score by sex

As can be seen from Table 2, average wellbeing score improved significantly from baseline to post stage for both males and females. There was no significant difference between males & females in terms of improvement in wellbeing ($t=0.47$, $df=337$, $p=0.96$).

Table 2: Wellbeing score by sex

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Males (n=127)	18.19 (5.76)	22.14 (5.86)	3.95 (5.78)	2.94 to 4.97	7.71 (126)	p<0.001
Females (n=212)	18.15 (6.21)	22.13 (5.82)	3.98 (5.08)	3.29 to 4.67	11.4 (211)	p<0.001

Analysis of change in wellbeing score by age

Analysis revealed there to be a significant negative relationship (r=-0.21, p<0.001) between age and change in wellbeing from baseline to the post stage. This indicates that younger individuals tended to have greater improvement in wellbeing than older people. To explore the relationship between age and wellbeing, individuals were assigned into 2 groups i) under 50 years, ii) 50 years and older. An analysis of change in wellbeing scores over time was then conducted. Table 3 shows average wellbeing score improved significantly from baseline to post stage for both age groups. Additional analysis revealed that average improvement was significantly greater in the under 50 years (4.74) age group than the 50 years & over group (3.42) (t=2.43, df=336 p=0.02).

Table 3: Wellbeing score by age group

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Under 50 (n=139)	17.56 (5.7)	22.3 (5.71)	4.74 (4.94)	3.91-5.57	11.32 (138)	p<0.001
50 & over (n=199)	18.58 (6.23)	22.01 (5.91)	342 (5.57)	2.64-4.2	8.67 (198)	p<0.001

Health

Participants were asked to what extent they had problems today with the following:

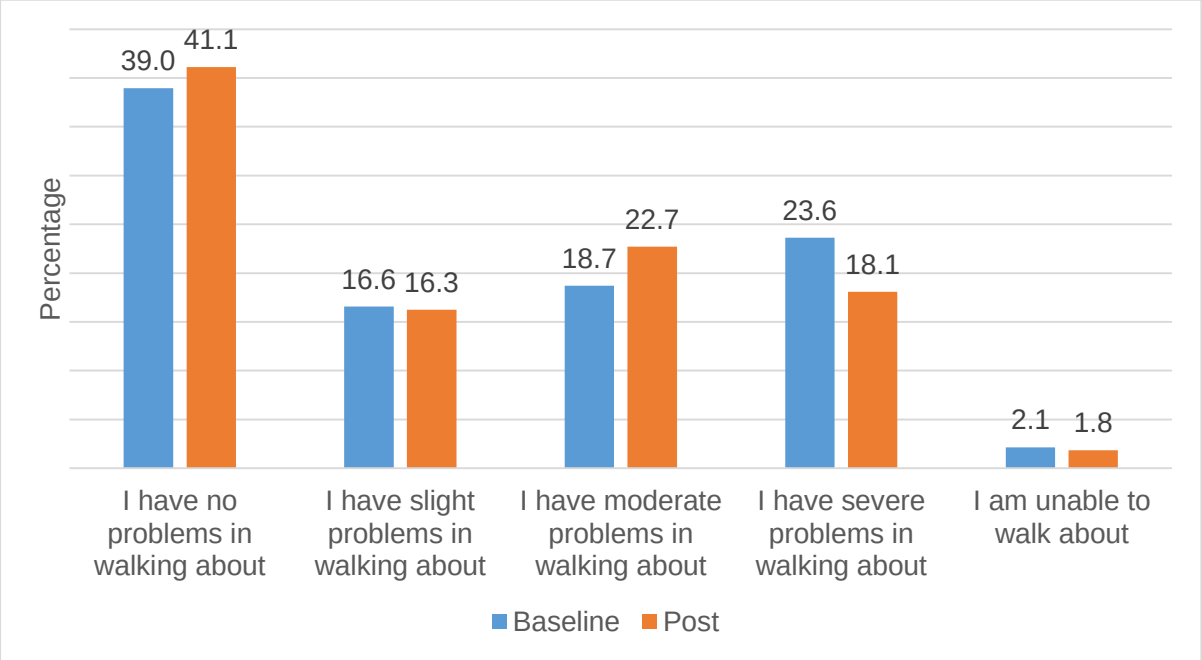
- Mobility (walking about)
- Self care (washing or drying)
- Usual activities (work, study, housework, family, leisure activities)

In addition, participants also indicated their current level of pain/discomfort, and how anxious or depressed they felt today. The following results are based on those individuals who provided complete data at both baseline and post stage.

Mobility (paired, n=326)

The extent to which participants had problems with mobility is shown in Figure 3. The largest proportion of participants at both stages of the research had no problems walking about. However, there was a slight increase in the proportion of individuals reporting no problems from baseline (39%) to post stage (41.1%). The largest decline between time points was found in the proportion of participants who had severe problems walking. Almost one quarter of participants (23.6%) reported having severe problems walking at baseline compared to 18.1% at post stage. The proportion of individuals reporting 'moderate' problems increased from 18.7% at baseline to 22.7% at the post stage.

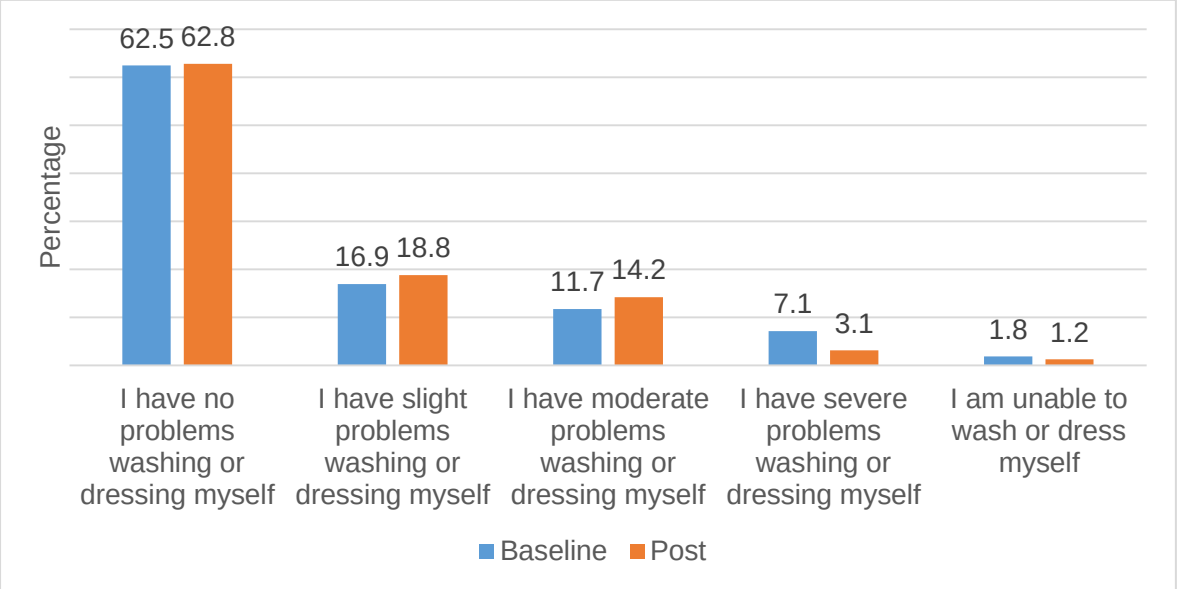
Figure 3: Problems with mobility at baseline & post stage



Self care (paired, n=325)

As Figure 4 shows, there was relatively little change over time in the extent to which participants had problems with self care. The proportion of individuals experiencing moderate problems with self care increased between the 2 time points. At baseline, 11.7% of participants had moderate problems with washing or dressing compared to 14.2% at post stage. There was a decrease over time in the proportion of participants who had 'severe' problems with self care, and those unable to wash/dress themselves (7.1% to 3.1%).

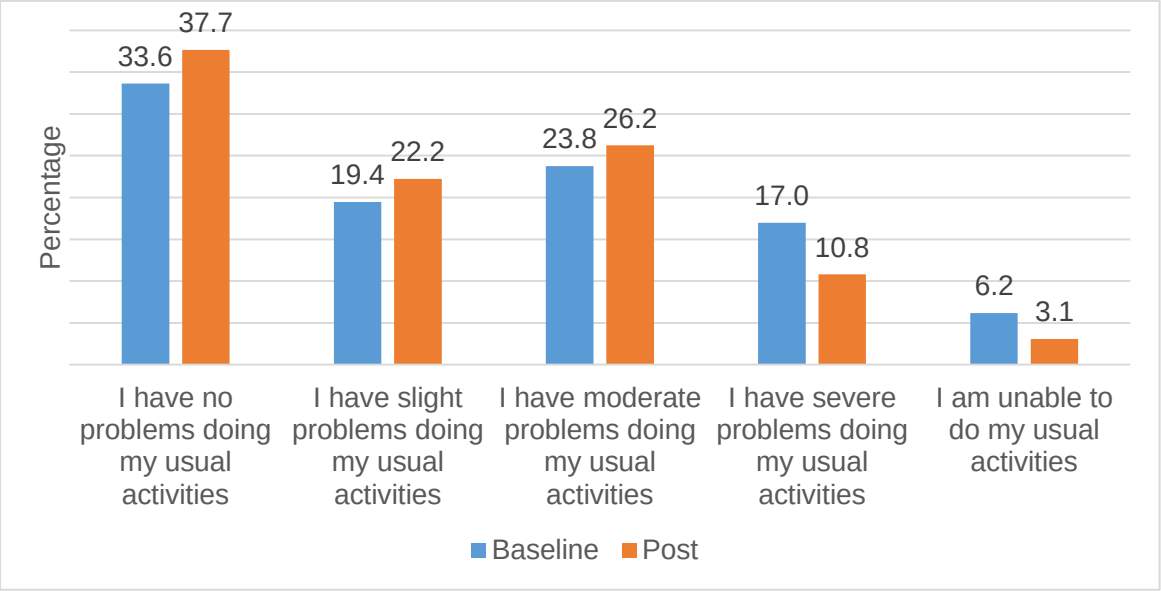
Figure 4: Problems with self care at baseline & post stage



Usual activities (paired, n=324)

As can be seen from Figure 5, the proportion of individuals who had 'severe' problems performing usual activities decreased from 17% at baseline to 10.8% at post stage. There was also a decrease over time in the proportion of participants who were 'unable' to perform usual activities (6.2% to 3.1%). The proportion of individuals reporting 'no problems' increased from 33.6% at baseline to 37.7% at post stage. A larger proportion of participants also reported having 'slight' (19.4% to 22.2%) or 'moderate' (23.8% to 26.2%) problems at post stage than at baseline.

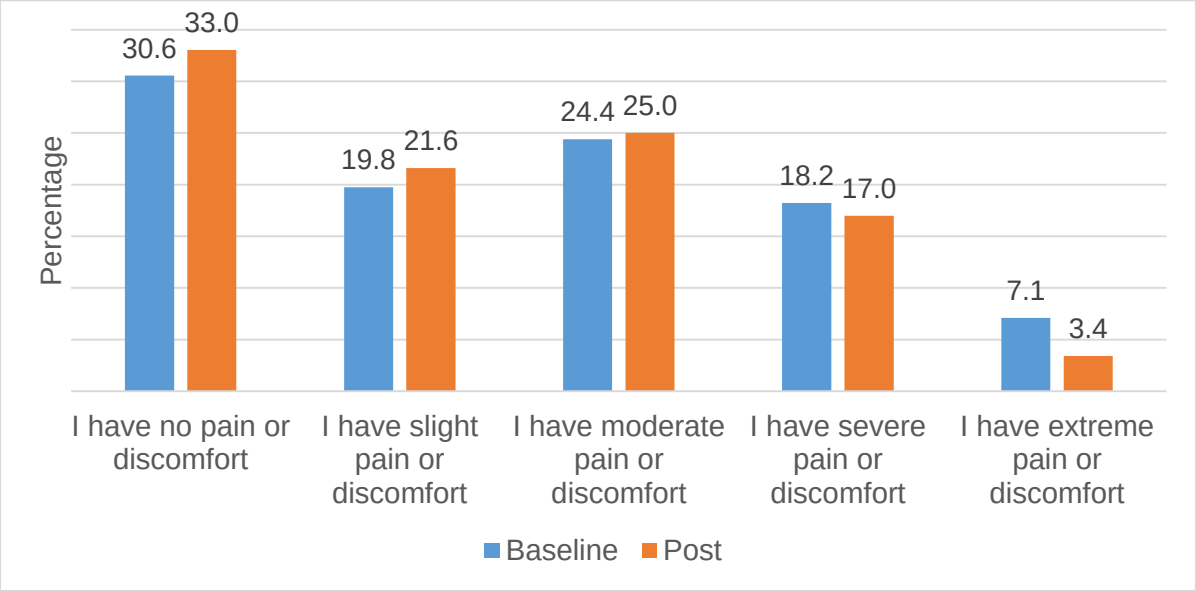
Figure 5: Problems with usual activities at baseline & post stage



Pain/discomfort (paired, n=324)

Figure 6 shows the amount of pain/discomfort reported by participants. The proportion of individuals who experienced no pain or discomfort at all increased from 30.6% at baseline to 33% at post stage. Conversely, there was a decrease over time in the proportion of respondents reporting 'extreme' pain/discomfort. At baseline, 7.1% of individuals reported having 'extreme' pain/discomfort compared with 3.4% at the post stage.

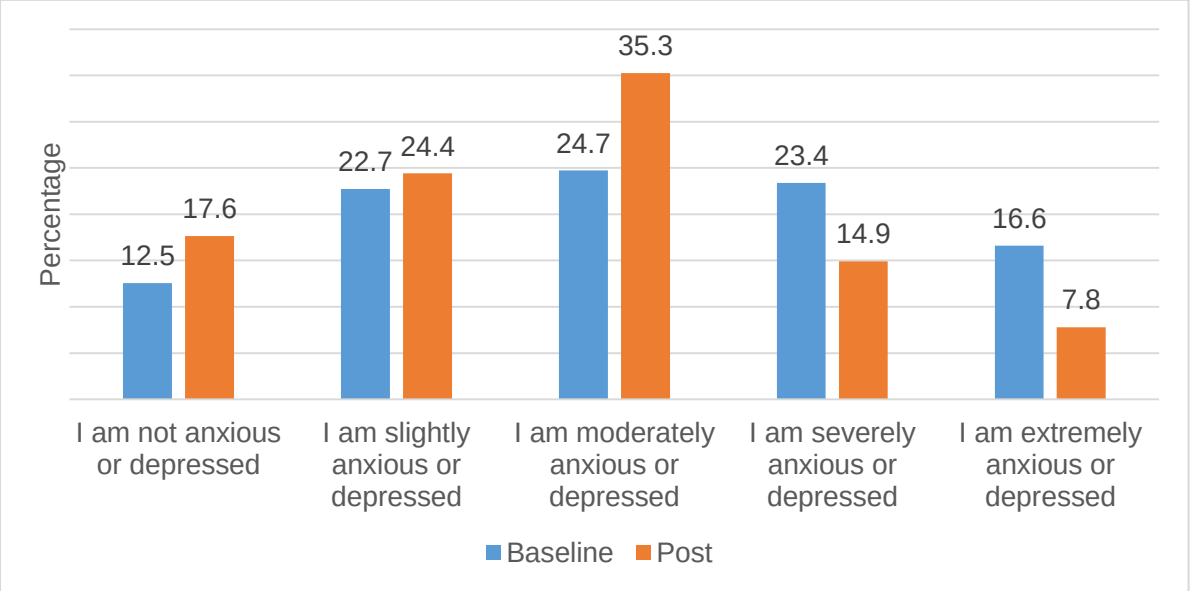
Figure 6: Level of pain/discomfort at baseline & post stage



Anxiety/depression (paired, n=295)

Figure 7 shows sizeable decreases from baseline to post stage in the proportion of participants who reported being severely or extremely anxious/depressed. At baseline, 40% reported being either 'severely' (23.4%) or 'extremely' anxious/depressed (16.6%). At post stage, 22.7% were 'severely' (14.9%) or 'extremely' anxious/depressed (7.8%). Notably, the proportion of individuals feeling 'moderately' anxious/depressed increased from 24.7% to 35.3% from baseline to post stage. Results also showed an increase in the proportion of individuals who were not feeling anxious/depressed across time (12.5% to 17.6, baseline to post stage)

Figure 7: Level of anxiety/depression at baseline & post stage



Additional analyses were conducted using a Wilcoxon Paired Signed-Rank Test to assess whether there was any statistically significant change in individuals' responses from baseline to post for these 5 aspects of health. For the analysis of the responses for pain/discomfort and anxiety & depression, the categories of 'severe' ('severely') and 'extreme' ('extremely') were merged into one combined group.

Analysis revealed that between baseline & post stage there was:

- No significant change in the extent to which participants had problems in washing & dressing (z=-1.38, p=0.17) (n=325)

Conversely,

- The extent to which participants had mobility problems were significantly lower at post stage compared to baseline (z=-2.29, p=0.02) (n=326)
- The severity of problems in doing usual activities at post stage was significantly lower than at baseline (z=-3.45, p=0.001) (n=324)
- Levels of pain at post stage were significantly lower than at baseline (z=-2.5, p=0.12 (n=324
- Levels of anxiety at post stage were significantly lower than at baseline (z=-5.47, p<0.001) (n=295).

Analysis of change in the 5 aspects of health by sex

When changes between stages were analysed by sex the results showed, no significant changes in the severity of the five aspects of health for men. Conversely, there were 3 significant changes for females:

- Females experienced a significant decrease in the severity of problems performing usual activities (z=-3.38, p=0.001, n=207).
- Significant decreases in both pain and anxiety were found for females only (pain z=-2.94, p=0.003, n=208; anxiety, z=-5.75, p<0.001, n=188).

Health rating (n=320)

Participants were asked to rate their health today on a scale of 0 to 100, where 0 was the 'worst health you can image' and 100 was the 'best health you can imagine'.

The analysis revealed a statistically significant improvement in health from baseline to post stage (t=7.64, df=319, p<0.001) (95% CI: 7.09 to 12.02). The average health rating at baseline was 43.27 (SD=20.87) compared to 52.83 (SD=20.83) at the post stage. The size of the improvement in health rating was small to medium (d=0.43).

Out of the 320 participants:

- 191 (59.7%) had an improved health rating score from baseline to post stage
- 76 (23.8%) had a decrease in score
- 53 (16.6%) had no overall change.

Analysis of change in health rating by sex

As can be seen from Table 4, average health rating improved significantly from baseline to post stage for both males and females. The increase amongst males was notably higher than in females, but the analysis suggested that the difference was not statistically significant t=1.34, df=315, p=0.18) (95% CI: -1.63 to 8.6).

Table 4: Health rating by sex

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Males (n=113)	43.5 (19.34)	54.96 (19.47)	11.46 (21.31)	7.49-15.43	5.72 (112)	p<0.001
Females (n=204)	43.51 (21.57)	51.5 (21.51)	7.98 (22.63)	4.86-11.11	5.04 (203)	p<0.001

Analysis of change in health rating by age

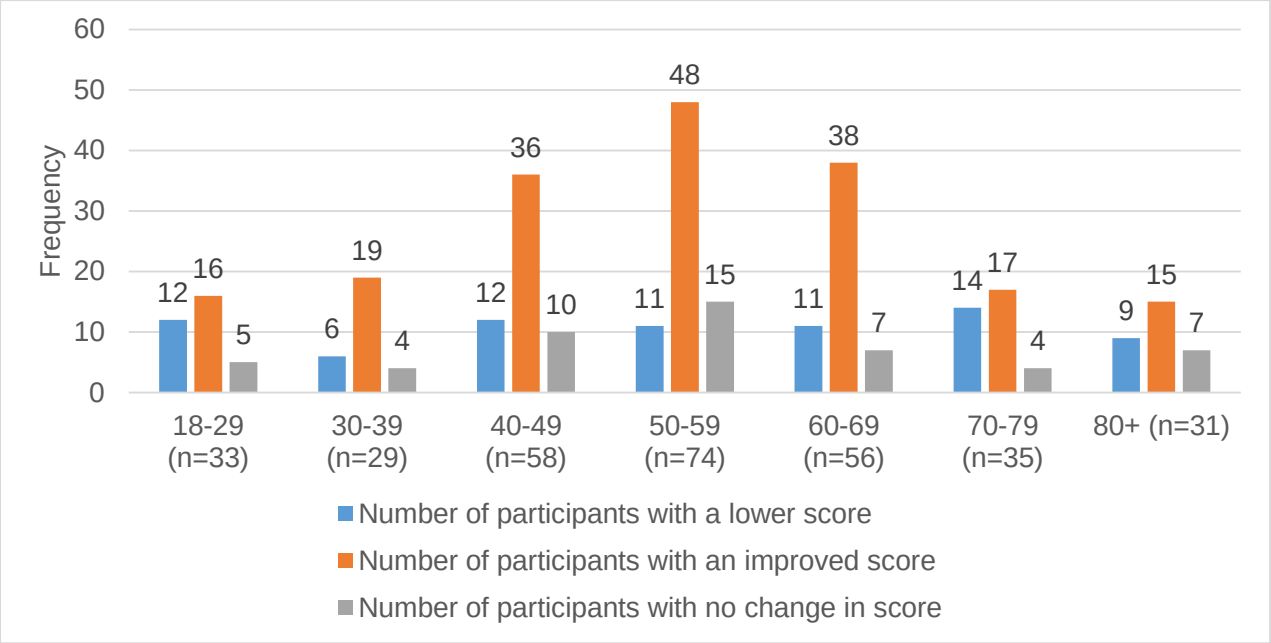
Table 5 shows that average health rating improved significantly from baseline to post stage for both age groupings (under 50 year old and 50 & over). There was found to be no significant difference in average health rating change over time between the 2 groups (t=-0.26, df=314, p=0.79) (95% CI: -5.79 to 4.43). Further analysis also suggested that there was no significant relationship between change in health rating and age (r=-.051, p=0.37).

Table 5: Health rating by age group

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Under 50 (n=120)	44.13 (20.48)	53.15 (22.09)	9.02 (21.53)	5.12-12.91	4.59 (119)	P<0.001
50 & over (n=196)	42.91 (21.16)	52.61 (20.25)	9.7 (22.92)	6.47-12.93	5.92 (195)	p<0.001

Figure 8 provides a breakdown of the number of participants whose health rating increased, decreased or remained the same from baseline to post stage by 10 year age grouping.

Figure 8: Number of participants with increases, decreases or no change in health rating at post stage



Social networks (n=306)

The average 'Social networks' score at baseline was 9.09 (SD=2.68). The highest score was 15 and the lowest was 3. At the post stage, the average score was 9.92 (SD=2.37) with the highest score being 15 and the lowest 3.

The average change in score was 0.83 (SD=2.35) with a 95% confidence interval of .57 to 1.1 which indicates significant improvement in relationships & social networks. A paired t-test also revealed a statistically significant improvement in 'Social networks' from baseline to post stage ($t=6.21$, $df=305$, $p<0.001$). The size of the improvement was small/medium ($d=0.35$).

Out of the 306 participants:

- 155 (50.7%) had an improved 'Social Networks' score from baseline to post stage
- 76 (24.8%) had a decrease in score
- 75 (24.5%) had no overall change.

Analysis of change in 'Social networks' score by sex

Table 6 shows that average 'Social networks' score improved significantly from baseline to post stage for both males and females. Additional analysis revealed there to be no significant difference between males & females in terms of their improvement in 'Social Networks' score ($t=0.93$, $df=302$, $p=0.07$) (95% CI: -.29 to 0.81).

Table 6: 'Social networks' score by sex

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Males (n=110)	8.63 (2.64)	9.61 (2.6)	0.98 (2.62)	0.49 to 1.48	3.94 (109)	p<0.001
Females (n=194)	9.37 (2.66)	10.09 (2.22)	0.72 (2.18)	0.41 to 1.03	4.62 (193)	p<0.001

Analysis of change in 'Social networks' score by age

Table 7 shows average change in 'Social networks' score by age between time points. There was statistically significant improvement from baseline to post stage for both age groupings (under 50 years & 50 years and over). Average improvement in 'Social networks' score was significantly greater in the under 50 years old group than the 50 years & over group (t=2.13, df=302, p=0.03).

Table 7: 'Social networks' score by age

	Mean Baseline (SD)	Mean Post (SD)	Mean Change (SD)	95% CI	T (df)	Sig
Under 50 (n=120)	8.68 (2.5)	9.86 (2.43)	1.18 (2.43)	0.75 to 1.62	5.35 (119)	P<0.001
50 & over (n=184)	9.33 (2.77)	9.93 (2.33)	0.6 (2.35)	0.27-0.93	3.55 (183)	P<0.001

Differences in baseline and post stage responses for the 3 individual questions concerning relationships and social networks

An additional analysis was conducted to examine separately, change in the responses to the 3 questions comprising the 'Social networks' score. The analysis revealed that responses were significantly more positive at post stage than at baseline for all 3 statements:

- I am content with my friendships and relationships (z=-4.83, p<0.001) (n=313)
- I have enough people I feel comfortable asking for help at any time (z=-4.32, p<0.001) (n=312)
- My relationships are as satisfying as I would want them (z=-3.51, p<0.001) (n=309)

Table 8: shows the percentage responses to each of the 3 statements related to relationships and social networks at baseline and post stage.

Table 8: percentage responses to each of the 3 relationships & social networks statements

	Baseline (%)					Post stage (%)				
	SA	A	N	D	SD	SA	A	N	D	SD
I am content with my friendships and relationships (n=313)	8.9	33.5	22	25.6	9.9	10.5	40.9	26.5	18.2	3.8
I have enough people I feel comfortable asking for help at any time (n=312)	11.2	31.7	19.2	26.9	10.9	12.8	45.2	15.4	20.8	5.8
My relationships are as satisfying as I would want them (n=309)	6.5	32.4	22	26.9	12.3	7.8	39.2	21	26.2	5.8

SA=Strongly agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly disagree

Analysis by sex of differences in baseline and post stage responses for the 3 individual questions concerning relationships and social networks

When changes between stages were analysed by sex the results showed that amongst males the responses were significantly more positive at post stage than at baseline for two statements.

- I am content with my friendships and relationships (z=-3.37, p=0.001) (n=112)
- My relationships are as satisfying as I would want them (z=-2.96, p=0.003) (n=110)

Amongst females, responses were significantly more positive at post stage than at baseline for:

- I am content with my friendships and relationships (z=-3.43, p=0.001) (n=199)
- I have enough people I feel comfortable asking for help at any time (z=-3.76, p<0.001) (n=198)

Analysis by age of differences in baseline and post stage responses for the 3 individual questions concerning relationships and social networks

Analysis revealed that the responses in the under 50 year olds group were significantly more positive at post stage than at baseline for all 3 statements.

- I am content with my friendships and relationships (z=-3.93 p<0.001) (n=120)
- I have enough people I feel comfortable asking for help at any time (z=-3.1, p=0.002) (n=121)
- My relationships are as satisfying as I would want them (z=-3.28, p=0.001) (n=120)

Amongst the 50 years old and older group, responses were significantly more positive at post stage than at baseline for:

- I am content with my friendships and relationships (z=-2.93, p=0.003) (n=190).
- I have enough people I feel comfortable asking for help at any time (z=-3.06, p=0.002) (n=188)

However, between baseline and the post stage there was no significant change in responses to the statements:

- My relationships are as satisfying as I would want them (z=-1.56, p=0.12) (n=187).

Use of primary care services

Use of GP services: baseline (n=385)

At baseline, around half of participants (48.6%) went to the GP less than once every month and a further 30.6% visited every 3 or 4 weeks. Fifteen percent (15.1%) went every 2 weeks and 5.7% visited at least once a week.

Use of GP services: post stage (n=345)

At post stage, individuals were asked about their use of GP services since participating in Connect for Health. A majority of participants (53.3%) reported using GP services about the same. Notably, 27.2% of participants had used services less, with 5.5% visiting ‘a lot less’ and 21.7% a ‘bit less’. Conversely, 19.4% reported increased GP use, with 4.9% visiting ‘a lot more’ and 14.5% a ‘bit more’.

Table 9 provides a breakdown of GP service use across the 2 time periods. It shows that: Out of the 18 individuals who were visiting the GP at least once a week at baseline, eight were using services about the same amount at post stage. Four were using services less, and six more.

Out of the 50 individuals who were visiting the GP at least once a fortnight at baseline, 26 still did so at post stage. Sixteen had increased frequency of visits and eight had visited less. Out of all 68 individuals who visited the GP either weekly or fortnightly at baseline, 12 used GP services less at post stage.

26 out of the 145 individuals (17.93%) who were visiting the GP less than once a month at baseline reported using GP services more at the post stage. Twenty used GP services ‘a bit’ more and six ‘a lot’ more.

Out of 85 individuals who used GP services a ‘bit less’ or a ‘lot less’ at post stage, 46 reported visiting their GP less than once a month at baseline. A further 27 reported visiting their GP every 3 or 4 weeks at baseline.

Table 9: GP service use at baseline and post stage

		Baseline			
Post stage		GP visit at least once a week (n=18)	GP visit every 2 weeks (n=50)	GP visit every 3 or 4 weeks (n=101)	GP visit less than every month (n=145)
	GP services used a lot more (n=17)	2	4	5	6
	GP services used a bit more (n=42)	4	12	6	20
	GP services used about the same (n=170)	8	26	63	73
	GP services used a bit less (n=69)	3	6	21	39
	GP services used a lot less (n=16)	1	2	6	7

Figure 10 provides a breakdown of GP usage at post stage by sex. Analysis revealed there to be no significant sex difference in the use of GP services at the post stage (U=13202.5, p=0.66).

Figure 10: GP usage at post stage by sex

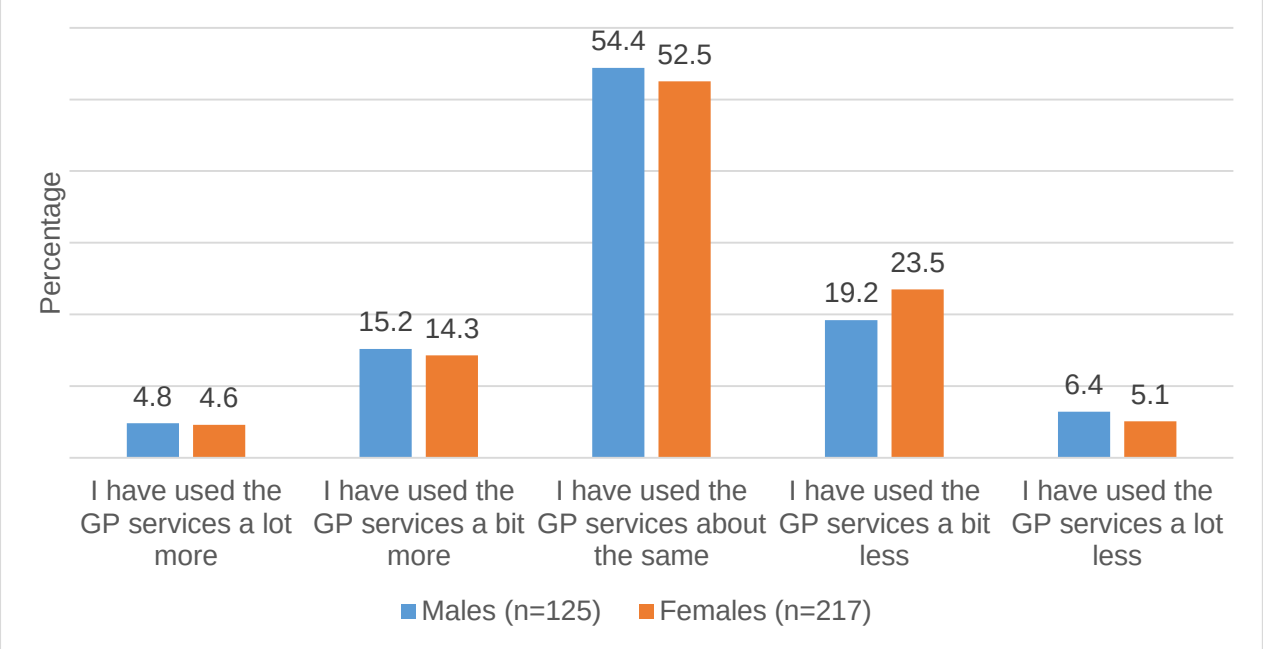


Figure 11 provides a breakdown of GP usage at post stage by age. Analysis revealed there was a significant age difference in the use of GP services at the post stage (U=10963, z=-3.44, p=0.001), with participants 50 years and over using the GP services more at post stage compared to the under 50's.

Figure 11: GP usage at post stage by age