



Final Report

GROW WELL SOCIAL PRESCRIBING PILOT EVALUATION

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Background and Context

Demand for healthcare is increasing globally. In times of austerity the Welsh health and care system is struggling to balance increased demands with reduced expenditure [1]. The health and social care budget in Wales is almost 50% of the devolved budget [2]. In Wales, people aged 65 and over are projected to increase by 37% in the next 20 years [3], with the highest rates of long-term limiting illness in the UK, the most expensive facet of NHS care [4], there is a more prescribed medication in deprived areas coupled with a higher prevalence for mental health problems [5] and primary care is also in crisis, with up to a third of GPs wanting to leave the profession [6].

Around 20% of patients consult their GP for psychosocial problems [7]. It has been argued that psychosocial issues and long-term conditions can be better managed in the community [8]. Social prescribing is 'A mechanism for linking patients with non-medical sources of support within the community' [9] which can offer an alternative to the traditional medical models and reduce the burden on the NHS.

Despite universal access to health services, poor health remains linked to social and economic disadvantage resulting in health inequalities [10,11]. Reducing health inequalities is a key priority for Welsh Government [12]. Linking with communities is a way to respond to this. Community activities can improve social capital and reduce isolation [13]. Increased levels of community and social participation has a positive impact on health behaviours, physical and emotional health and self-confidence, especially among disadvantaged populations [14]. NICE guidance endorses community engagement as a strategy for health improvement [15].

Policy & Legislative Context

The Welsh Government has put in place legislation, the Well-being of Future Generations (Wales) 2015 and Social Services and Well-being (Wales) 2014 Acts and a National Primary Care Plan, recognising the role of non-clinical support as a key part of a social model of health and well-being. There is currently under development a social prescribing pilot scheme aiming to improve the mental health support available to people with low to moderate mental health issues which Welsh government are committed to delivering.

Social Prescribing

Social Prescribing can be for a range of activities e.g. arts, leisure, education, stress management, and volunteering. Accessing a broad range of community-based services can help patients self-manage long-term chronic conditions and reduce health inequalities particularly for vulnerable and socially deprived groups who face barriers to accessing appropriate health services [16,17]. Benefits for patients accessing social prescribing include; increased self-esteem, confidence, sense of control, empowerment, improved psychological, mental well-being and mood and reduced symptoms of anxiety and depression.

Further benefits include reducing the inappropriate prescribing of antidepressants. Patients can become more active in managing their conditions resulting in less reliance on the NHS, particularly for marginalised groups such as mental health service-users and older adults at risk of social isolation [18,19].

Gardening and Health and Wellbeing

There is good evidence that direct interaction with nature results in positive health benefits for people [20]. Daily contact with nature has long-lasting benefits for health, including anxiety and depression [21] diabetes, and obesity [22], circulatory and heart disease [23], and longevity [24] It is becoming more recognised that regular contact with nature can promote positive health behaviours and that a regular contact with nature is a form of preventive medicine [25].

Nature in cities can play a key role in improving societies health and wellbeing [26] one way to integrate nature into cities is through community gardens. Gardening is a popular leisure activity in the UK with 27 million people almost 40% of the total population actively participating in gardening [27]. A recent meta-analysis showed that there is a significant positive effect of gardening on health outcomes and a regular dose of gardening can improve public health [28].

Innovate to Save

Innovate to Save (I2S) is funded by Welsh Government developed and delivered by Y Lab (a public service innovation lab, run in partnership by Cardiff University and Nesta). The I2S fund provides financial and non-financial support to Welsh public services to prototype and test innovations to improve services. The I2S fund operates alongside the Welsh Government Invest to Save fund, a repayable, interest-free, loan which successful I2S projects can apply for.

Fifty applications were received for I2S, twelve of these involved SP across Wales. Eight projects were selected from the two stage (application & interview) process. Of these two were social prescribing pilots in primary care supported by Cardiff and Vale Health Board (CVHB) and its South West Cardiff (SWC) GP Cluster, one of which is the Grow Cardiff a community garden social prescribing project.

Grow Cardiff Gardening Social Prescribing Pilot

Thirty-one participants took part in the Innovate to Save Pilot (I2S) Grow Cardiff Gardening pilot from September 2017 to March 2018. Patients with low level anxiety and depression and psychosocial issues identified by GP's and practice staff in 3 surgeries in the SWC GP Cluster were referred directly to a 6-month SP pilot in a local community garden or a garden attached to the surgery. Patients were supervised by a gardener and attended regular gardening sessions once a week.

Evaluation

A mixed methods evaluation of the Grow Cardiff Social Prescribing Pilot was undertaken. Data was collected and provided by the project team and submitted to the research team for analysis. This data included:

Qualitative data:

1. Two focus groups with patients who attended the gardening sessions.

Quantitative data:

1. Pre (T1) and post (T2) Wellbeing survey – collected by the gardeners (anonymised with coded unique patient numbers).

Wellbeing Survey Analysis

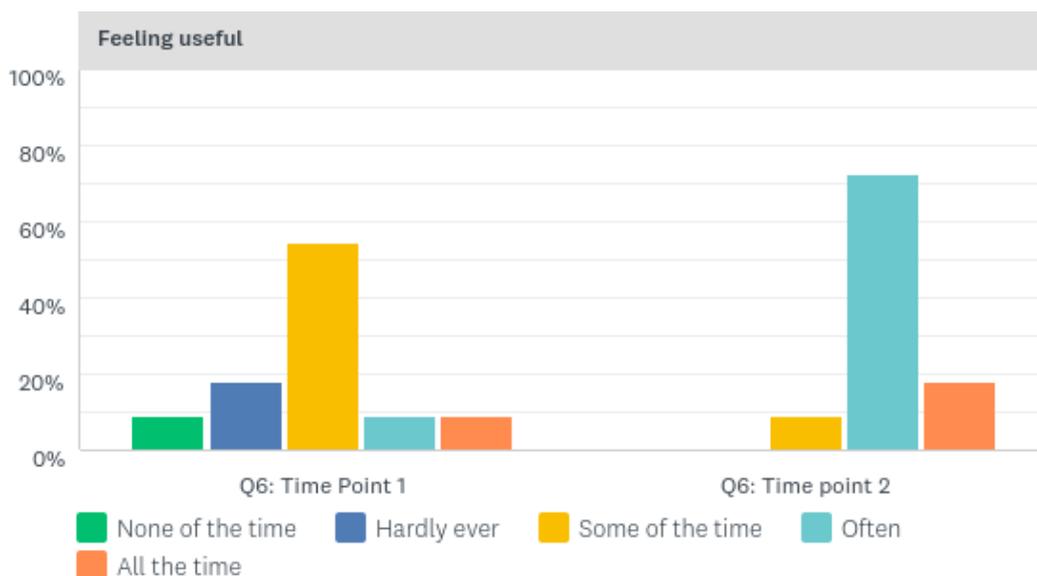
A 25-item questionnaire measuring psychological wellbeing (Edinburg and Warwick Wellbeing Short Scale), loneliness and isolation (UCL Loneliness Scale), self-rated management of health conditions (Self-efficacy for management of Chronic Disease scale) and self-reported levels of physical activity, fruit and veg intake and average hours of sleep over the previous week(s) was taken at T1 initial assessment T2 their final session.

Results

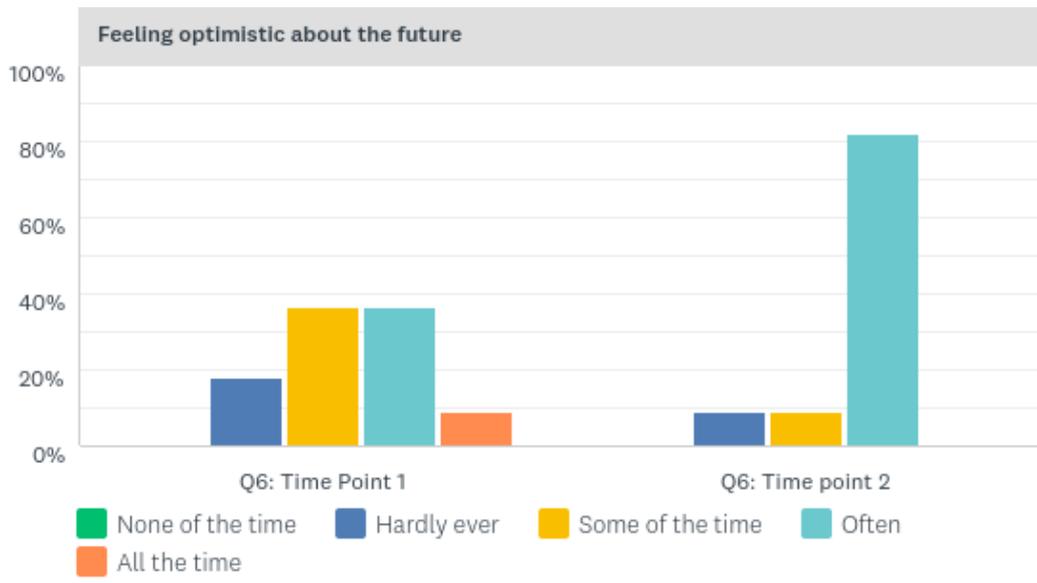
Eleven participants completed the questionnaires at T1 and T2. Graphical representations of the results are presented below.

1. Psychological Wellbeing

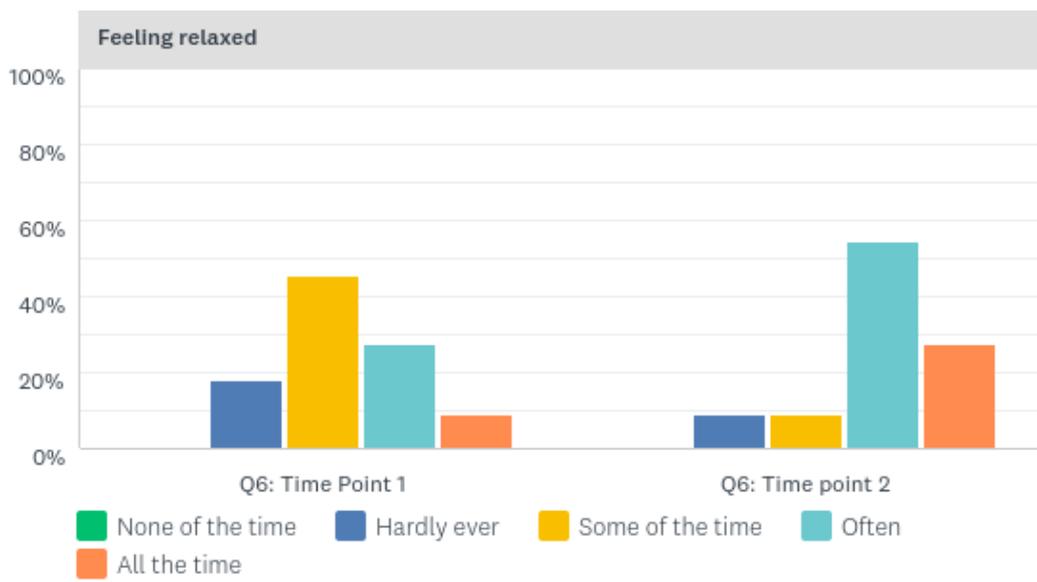
Q1: In the last two weeks, I've been feeling useful



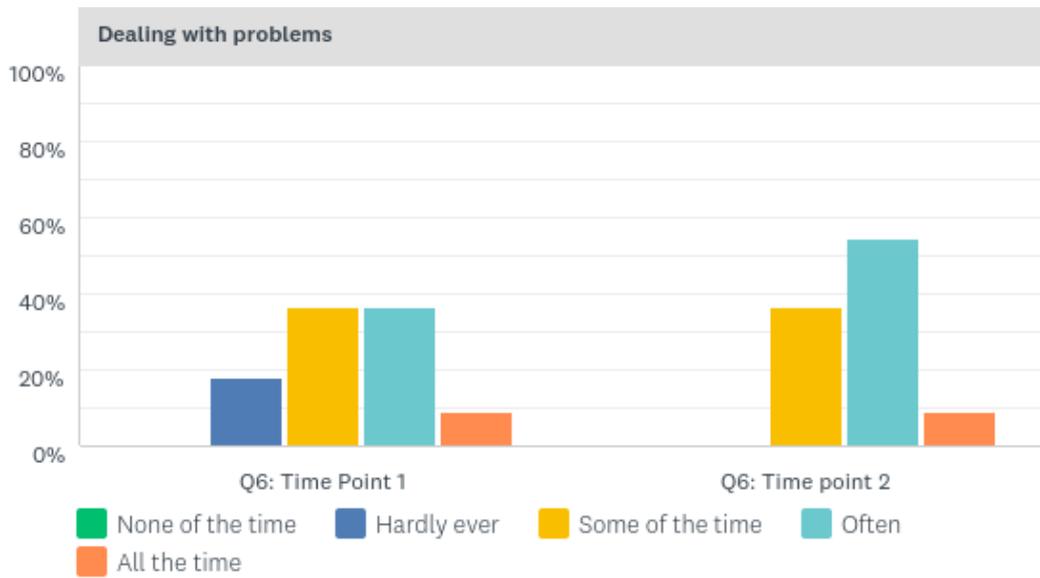
Q2: In the last two weeks, I've been feeling optimistic about the future



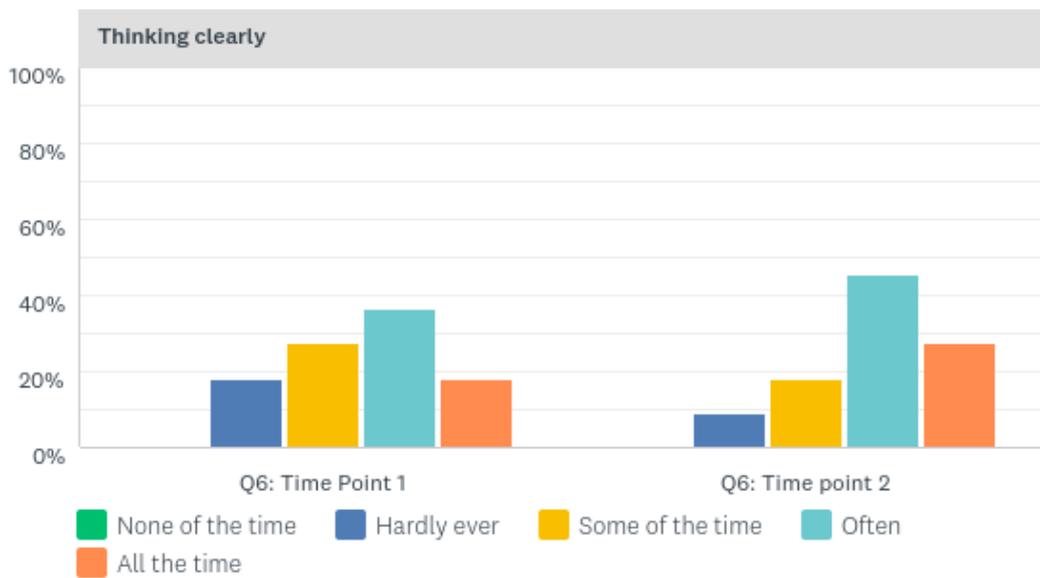
Q3: In the last two weeks, I've been feeling relaxed



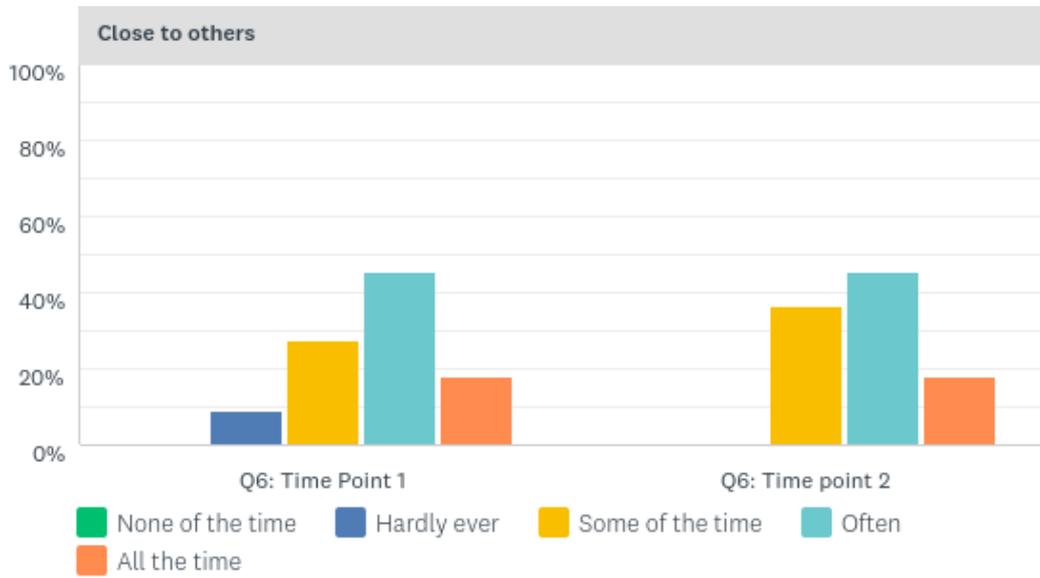
Q4: In the last two weeks I've been dealing with problems well



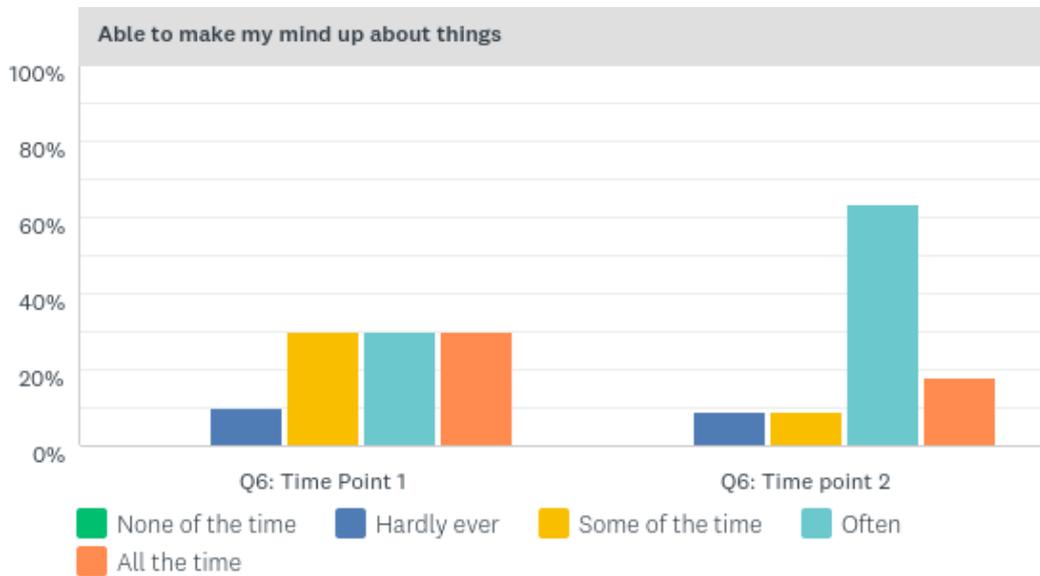
Q5: In the last two weeks, I've been thinking clearly



Q6: In the last two weeks, I've been feeling close to other people

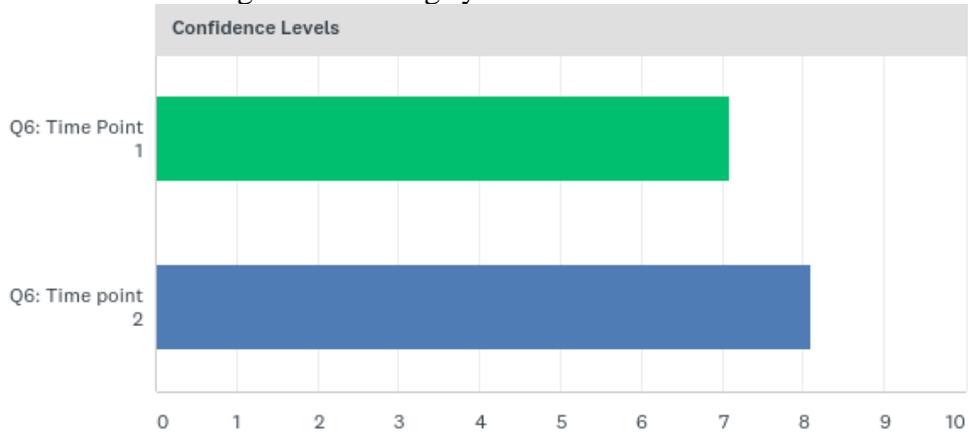


Q7: In the last two weeks, I've been able to make my own mind up about things

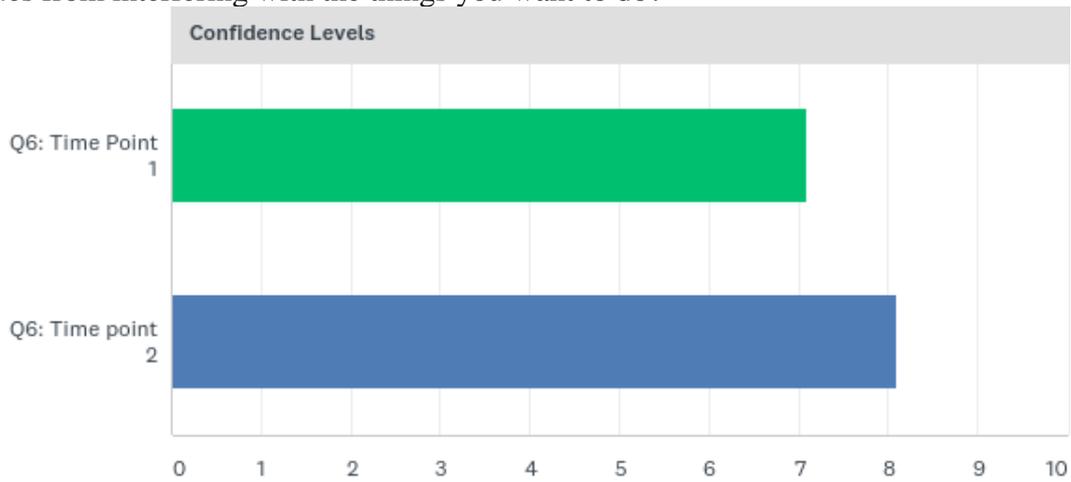


2. Self-Efficacy for Management of Conditions

Q1: How confident are you that you can keep the physical discomfort or pain of your health issues from interfering with the things you want to do?



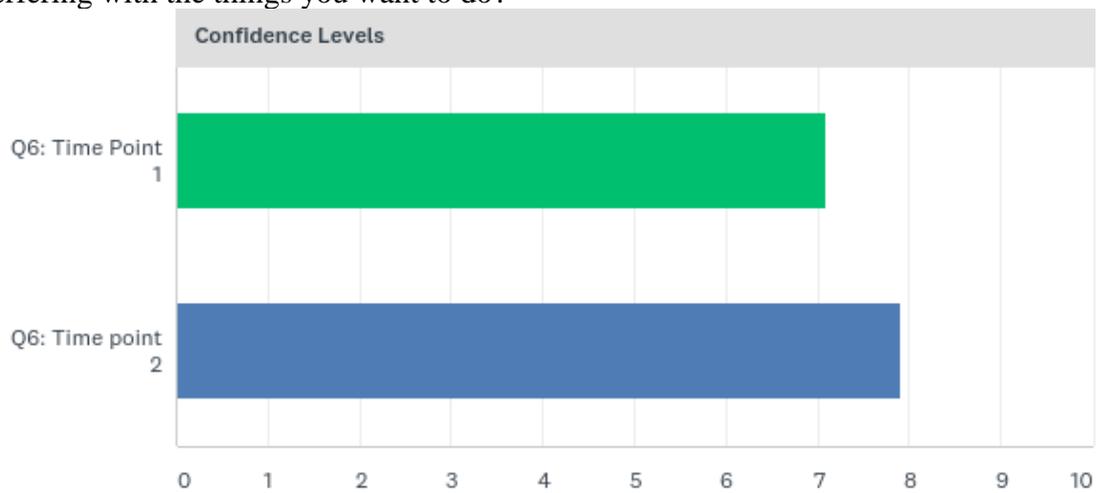
Q2: How confident are you that you can keep the physical discomfort or pain of your health issues from interfering with the things you want to do?



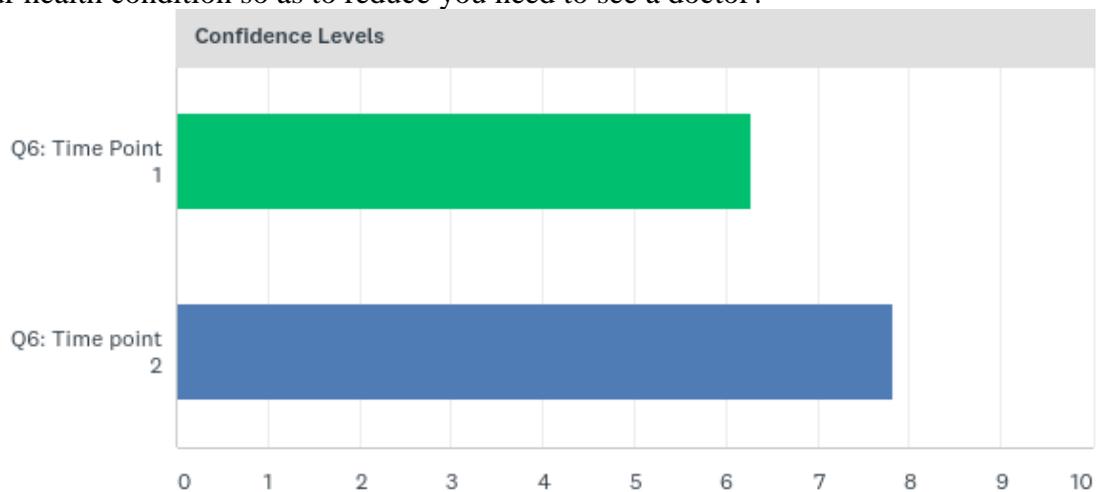
Q3: How confident are you that you can keep the emotional distress caused by your health issues from interfering with the things you want to do?



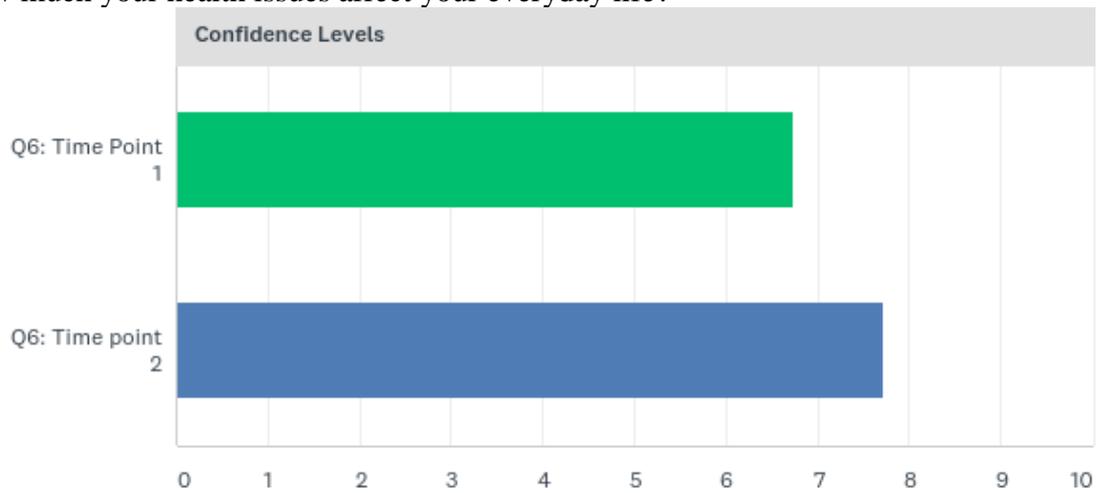
Q4: How confident are you that you can keep the fatigue caused by health issues from interfering with the things you want to do?



Q5: How confident are you that you can do the different tasks and activities needed to manage your health condition so as to reduce you need to see a doctor?

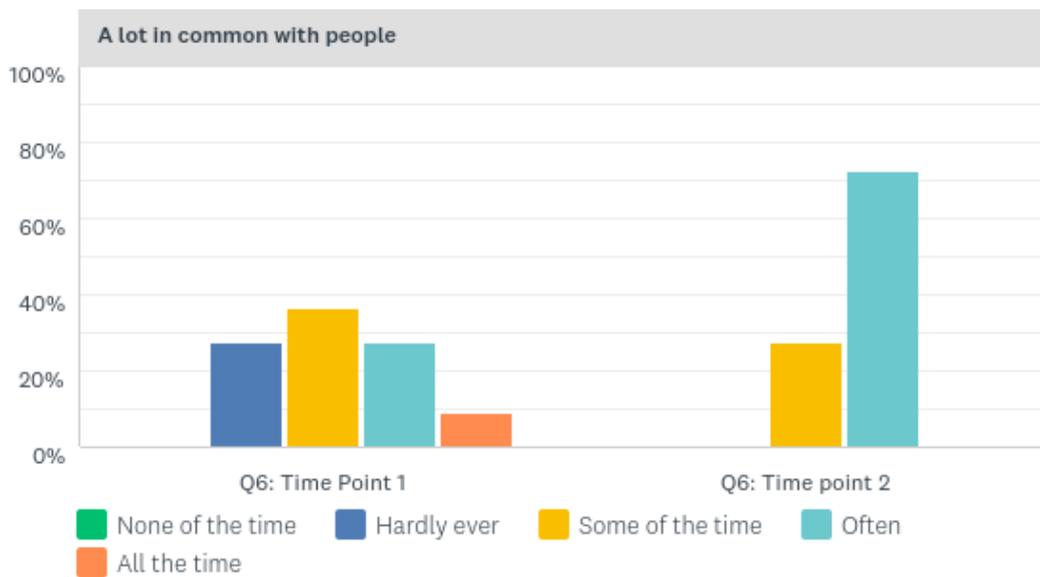


Q5: How confident are you that you can do things other than just taking medication to reduce how much your health issues affect your everyday life?

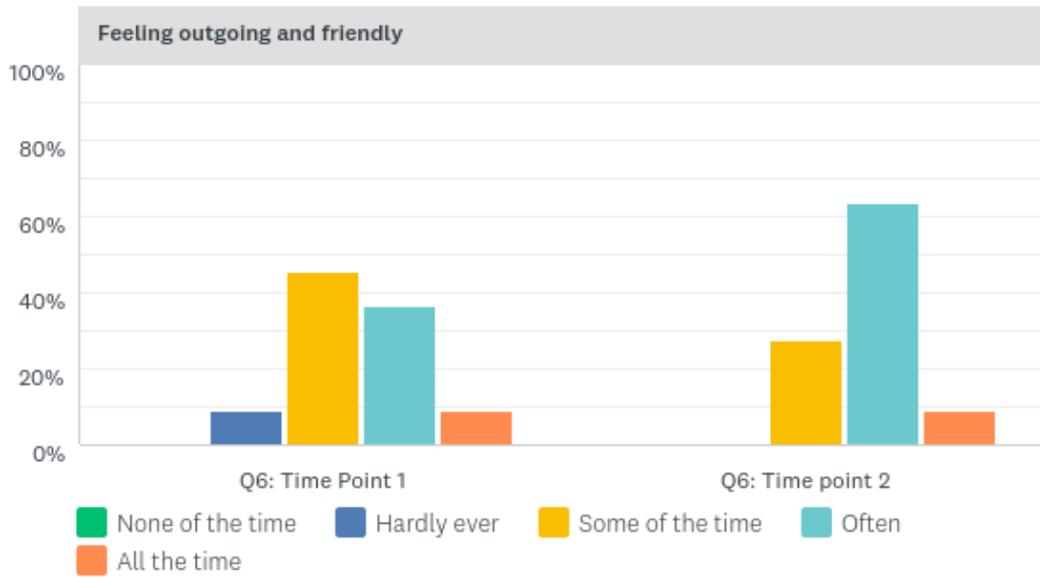


3. Loneliness and Isolation

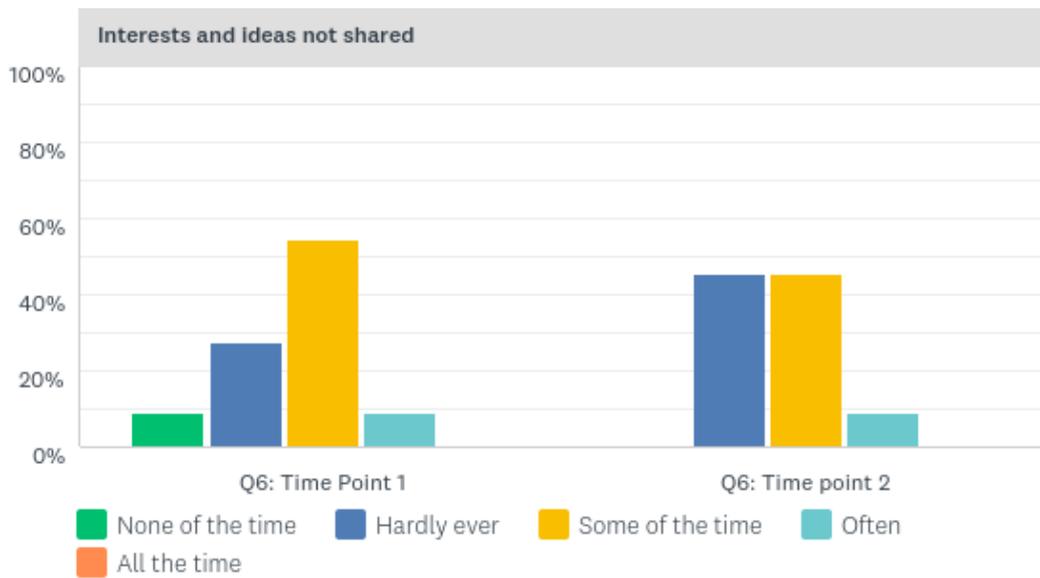
Q1: How often do you feel that you have a lot in common with the people around you?



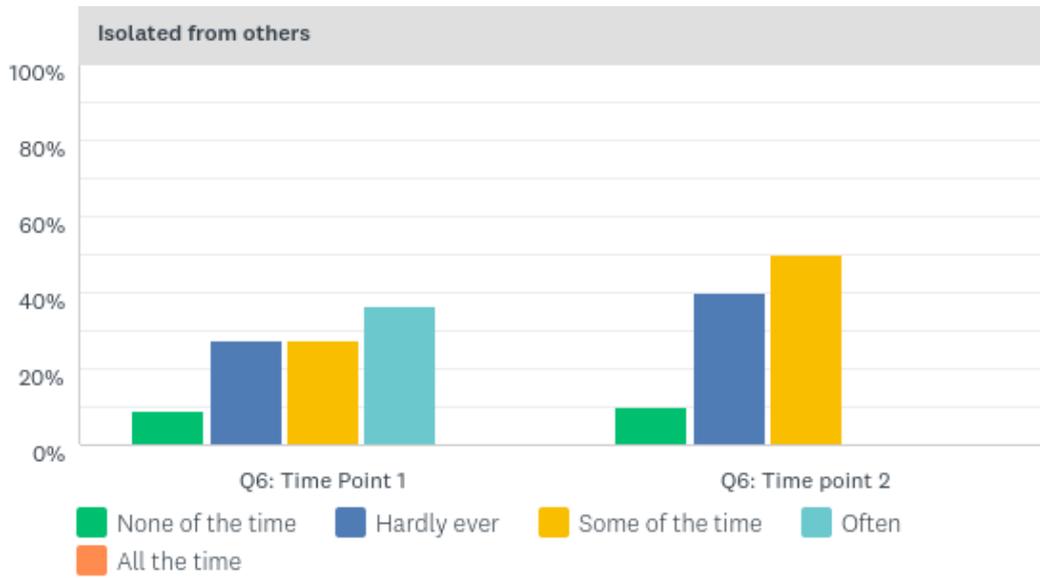
Q2: How often do you feel outgoing and friendly?



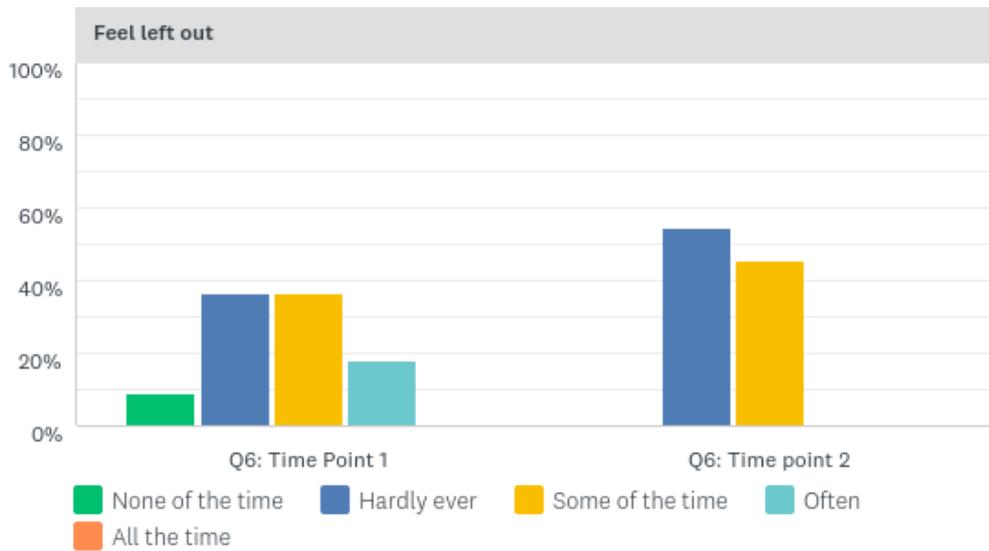
Q4: How often do you feel that your interests and ideas are not shared by those around you?



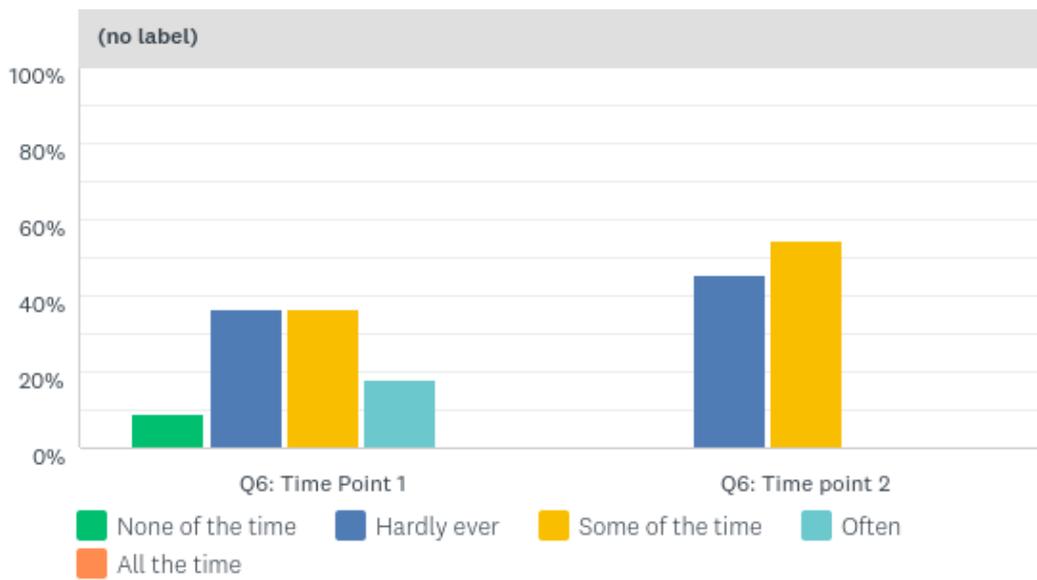
Q5: How often do you feel isolated from others?



Q6: How often do you feel left out?

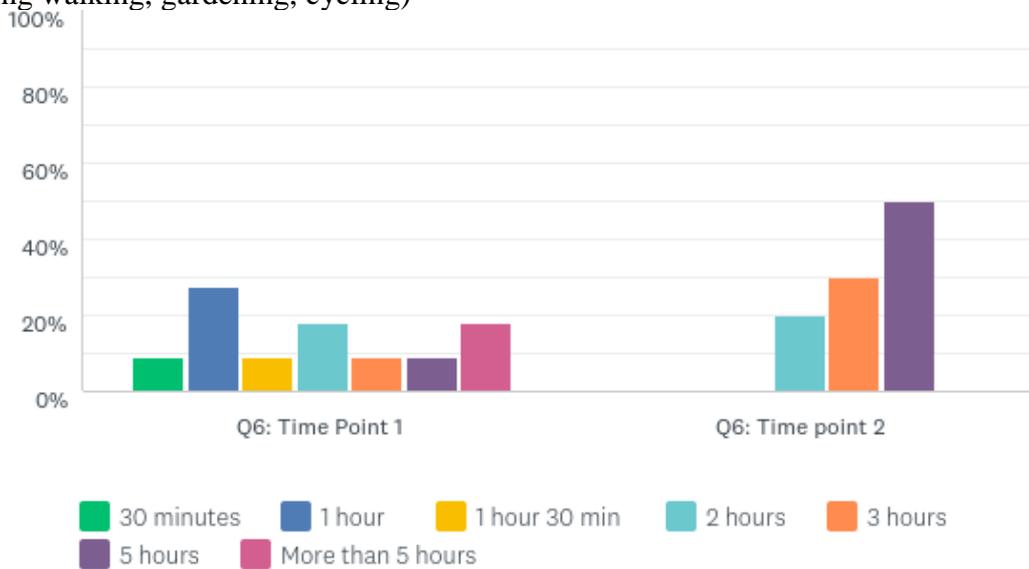


Q7: How often do you feel you lack companionship?



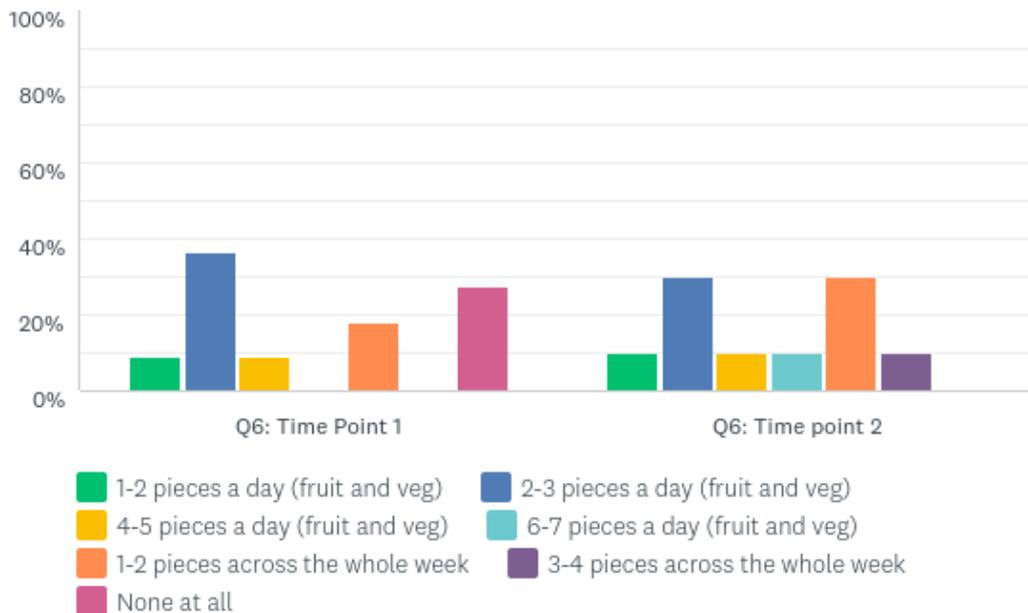
4. Levels of Physical Activity

Q1: How much physical exercise have you done in the last week? Think about your week - (including walking, gardening, cycling)



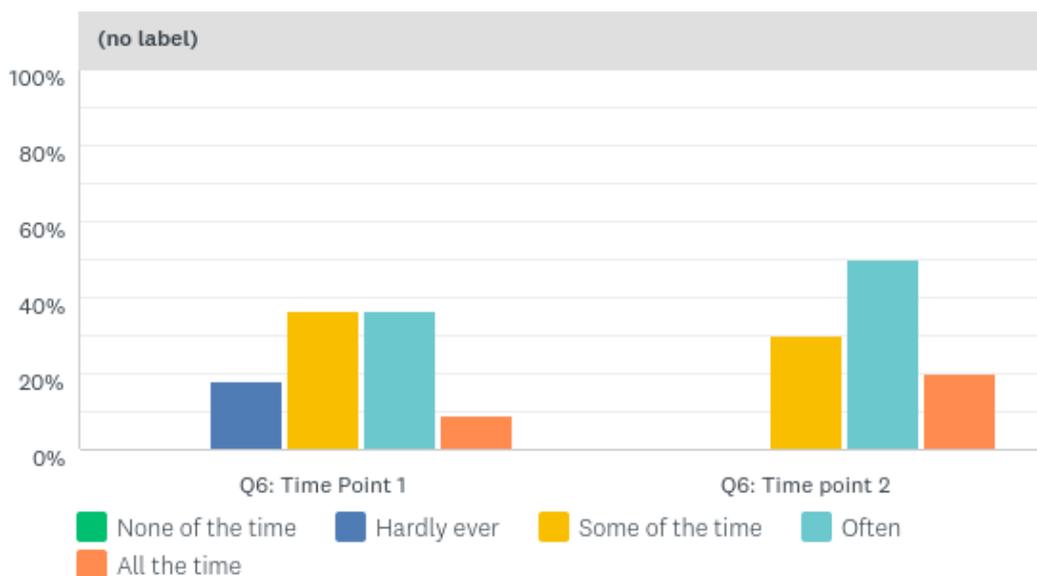
5. Number of Fruit and Vegetables Consumed

Q1: During the past 2 weeks How often do you eat fruit or vegetables? What would your average daily amount be?



6. Sleep

Q1: Thinking back over the last two weeks how often do you think you will have slept for the recommended 6-8 hours without interruption?



Discussion

Results suggest that gardening pilot does improve participant's psychological wellbeing, with them feeling more relaxed, useful, optimistic about the future and able to make their mind up about things than at the beginning of the intervention. Participants scores suggest they were more confident in managing the physical and emotional impact of their condition on completion of the intervention which reduced their perceived need to see the doctor and find alternative strategies other than medication to manage their condition.

Participants at the end of the intervention were more socially connected to others feeling they had more in common with others more often, with more shared interested and were more optimistic and friendly. Participants reported they felt less left out and had more companionship at the end of the intervention. Results also suggest there was a marked increase in physical activity and fruit and vegetables consumption and sleep quality at the end of the intervention.

Limitations

Caution must be drawn on interpreting the findings as the participant numbers (n=11) who completed the survey at T1 and T2 are low and results show descriptive statistics (percentages and mean scores) only, further meaningful statistical analysis to demonstrate any correlations would be difficult given the small number of responses. In addition, as this wasn't a controlled study design, other variables that weren't controlled for which could have influenced the results, such as time of year and general improvements in health condition over time.

Conclusions

Despite the methodological limitations of this small pilot study these findings suggest that the gardening intervention could be a useful intervention for patients presenting to the GP with low level anxiety and depression in helping them improve their psychological wellbeing, social connectedness, confidence in managing their condition and improve their general physical health by helping them be more active, consume more fruit and vegetables and sleep better.

Qualitative Data Analysis

Two focus groups were conducted with participants by the gardener (n=8). The audio recordings were transcribed verbatim and transcripts were subject to thematic analysis. The following themes were identified.

1. Convenient linked to surgery & other activities

Participants described how the gardens were convenient to access as they were either attached to their surgery or to a local community centre, which meant they could access the other programmes provided.

“Yeah, through Breaking the Mould because we used to do morning sessions in here with the arts and everything and then we would go outside in the garden.”

“Men in sheds... Yeah, and then I come over outside, I came here first”

“I’m happy where it is, it’s not too hard to get too, there’s bus services here.”

2. Positive Impact

Participant feedback was overwhelmingly positive. They found it a positive and fun experience and something they looked forward to.

“Fabulous.”

“Wonderful, amazing.”

“I know, I look forward to the weekends, ready for Monday.”

“I had fun.”

“I found it really good and I mean I just came in to help to see if I could help other people and hopefully I’ve been able to do things.”

3. Learning New Skills

The participants enjoyed learning new skills, gaining new knowledge about gardening, and doing things they had never done before. They described the gardeners as really knowledgeable and encouraging.

“Doing activities and craft works that we’ve never done before.”

“Well it’s the first time for me to do gardening.”

“Learning what to grow and when.”

“You did really well. I loved that, there’s a video of us and that was summer time wasn’t it?”

“He’s quite knowledgeable isn’t it?.. He talks and I’m just listen and I’m taking it all in”

“And the same as me. I learn a lot of things. This country is new for me and I’m happy with it really.”

4. A Place of Calm Relaxation

The participants described the gardens as a place of calm, where they could get away from they could relax and get away from it all.

“The painting I do, I could paint all day, I just love it.”

“Having our hour of quiet.”

“I must I love our meal out in the garden.”

“I find it so relaxing, yeah”

“I just like being quiet, I’m not really used to big crowds of people so”

5. Reduced Social Isolation

Strong friendships were formed in the gardening group which improved a feeling of connectedness to each other and reduced social isolation. The positions of the gardens also meant they felt more connected and integrated into the local community.

“Yes, and we used to come every week and then since X went back to full time, since him going back to school full time in September but I enjoyed it so much I carried on. I love it.”

“It’s our family, it’s like a family.”

“I found it very helpful with different people socialising otherwise I’m in the home on my own.”

“Yeah, it is a good place to be honest. There is community here. If it is in open place it would be lovely.”

“You’ve got the people going back and forth, the traffic, the children going back, and the parents going to the school and things and they see what’s going on, that’s what really brought them all in last year wasn’t it, because it was on the main road. Also you have the military group from across the road came over didn’t they?”

6. Sense of Purpose & Achievement

Attending the weekly gardening sessions gave the participants a sense of purpose and achievement. It gave them a reason to get out of the house or bed in the morning. The Royal

Horticultural show entry gave them something to aim for. For some it brought back happy memories for family time or previous jobs.

“Getting out of the house.”

“Getting out of bed isn’t it”

“I used to be with the council, with the parks and I lost interest. We haven’t got a garden now and I came from Men’s Shed and then I was here and then I come round to do the gardening group”

“I enjoyed doing a bit of gardening with the company, in the group. I have a garden at home, my mum used to grow, and I’m on my own I do it myself. I really appreciate it”.

“I think it was good last summer when we managed to have all the strawberries and all the fruit and veg and all the children were walking past and the mothers called in and showed the children those things. They like to look at the bees and all the insects. That was a really good time, I mean this time of the year it is very difficult isn’t it, and that’s why it’s been good having this thing to aim for the show. It’s given us a target to aim for which I think is good.”

“It’s amazing what you achieved in the tiny space, how much produce”

Economic Evaluation

The Grow Cardiff Gardening pilot with 31 participants was delivered over a 5-month period. However, there was incomplete data collected with insufficient data available for 14 participants and only complete data available for nine participants. 10 participants commenced the project in September 2017 and one participant joined in November 2017. Dates of commencing the intervention and leaving dates not available for three participants.

Demographic information:

Gender: The project had 7 female participants and 6 male participants (Data not available for one participant)

Age: youngest participant was 24 years old and oldest participant was 76 years old with an average age of 54 years old. (Data only available for 11 participants)

Lifestyle: 6 non-smokers and 3 smokers (smoking 9-20 per day). At completion of the project March 2018, 7 participants were non-smokers and 2 participants remainder smokers. (Data only available for 9 participants)

Referring condition: Depression and anxiety was the referring condition for 7 participants, mania and psychosis for one participant and diabetes for one participants. (Data only available for 9 participants)

Healthcare usage evaluation

The total number of GP appointments for the nine participants prior to clients participating in the Grow Cardiff Gardening pilot was 96 appointments in the previous 12 months with an average of just under one GP appointment per month per participant or an average of 10.66 appointments per participant per annum as shown in Table 1 below. Participation in the Grow Cardiff Gardening pilot the total number of GP appointments for the 9 participants was 60 appointments over the 5 months of the intervention. This equates to an average of 6.66 GP appointments and 4 prescriptions dispensed per person over the five-month period of the intervention.

Table 1: GP appointments and prescriptions dispensed pre-GROW intervention and over 5 months of the intervention.

	N	Total for 12 months pre-intervention for all participants	Total monthly average for all participants pre-intervention	Average per participant per annum pre-intervention	Total for all participants over 5 months of intervention	Average per participant over 5 months of intervention	Variance in healthcare usage
GP appointments	9	96	8	10.66	60	12	36
Prescriptions dispensed	9	62	5.16	6.88	36	4	26

Cost analysis pre-intervention and cost savings over the 5 months of intervention

To examine the estimated variance in cost outcomes associated with participating in the Grow Cardiff Gardening pilot along with the variance in healthcare usage the suggested unit costings of GP cost per clinic consultation lasting 17.2 minutes estimated at £53 and prescription costs per consultation (net ingredient cost) of £43 were applied to estimate variance and cost outcomes [30]. Caution is expressed about the costs based on healthcare unit costs due to the limited data available for 14 participants and adequate data only available for only 9 participants from a total of 31 participants over the 5 months of the Grow Cardiff Gardening pilot. Healthcare unit costs when examined on an annual basis for the nine participants the associated cost in healthcare usage (GP and prescriptions dispensed) was £7,754 per annum or monthly would indicate that in the previous 12 months the nine participants associated cost in healthcare unit usage was estimated at £861.55 per participant per annum or £71.79 per month as shown in Table 2. However, when accessing the average cost per participant per month over the 5 months of the intervention there was increase in costs based on healthcare usage for the nine participants by £33.27 per month (£105.06 - £71.79). Projecting these costs forward and inferred for the preceding 12 months post intervention and should all things remain equal it could be inferred there is a probability of projected increase in costs (£1,260.72 - £861.55 pre-intervention) by £399.17 per participant per annum based on costs per participant per annum. Nevertheless, extreme caution would be attached with these value estimates given that a constraint of the cost analysis is the lack of complete data obtainable and only satisfactory data available for 9 participants. Therefore, it was impossible to conduct exacting analysis for all 31 participants on the GROW well intervention and the findings should take cognisance of this limitation within the analysis.

Table 2: Cost analysis for GROW well intervention

	N	Total for 12 months pre-intervention for all participants	Total cost per annum pre-intervention for all participants	Total monthly average cost	Average per participant per annum	Average per participant per month	Cost for all participants over 5 months of intervention	Total monthly average cost	Average cost per participant per month	Projected costs per participant over 12 months post intervention
GP appointments	9	96	£5,088	£424	£565.33	£47.11	£3,180	£636	£70.66	£847.92
Prescriptions dispensed	9	62	£2,666	£222.17	£296.22	£24.68	£1,548	£309.60	£34.40	£412.80
Total	9	158	£7,754	£646.17	£861.55	£71.79	£4728	£945.60	£105.06	£1,260.72

Conclusion

Although 31 participants took part in the GROW well project over 5 months there was only data available for 14 of these participants. However, there was gaps in the data and incomplete data available on the 14 participants, with only sufficient data available to profile nine participants. The Grow Cardiff Gardening pilot data obtained is suggestive of a variance in healthcare usage and probable increase in associated costs. It would be recommended that for future projects that evaluation is built into the design phase so that evaluation data for cost benefit analysis could be captured to demonstrate robust value and outcomes associated with the project.

Limitation

Due to an incomplete data set for the Grow Cardiff Gardening pilot, project analysis can only be inferred and therefore the probability of a projected change in healthcare usage based on projected GP appointments and dispensing of antidepressants. This inference in costs are based on limited data and not robust in suggestive future trends in healthcare unit usage as a result of participating on the Grow Cardiff Gardening pilot.

Discussion and Recommendations

The results of the Grow Social Prescribing Pilot demonstrate that regular gardening does have a positive impact on, participants psychological wellbeing, reduces social isolation and loneliness and gives people a sense of purpose. In addition, it improves their positive health behaviours, helps them feel more confident in managing their condition, do more physical activity and eat more fruit and vegetables. These results support previous studies which show that gardening has positive health outcomes for patients and regular gardening is good for public health [29].

Whilst these results are positive and show the benefits of the pilot, the number of participants that took part was a small allowing only limited analysis. The timescales for the pilot was 5 months and it is recommended that this is extended to 12 months to increase the number of participants taking part and the amount of data collected pre and post intervention to further test the hypothesis test that the intervention has positive health and wellbeing outcomes for patients.

The participants that engaged with the gardening project found it easily accessible particularly as it was attached to their GP surgery and their local community centre and embedded in the community which they live. Little is known about the patients who were referred and didn't engage, therefore a recommendation would be for future evaluations to explore why patients didn't engage what were the barriers to engagement, what were the conditions that they presented to the GP with for example did they have complex needs. This would allow the intervention to be adapted to increase participation or understand which groups of patients gardening interventions were most appropriate for to enable GP practice staff to refer these patients in future.

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