Green Prescription

An Evaluation of the Green Prescription Programme in County Donegal 2013

FINAL REPORT

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Preface

I am pleased to present the Green Prescription Evaluation Report 2013. This report outlines the findings from research, undertaken in 2012, into learning from the Green Prescription pilot programme in Donegal. The research sought to determine the impact of the programme on clients, communities and to outline the key elements needed for successful programme implementation on a national basis.

Obesity is a precursor of many chronic diseases, being directly linked to the dramatic rise in type II diabetes, as well as excess cholesterol and heart disease, high blood pressure, osteoarthritis, respiratory disease and cardiovascular disease, including stroke. Overweight and obesity are also linked to certain types of cancer (they account for 30-40 per cent of cancers), and they are associated with late-life dementia. Being physically active can reduce the chances of developing one of these diseases by up to 50 per cent and reduce the risk of premature death by 20-30 per cent.

On average, an inactive person spends more time in hospital and visits their GP more often than someone who is active. Getting more people, more active everyday has an important role to play in reducing the levels of chronic illness and improving health and well-being overall.

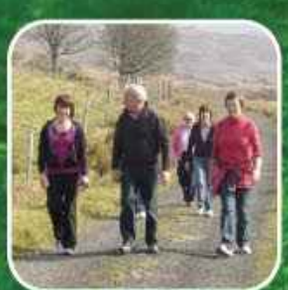
The Green Prescription focused on getting people more active outdoors in their local area. It is a community-based physical activity programme developed by HSE Health Promotion in Donegal and funded under the National Taskforce on Obesity. The programme aims to provide communities with a sustainable and structured physical activity programme that works through partnership with the HSE, communities, health professionals and key agencies at a local and national level.

The research findings demonstrate significant physical and mental health benefits for programme clients. Clients who completed the programme experienced significantly reduced blood pressure scores, significant improvements in mental wellbeing, and a trend towards increased physical activity. The research also found that GPs and Community Groups spoke positively about the programme, and worked successfully in partnership with the HSE.

Obesity cannot be reduced by the HSE working on its own. So many factors influence our health and wellbeing – our living and working conditions, food production, our income, our culture. Partnership projects like this are very important in improving health and wellbeing. The Green Prescription programme demonstrates how the HSE can successfully work in partnership with communities in the development of sustainable programmes that tackle obesity.

Overall, this research shows the potential for the Green Prescription programme to reduce obesity, and impact positively on physical and mental health, through a partnership approach to programme delivery. Green Prescription is supported nationally under the national Taskforce on Obesity and the programme will be rolled out nationally in a phased process from 2013 onwards.

Dr. Nazih Eldin
HSE Lead on Obesity and Head of Health Promotion & Improvement, Dublin North East



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Glossary of Terms

Anthropometric measurements

Anthropometrics is the study of the human body measurements to be used in classification and comparison. Common measurements weight, height, waist circumference, and body mass index. These measures are then compared to reference standards to assess weight status and the risk for various diseases. Anthropometric measurements require precise measuring techniques to be valid. (James, 2004)

Blood Pressure

Blood pressure is the force of blood pushing against the walls of the arteries as the heart pumps blood. Blood pressure is measured as systolic (sis-TOL-ik) and diastolic (di-ah-STOL-ik) pressures. "Systolic" refers to blood pressure when the heart beats while pumping blood. "Diastolic" refers to blood pressure when the heart is at rest between beats. Hypertension is abnormally elevated blood pressure.

Classification of blood pressure levels

Category	Systolic		Diastolic
Normal	Less than 120	**and**	Less than 80
Prehypertension	120-139	**or**	80-89
Stage 1 Hypertension	140-159	**or**	90-99
Stage 2 Hypertension	160 or higher	**or**	100 or higher

Resting Heart Rate (RHR)

The resting heart rate is the number of times the heart beats when the body is completely at rest and indicates the cardiac efficiency of an individual.

Body Mass Index (BMI)

Body Mass Index is used to assess whether an individual is a healthy weight, overweight or underweight. It is obtained by dividing body weight <http://dictionary.reference.com/browse/weight> in kilograms by height in meters squared.

Classifications of Body Mass Index (BMI)

Healthy	BMI of 18.5 – 24.9
Overweight	BMI of 25.0 – 29.9
Obese	BMI of 30.0 – 39.9
Morbidly Obese	BMI over 40

Glossary of Terms

Waist Circumference (WC)

Waist circumference is used to assess the degree of abdominal obesity. A high waist circumference is a known risk factor for many diseases including heart disease and type 2 diabetes.

Waist Circumference Classifications

Gender	Healthy	Increased Health Risk	High Health Risk
Men	Less than 37 Inches	Higher than 37 Inches	Higher than 40 Inches
Women	Less than 32 Inches	Higher than 32 Inches	Higher than 35 Inches

Statistical Terms

Mean

The average of a range of valuesin a data set that is computed by dividing the total of all values by the number of values. It is the most common and best general purpose measure of the mid-point (around which all other values cluster) of a set of values, but is prone to distortion by the presence of extreme values and may require use of a measure of distortion (such as the standard deviation).

Median

Another type of average that is found by arranging the values in a data set in order and then selecting the one in the middle. If the total number of values in the sample is even, then the median is the mean of the two middle numbers. The median is a useful number in cases where there is extreme outliers in the data set that would skew the mean.

Standard Deviation (SD)

A measure of the dispersion of a set of data from its mean. The more spread apart the data, the higher the deviation.

Paired Samples t-test

A paired sample t-test is used to determine whether there is a significant difference between the average (mean) values of the same measurement made under two different conditions, e.g. if there is a difference in the mean wellbeing scores of a group of participants before and after a physical activity programme. It is used for data that is normally distributed (no extreme outliers).

Wilcoxon Signed Rank Test

The Wilcoxon Signed-rank test is similar to the paired samples t- test but it is used for data that is not normally distributed.

Table 1: Roles in the Green Prescription Programme

Gender	Healthy
EcoHealth Promotion Officer (HSE)	Green Prescription Programme Coordinator and lead. Responsible for programme development, funding and linking with all stakeholders. (Referred to as "Programme Coordinator" throughout this report).
Community Walks Development Officer	Links with community groups to help them develop, plan, implement and sustain the Green Prescription and Community Walks programme within their communities. Links with the Green Steps Facilitators to ensure smooth running of Green Steps. (Referred to as "Development Officer" throughout this report).
Support Worker	Follows up with referred clients and supports and motivates them throughout the 12 week programme. Links with referring health professionals.
Green Steps Facilitator	Trained and experienced physical activity professionals who lead the Green Steps. They have received tailored training relative to the Green Steps and the needs of Green Prescription clients.
Health Professional (GP, nurse)	Identifies suitable clients for the Green Prescription, explains programme, offers a prescription and refers clients to the programme by linking with support worker. May be a general practitioner (GP), nurse, physiotherapist, specialist etc. (GPs and nurses were the only health professionals involved in the programme during the course of the evaluation).
Referred Client	Clients referred into the programme by a health professional (i.e. they received a Green Prescription).
Self-referred client	Community members who self-refer into the Green Steps (have not received a referral from a health professional but believe they are in need of a more gradual approach to physical activity engagement).
Community Walker	A member of the community who joined the community walks (were not referred by a health professional and did not attend the Green Steps).
Community group	Structured community groups, such as Family Resource Centres (FRCs) and Community Development Projects (CDPs). Responsible for the establishment and sustainment of the Green Prescription and Community Walks in their local community.
Community Leader	Key person designated by the Community group to "mind" and support the programme as part of their everyday role.
Walking Leader	Leads the walks in a safe and inclusive manner. Walking leaders are volunteers from the local community and have received training in Walking Leadership and First Aid.

Executive Summary

Introduction

The Green Prescription is a community-based physical activity programme that was piloted in a number of urban and rural communities in Co. Donegal during 2011 and 2012. Clients enter the programme by referral from their local health professional or by self-referral. The programme consists of two parts – an initial 4-week Green Steps Programme followed by an 8-week volunteer led Community Walk. Referred clients are supported throughout the programme by a Green Prescription support worker.

The programme is based on the theory that physical activity in nature, also called "green exercise", results in positive outcomes for both physical and mental health. The primary aim of the programme is to improve community health and wellbeing by increasing the number of people engaging in "green exercise" within the community setting. The programme model is delivered in partnership between the Health Promotion Department in the HSE in Donegal, local community groups and local health professionals.

Aims & objectives of the evaluation

The evaluation aimed to determine the feasibility and acceptability of implementing the programme; outline the impacts of participation on the clients, communities and health professionals involved; and gain an understanding of the key elements needed for successful programme implementation.

Methodology

A mixed methods design was used. Quantitative data included pre and post measures of clients' daily sitting time scores, physical activity levels, mental wellbeing, weight, waist circumference and blood pressure scores. 19 clients completed both pre and post measures. Qualitative data were derived from focus groups and interviews with various stakeholders including referred and self-referred clients, community walkers, health professionals and community leaders.

Key Findings

Clients who completed the 12 week programme experienced evident health benefits. A comparison of averaged pre-post scores showed significant decreases in daily sitting time scores ($p<.001$), a trend towards increased physical activity levels, significantly reduced systolic blood pressure scores ($p = 0.02$), and significant improvements in mental wellbeing scores for both the Warwick Edinburgh Mental Wellbeing Scale ($p = 0.02$) and the WHO (Five) Well-Being Index ($p=0.007$) (these results should be interpreted with caution due to the small sample size). Clients highlighted health professional referral as a crucial factor influencing programme uptake. Lack of confidence and low motivation were among the most prevalent challenges experienced by clients and consistent motivational support was acknowledged to be a key requirement for programme adherence. Clients self-reported a wide range of benefits from programme participation including increased physical activity behaviour, improvement in various medical conditions, and reduced reliance on medications, weight reduction, improved sleep patterns and improved mental wellbeing. It was believed participating in the programme "reintroduce[d] the idea of exercise" to previously sedentary clients and motivated clients to become more physically active in their everyday lives. Clients associated mental health benefits with increased opportunities for socialisation and problem sharing with others in the group. Engagement with nature was also associated with an improvement in mental wellbeing, captured in statements such as "it's very good… to clear the mind".

Executive Summary

Health professionals believed this programme provided an alternative and complimentary means of treating many health conditions borne as a result of physical inactivity and overweightness. Additionally they felt the programme filled a gap by providing a structured, accessible and affordable physical activity referral option for patients. However they outlined time constraints as a prominent barrier in the referral of patients and relayed the need for a simplified referral system.

Community groups were keen to engage with the programme and viewed it as a much needed and valuable addition to the community. Partnerships between community groups and the HSE were formed with relative ease, with regular communication outlined as a key ingredient for an effective on-going partnership. Community leaders felt well placed within their role and experienced few difficulties in setting up the programme. Community groups cited many benefits of programme participation including improved social cohesion and enriched local connections within the community setting. The ability of the programme to engage otherwise "hard to reach" community members also enabled community groups to identify new areas of need within the community. Community leaders also reported gaining a greater awareness of the ways in which nature and green exercise could be effectively used to improve community health. Key challenges highlighted by community groups included poor health professional support for the programme in some communities. Additionally some community leaders relayed a need for some financial support from the HSE to facilitate the implementation of the programme and ensure long-term sustainability.

Conclusion

The Green Prescription programme was successfully implemented within most communities and clients, health professionals and community leaders reported many benefits of engagement while also outlining suggestions for improvement.

Overall the findings of the evaluation show the potential of the Green Prescription programme to positively impact individual and community health, and are pertinent in relation to a vast array of current health policy goals. The findings imply a further evaluation with a larger sample of participants is warranted and is also needed to produce generalizable results.

Introduction

The Green Prescription programme is a community-based physical activity programme. Clients enter the programme by referral from their local health professional or by self-referral. The model is an adaptation of the well-established Green Prescription Programme in New Zealand (Swinburn et al. 1998; Elley et al. 2003). It aims to provide a sustainable and structured, physical activity programme with a built in network of support for referred clients and self-referred community members. At the same time the programme provides health practitioners with an alternative or complementary form of treatment for patients with lifestyle ailments who would benefit from increasing their physical activity levels. The overarching goal of the Green Prescription programme is to improve community health by increasing the number of community members partaking in "green" physical activity. The programme model is built on a joint partnership between local health professionals and community groups, with support provided by the HSE and the local Sports Partnership.

The programme was initiated by the Health Promotion Department of the Health Service Executive (HSE) in Co. Donegal as a pilot in one community in 2011. Following on from the successful evaluation of the pilot initiative the programme was rolled out on a phased basis into 7 new communities across Co. Donegal over the course of 2012, and it was also implemented in the pilot community twice during this time. Thus in total the programme ran 9 times during 2012.

This evaluation took place during the roll-out of the programme in 2012. Its primary goals were as follows:

- To explore the feasibility and acceptability of implementing the programme across different communities
- To assess its impact on the clients, communities and various stakeholders involved.
- To gain an understanding of the key elements needed for successful implementation of the programme
- To explore the facilitators and barriers encountered during implementation
- To establish the potential of the Green Prescription programme model as a method of collaborative partnership working between primary care, community and HSE

Programme Development

During the roll out of the Green Prescription Programme there were many significant changes to the structure of the programme model. The final model is the result of an approach of continuous formative evaluation and refinement of the programme during the roll out. The evaluation included a review of each element of the model, including the referral system, the support system, the Green Steps and the Community Walks. The evaluation highlighted the elements of the programme that were already working well and the elements that needed further refinement. On-going evaluation informed the development of the model to its final structure. Evaluation findings are detailed in the "Findings" section of this report.

Brief description of the Green Prescription Programme

The Green Prescription Programme is an innovative programme based on the theory that physical activity in nature, also called "green exercise", results in positive outcomes for both physical and mental health. The primary aim of the programme is to improve community health and wellbeing by increasing the number of people engaging in "green exercise" within the community setting. It also aims to promote an increase in social capital within communities by providing opportunities for socialisation and networking, and by providing an opportunity for different community members and organisations to come together to work towards a shared goal of health improvement.

A "green prescription" is a health professional's written advice to a patient to be physically active in the natural environment as part of their health and quality of life management. The Green Prescription programme involves a referral to a 12 week community walking programme which consists of two parts – an initial 4 week Green Steps Programme followed by an 8 week volunteer led Community Walk. Referred clients are supported throughout the programme by a Green Prescription support worker.

The programme model is delivered in partnership between the Health Promotion Department in the HSE in Donegal, local community groups and local health professionals. The Health Promotion Department is the lead agency for the programme - the Eco-Health Promotion Officer is the programme coordinator, and is supported in her role by the Community Walks development officer (also based within the HSE). Community groups and health professionals form a central partnership, and the commitment and support of both are required before a Green Prescription programme can be introduced to a community.

Community groups are responsible for the development and sustainment of the Green Prescription programme within their local community. Their multifaceted role involved hosting the Green Steps and establishing the community walks. Community groups were supported in this role by the programme coordinator and development officer.

Health Professionals were responsible for the referral of suitable patients onto the community-based programme. Initially only GPs and nurses were eligible to refer patients to the programme; however the referral pathway was subsequently widened to allow referral from a range of other health professionals, for example, physiotherapists.

Other partners involved in supporting the programme are the Donegal Sports Partnership, the Donegal Road Safety group, Donegal County Council, Coilte, Rural Recreation and the Irish Heart Foundation.

(Refer to figure 1 for an outline of the key elements of the programme and refer to appendix 2 for an overview of the different roles played by each partner.)

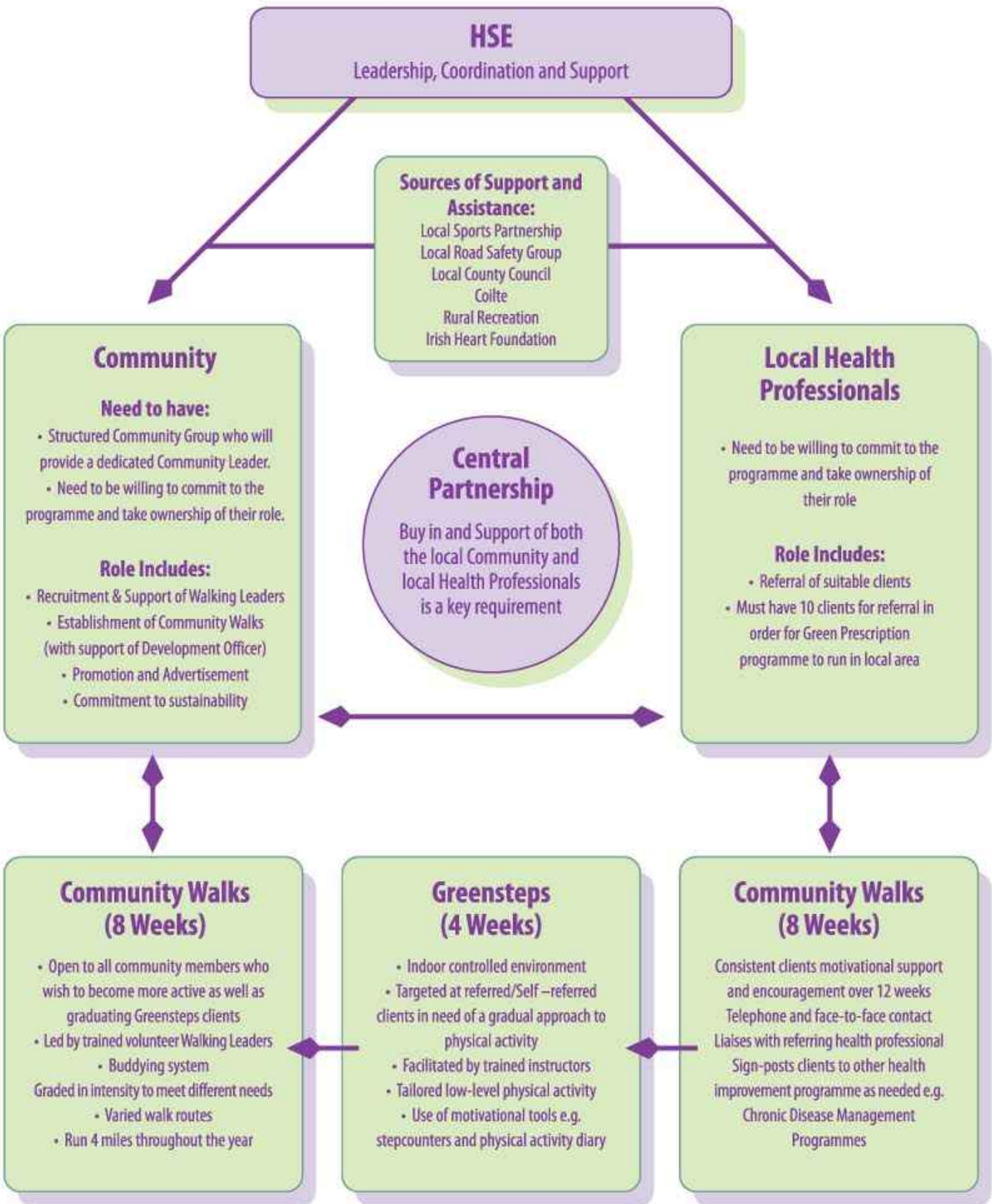

Figure 1. Key Elements of the Green Prescription Programme Model

Client journey through the Green Prescription Programme

Referral process

A health professional identifies a suitable patient using the set referral criteria (based on their health conditions, physical ability, age, readiness to change) for the programme. The health professional explains the programme to the patient and if they agree to participate, the health professional issues them with a Green Prescription slip and refers them onto the Green Steps programme. The patient's details are then forwarded on by the health professional to the support worker. The support worker subsequently contacts the client and encourages them to attend the Green Steps Information Session. The Green Steps Information Session takes place one week before the commencement of the Green Steps and its purpose is to inform clients about what the programme entails and introduce clients to each other. The support worker also motivates clients to set achievable physical activity goals during this session.

Green Steps programme [1]

The Green Steps is a newly-designed, 4 week indoor low level physical activity programme. It is aimed at clients with a very low level of physical fitness and who require extra motivational support to get started. This programme is open to both health professional referral (e.g. a GP, nurse or other) and self-referral. The client receives support and advice in a small group setting with other referred clients on increasing levels of mobilisation and is slowly introduced to a physical activity setting for one hour per week over the four weeks. A trained exercise specialist (Green Steps facilitator) delivers this programme. The Green Steps acts as a transition to the 8 week leader led Community Walk which is open to all members of the community. The Green Steps is designed to run three times per year.

Support Worker

A support worker links with the clients through the Green Steps and Community Walks, and also acts as a link to the referring health professional. They motivate, support and encourage clients to set and meet goals and sustain regular physical activity. The support worker also signposts clients to other local health improvement programmes if required, e.g. The Quality of Life programme. The on-going role of the support worker includes linking with the health professional practice (to provide information on patient progression), providing support to clients via telephone, text and face to face support, and linking with Green Steps facilitators and walking leaders.

[1] The Green Steps programme was a new addition to the Green Prescription programme in 2012. Previously clients were referred directly onto the community walk. The pilot evaluation of the Green Prescription programme in 2011 identified the need for a more gradual approach to the programme for referred clients, as they were found to have very low starting levels of fitness and struggled to walk even short distances on the outdoor walk for the first few weeks. This also raised concerns re referred client safety. The Green Steps was developed to address these issues.

Community Walks

The 8-week community-based walks are the second element of the programme. The walks are led each week by volunteer walking leaders, who have undergone Irish Heart Foundation Walking Leadership Training and basic First Aid training. Clients are also matched with support buddies where possible. The walks are designed to be graded in intensity to accommodate a range of fitness levels. The walks are open to any member of the community looking to become more active and / or meet new people, as well as participants who have completed the Green Steps programme. Referred clients are encouraged to continue attending the community walks to maintain their new physically active lifestyle. The community walks are designed to run 4 times a year (on a rotating cycle of 8 weeks of walking, followed by a 4 week break) in order to ensure the development of a sustainable programme. The development officer provides on-going support to the community groups throughout the year.

Follow-up

The support worker contacts referred clients 3 months post programme completion to follow-up on current status and provide encouragement and support where needed.
(Refer to appendix 3 for diagrammatic overview of Client Journey)

Policy Context

The aims of Green Prescription are consistent with aims outlined in a wide range of recent strategies and policies from varied governmental departments (Refer to appendix 1 for an overview of these strategies). This is owing to the multi-sectoral struture of the programme model and it's focus on the achievement of pertinent objectives. Examples of congruent policies and strategies are:

- Healthy Ireland - A Framework for Improved Health and Wellbeing (2013-2025)
- HSE Framework for Action on Obesity (2008-2012)
- National Cardiovascular Health Policy (2010-2019)
- HSE Chronic Illness Framework (2008)
- The Strategic Framework for Health Promotion (2011)
- The National Countryside Recreational Strategy (2006)
- A Vision for Change – Report of the Expert Group on Mental Health Policy (2006)
  Smarter Travel – A Sustainable transport future (2009-2020)

Evaluation & Methodology

The evaluation of the Green Prescription Programme was undertaken by researchers from Sligo Institute of Technology. Full ethical approval was sought and granted for the research by the Irish College of General Practitioners (ICGP) and the Research Ethics Committee (REC) at Letterkenny General Hospital.

The evaluation took place over a 16 month period from January 2012 to April 2013, following on from the evaluation of the successful pilot study in 2011. It tracked the programme as it was rolled out into a selection of urban and rural communities across Donegal in 3 separate phases during that period.

The goals of the evaluation were as follows:

- To explore the feasibility and acceptability of implementing the programme across different communities
- To assess its impact on the clients, communities and various stakeholders involved
- To gain an understanding of the key elements needed for successful implementation of the programme
- To explore the facilitators and barriers encountered during implementation
- To establish the potential of the Green Prescription programme model as a method of collaborative partnership working between primary care, community and HSE

The evaluation design utilised consisted of a combination of formative, process and also short-term summative approaches. These combined approaches were deemed most suitable and realistic as the programme was in a state of continual development whilst being in the early stages of implementation (it's first 1-2 years) during the timeframe of the evaluation (THCU 2007). Mixed method techniques were employed to gather data. A summary of all quantitative and qualitative data collected is shown in Table 3.

All clients who participated in the evaluation did so by informed consent, and were assured of complete anonymity and confidentiality.

Quantitative data was analysed using Microsoft Excel (2010) and Statistical Package for Social Sciences (SPSS) Version 20 for Windows. Descriptive statistics are used to represent the data.

Development of focus group and interview topic guides was guided by a literature review and key research questions. All focus groups and interviews were recorded on digital recorders and moderated by the key researcher (with the exception of one focus group which was moderated by an external moderator). Recordings were anonymised and subsequently transcribed verbatim in partnership between the key researcher and an external party who was bound by confidentiality. All transcripts were entered into the qualitative software package Nvivo 9, and analysed using thematic analysis by the key researcher. A selection of transcripts were coded separately by another two members of the research team and all codes were cross-checked to ensure validity and transparency.

Table 3: Summary of all quantitative and qualitative data collected

Quantitative Data	
Data Collection Tools	**Data Collected**
Programme records	✓ Number of referrals ✓ Reason for referral ✓ Attendance
Anthropometric measurements (Pre and Post)	✓ Weight ✓ Height ✓ Waist circumference ✓ Blood pressure ✓ Resting heart rate
Questionnaires (Pre and Post) (See appendix4, 5, 6 & 7)	✓ Physical activity levels (International Physical Activity Questionnaire (IPAQ) ✓ Stage of Change (SOC) for physical activity ✓ Mental Wellbeing and Quality of Life (Warwick Edinburgh Mental Well-Being Scale and WHO Five Well-being Index)
Phone call interviews	✓ Reason for drop-out
Qualitative Data	
Data Collection Tools	**Data Collected**
Interviews and Focus groups	**Clients** ✓ Recruitment process ✓ Experience of Green Steps / Community walks ✓ Motivations & Support ✓ Benefits ü Drawbacks & Challenges ✓ Suggested Improvements **Other stakeholders (Green Prescription team, health professionals, community leaders, walking leaders, Donegal Sports Partnership)** ✓ Recruitment ✓ Role & responsibilities ✓ Perceived benefits ü Challenges ✓ Looking to the future: Recommendations for improvement / Requirements for sustainability / Considerations for roll-out **HSE Lead on Obesity** ✓ Opinion on model ✓ Perceived benefits & challenges ✓ Looking to the future: Potential for roll-out / Lead roles / Potential funding


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Quantitative Findings

Total Programme Reach, Breakdown of Recruitment and Gender Breakdown

Over the course of the evaluation the programme ran 9 times - it ran once in the following 7 communities Letterkenny (urban), Falcarragh(rural), Donegal Town (urban), Castlefinn (rural), Ballybofey (urban), Lifford(rural) and Dunfanaghy (rural); and twice in the community of Cloghan (rural). In total 194 individuals participated in the programme across all the above communities. This figure represents the total number of clients who were referred by a health professional (referred clients), self-referred clients and community walkers. The health professional referred clients (39) and self-referred clients (16) entered the programme during the Green Steps, while the community walkers (139) entered the programme during the community walks. A full set of weekly attendance rolls for the weekly walks was returned for 6 out of the 9 runs, however on 3 instances community groups were unable to return a full set of weekly attendance rolls (some weeks were missing). Thus the total number of community walkers is likely to be greater than the 139 reported.

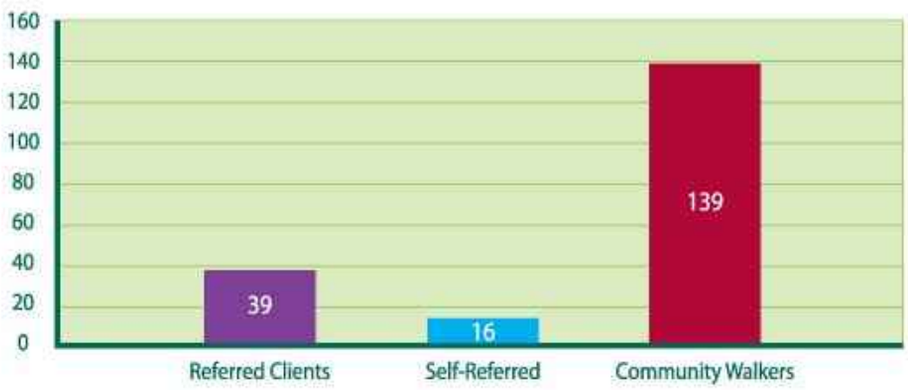

Figure 2: How participants were recruited to the programme

The programme attracted a higher number of females to males. 23% of participants were male, while 77% were female.

Green Steps Clients (Health professional referred and Self-referred clients)

Baseline data were collected for all 55 clients present on week 1 of the Green Steps programme. A small number of clients entered into the Green Steps programme after week 1, but no data was captured on these clients. Attempts were also made to collect quantitative data (including physical activity levels and levels of wellbeing) on community walkers, however for numerous reasons this did not prove possible.

The average age of Green Steps clients was 60.5 years. Again there were a higher number of females (65%) to males (35%), and in total 64% of clients were in receipt of a full medical card. The majority of clients displayed indicators of disease risk – e.g. 31% fell into the overweight category for Body Mass Index; 42% were classified as obese; 20% were classified as morbidly obese; and only 7% were classified as a healthy weight. 78% of clients had high-risk waist circumference measurements (above 35Inches for females and above 40Inches for males). The majority of clients (56%) were also found to fall into the "Low" physical activity category according to the IPAQ scoring logarithm, indicating that they were not achieving the minimum amount of physical activity needed for / or were not participating in physical activity regularly enough for health benefits.

Reason for referral

The reason for referral was sought for all 39 clients who were referred into the programme by a health professional (either a GP or a nurse), and this was provided for 33/39 of the referred clients. Clients were found to be referred for a broad range of reasons, the most common being overweightness, diabetes and high blood pressure. In many instances clients were referred for more than one reason.

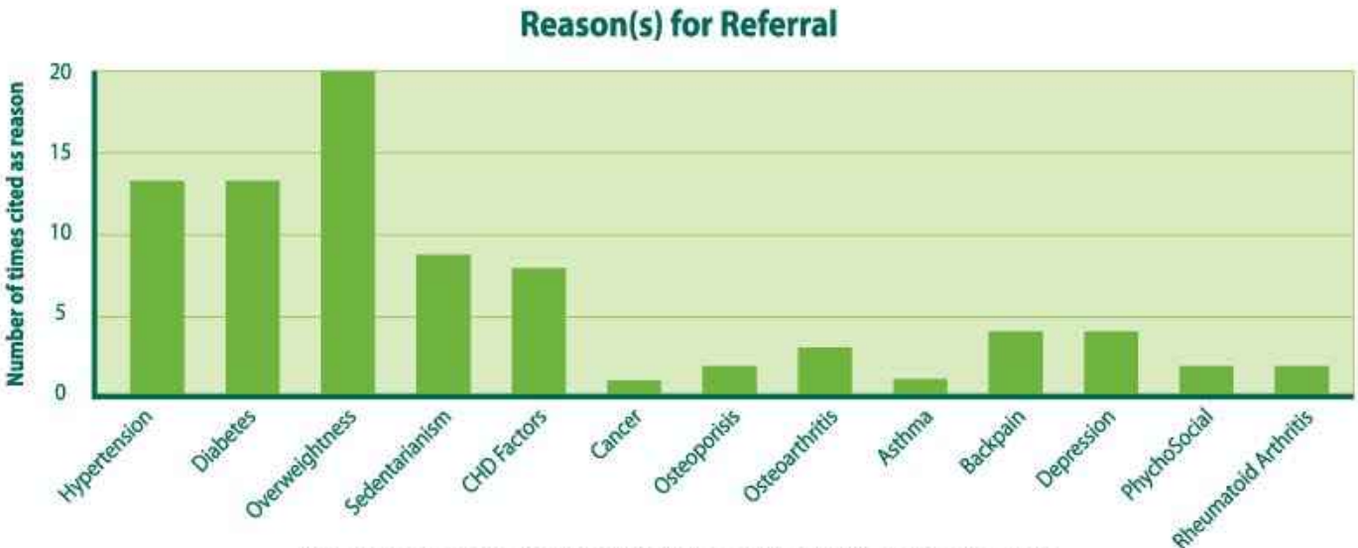

Figure 3: Reason for referral (Green Prescription clients only)

Attendance of Green Steps Clients and Community Walkers over the 12 weeks

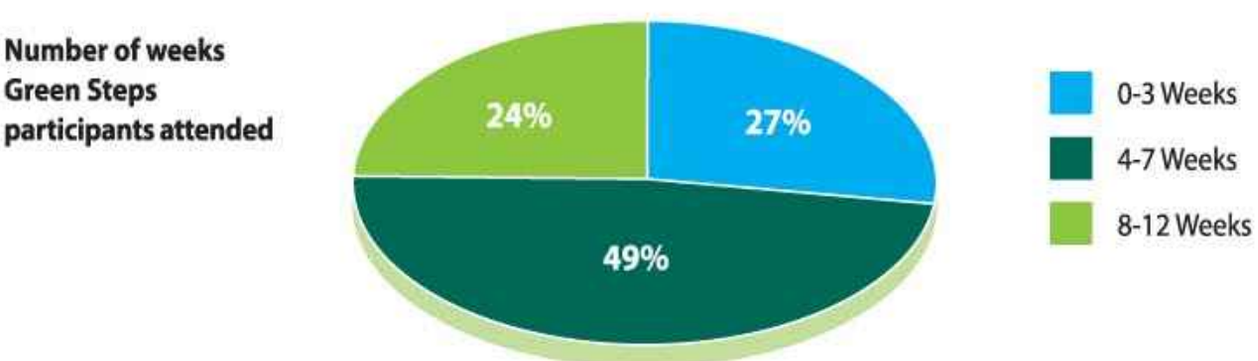

Figure 4: Participation levels of Green Steps Clients over the 12-week programme

Figure 4 depicts the total number of weeks completed by Green Steps clients. 24% of clients completed 8-12 weeks, 49% of clients completed 4-7 weeks, and 27% completed 0-3 weeks.

Community Walkers (not represented in the above chart) were found to have completed an average of 3 out of the 8 community walks. (The attendance findings are based on available attendance roll data for 6 out of the 9 runs of the programme).

Reason for drop-out

Green Steps clients who were not present at the 12-week follow-up were contacted to obtain the reason for drop out (Figure 5). This was obtained for the majority of clients (30).

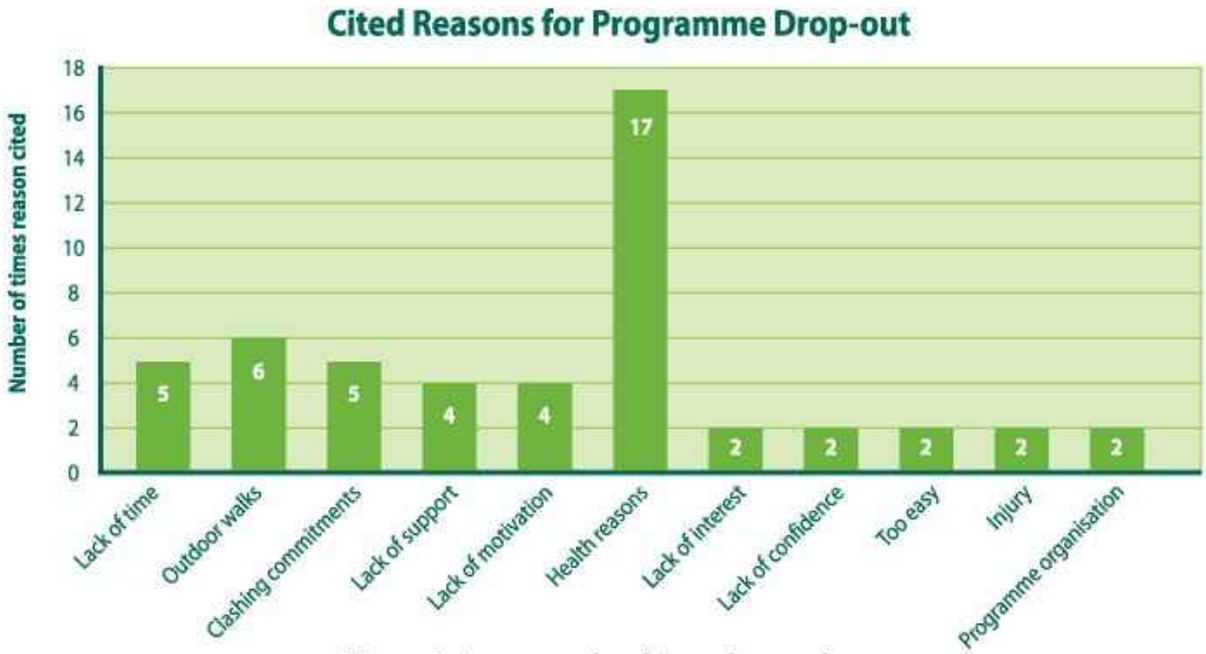

Figure 5: Reasons why clients dropped out

Clients generally reported multiple reasons for drop-out; however the most commonly cited reason was ill health (Health Reasons). Individual health reasons cited included pre-existing health conditions, such as heart problems and cancer, to short-term illness such as the common cold and flu. The majority of clients were keen to point out that their drop-out was not the fault of the program itself.

Changes in Health Profile, Physical Activity Levels and Mental Wellbeing for programme completers

A complete data set (i.e. both pre and post measurements) was obtained for 19 out of the 55 Green Steps clients. These 19 clients were present on week 1 and on week 12. This section of the report looks at the changes in health indicators, physical activity levels and mental wellbeing across those 19 completed data sets. It compares the average pre (Wk. 1) and post (Wk. 12) programme scores for these participants across a range of indices. These quantitative findings should be interpreted with caution given the small sample size of 19 clients.

Effects on Health Indicators

Table 2: Comparison of Pre-Post Scores across all Health Indicators

Health Indicator	Pre (Week 1)	Post (Week 12)	Change
Resting Heart Rate (RHR) (BPM)	77	77	No change
Systolic Blood Pressure (SBP) (MMHg)	134.6	126.1	↓ 8.5 mmHg
Diastolic Blood Pressure (DBP) (MMHg)	77.7	76.4	↓ 1.3 mmHg
Waist Circumference (WC) (In.)	41.2	41.1	↓ 0.1 inches
Weight (KG)	93.6	93.2	↓ 0.4 Kg
Body Mass Index (BMI) (KG/m2)	33.2	33.0	↓ 0.2Kg/m2

A paired samples t-test was conducted to compare the average systolic blood pressure (SBP) score at week 1 (pre programme) to the average score at week 12 (post programme). The test revealed that there was a significant difference between the mean SBP score at week 1 and week 12 ($t(18) = 2.512$, $p = 0.02$; $n=19$). The mean SBP score at week 12 ($M = 126.1$, $SD = 18.1$) was less than the mean SBP score at week 1 ($M = 134.6$, $SD = 19.2$) (see figure 6), hence these findings suggest that participating in the Green Prescription programme has the potential to positively impact SBP. A positive change was also observed for diastolic blood pressure (a reduction of 1.3 mmHg) from week 1 to week 12 (figure 6), however this was not found to be a significant change ($t(18) = 0.677$, $p>0.05$, $n=19$).

"...these findings suggest that participating in the Green Prescription programme has the potential to positively impact SBP."

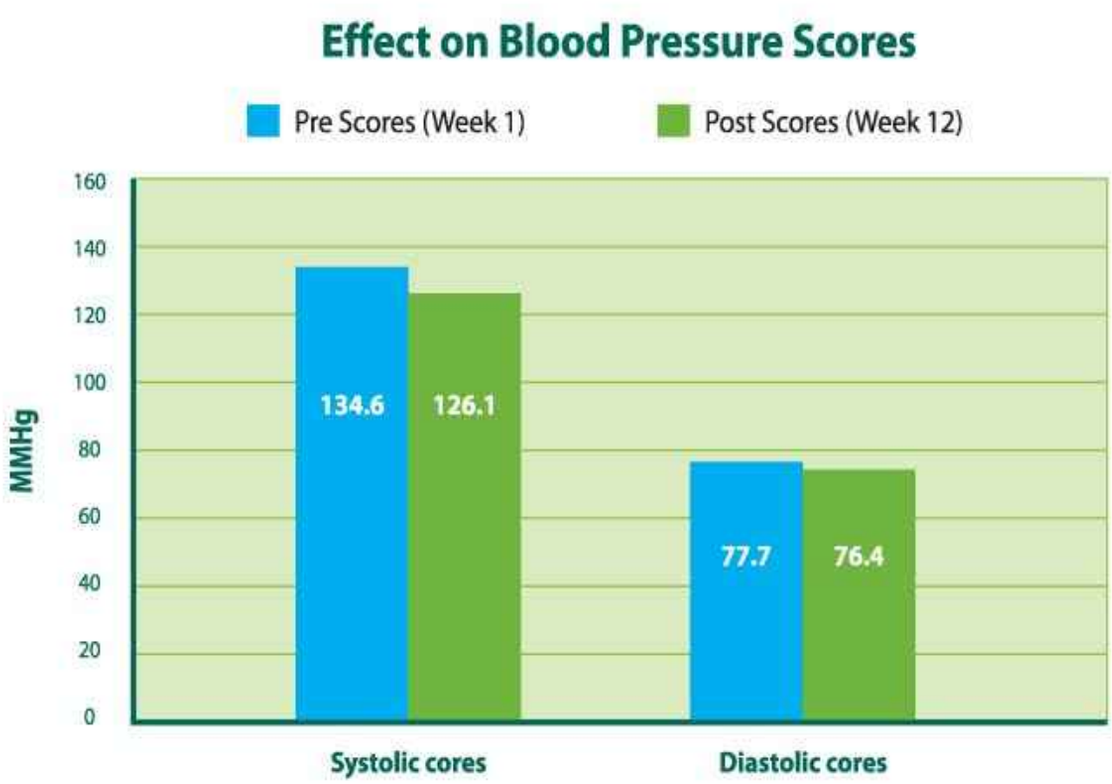

Figure 6: Pre-Post comparison of Blood Pressure Scores

No significant change was found across the other health indicators measured over the course of the 12 week programme.

Physical Activity Levels

Physical activity levels were measured according to the International Physical Activity Questionnaire (IPAQ). The IPAQ has been found to have acceptable measurement properties across a variety of settings, and has been found to be as reliable and valid as other widely used self-report measures of physical activity (Marshall and Bauman, 2001; Craig et al, 2003). The IPAQ scoring guide recommends that the physical activity scores collected through the IPAQ should be expressed as MET-Minutes per week [2]. The American College of Sports Medicine recommends that adults need to engage in at least 500 – 1,000 MET-Minutes of physical activity per week in order to gain health benefits (U.S. Department of Health and Human Services 2008). 500 MET-Minutes per week is the equivalent of 150 minutes of moderate intensity physical activity per week, which is the minimum recommended amount of physical activity as per current guidelines (U.S. Department of Health and Human Services 2008; Get Ireland Active 2013).

As recommended by the IPAQ scoring guide, median MET-Minute scores are used to represent data (Figure 7). The median baseline score of 438 MET-Minutes shows that clients were not achieving the minimum recommended amount of physical activity per week when they entered the programme (and were not doing enough physical activity to gain substantial health benefits). Clients median post programme score of 537 MET-Minutes in the 12th week is above 500 MET-Minutes of physical activity per week is associated with substantial health benefits. However the Wilcoxon Signed Rank test indicates that this difference in the median Met-Minute score from week 1 to week 12 was not statistically significant (Z = -.501, P>0.05).

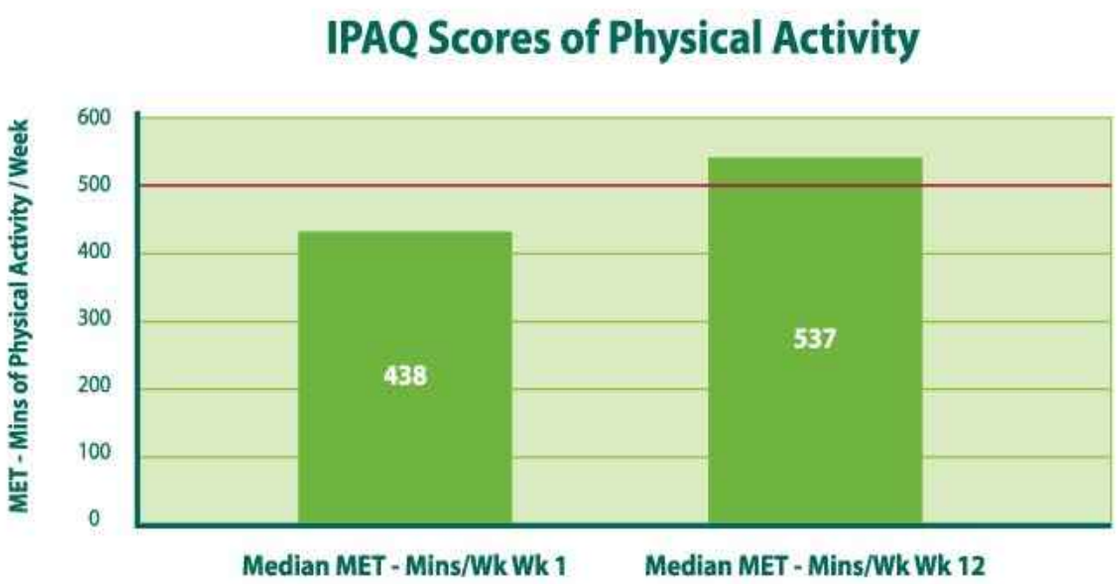

Figure 7: Pre-Post comparison of Physical Activity levels as measured by the IPAQ

[2] Explanation of MET-Minutes: MET (metabolic equivalent) is a common method of expressing the energy cost or calorie expenditure of different physical activities, e.g. resting, walking, jogging or running. One MET is the rate of energy expended when an individual is at rest. A 3.3 MET activity (such as a brisk walk) uses 3.3 times more energy than the body would use while at rest. So for example if an individual does a 3.3 MET activity for 30 minutes (e.g. if they went for a 30 minute brisk walk), they would have done 3.3 X 30 minutes = 99 MET minutes of physical activity. If they went for a 30 minute brisk walk 6 days a week, they would have done 99 MET minutes per day X 6days per week = 594 MET minutes per week. (The Cooper Institute 2012; U.S. Department of Health and Human Services 2008)

The IPAQ also collects information on the amount of time spent sitting down each day as a measure of sedentariness. A substantial decrease in the number of minutes clients spent sitting per day (a reduction of 60 minutes per day) was recorded from week 1(pre) to week 12 (post) (figure 8). The Wilcoxon Signed Rank test indicated that this difference in the median sitting minutes per day from week 1 to week 12 was statistically significant ($Z = -3.636$, $p<0.001$)

"A substantial decrease in the number of minutes clients spent sitting per day (a reduction of 60 minutes per day) was recorded from week 1(pre) to week 12."

Figure 8: Pre-Post comparison of sitting time scores

The Stages of Change

A pattern of progression through the Stages of Change for physical activity was observed from Week 1 to Week 12. At Week 1 the majority of clients were in Stage 2. By Week 12 the majority of clients were in Stage 4 (figure 9).

"A pattern of progression through the Stages of Change for physical activity was observed from Week 1 to Week 12."

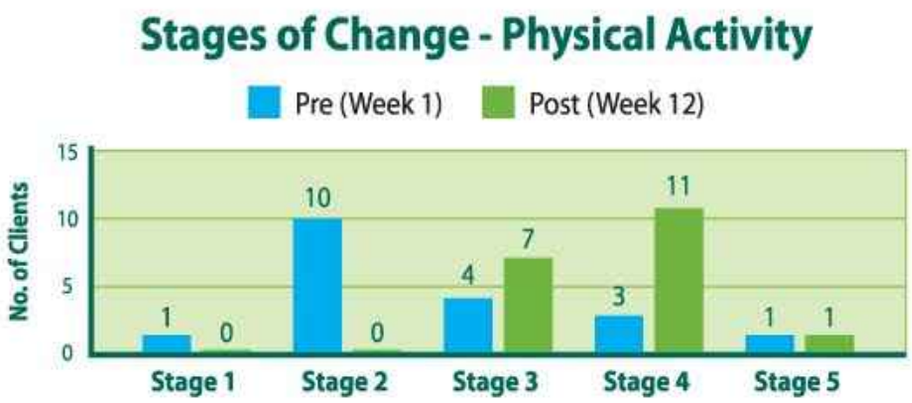

Figure 9: Progression through the Stages of Change for Physical Activity

Legend

Stage 1: Not regularly physically active and don't intend to be so in the next 6 months

Stage 2: Not regularly physically active but thinking about starting to do so in the next 6 months

Stage 3: Do some physical activity but not enough to meet the description of regular physical activity

Stage 4: Regularly physically active but only began in the last 6 months

Stage 5: Regularly physically active and have been so for longer than 6 months

Mental Wellbeing and Quality of Life

"...there was a significant improvement in mental wellbeing over the course of the 12 week Green Prescription programme."

Subjective mental wellbeing was measured using the 14 item Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), which has been shown to be valid and reliable and is widely used (Stewart-Brown et al. 2011). The minimum scale score is 14 (representing poor wellbeing) and the maximum is 70 (representing a high level of wellbeing). A paired samples t-test revealed there was a significant difference between the average WEMWBS score at week 1 and week 12 ($t(18) = -2.556$, $p = 0.02$, $n=19$). The average WEMWBS score at week 12 ($M=56.4$, $SD=8.05$) was greater than the average WEMWBS score at week 1 ($M=52.5$, $SD=9.67$) (figure 10). This means there was a significant improvement in mental wellbeing over the course of the 12 week Green Prescription programme.

Figure 10: Pre-Post comparison of mean WEMWBS scores

The WEMWBS was further complimented by use of the WHO (Five) Well-Being Index. It has shown to be a valid and reliable measure of emotional functioning and a good screener for depression (Bonsignore et al 2001; Henkel et al 2003). A raw score of 0 represents worst possible quality of life and a score of 25 represents best possible quality of life. A paired samples t-test showed there was a significant difference in the average WHO (Five) Well-Being Index score at week 1 and week 12 ($t(18) = -3.042$, $p=0.007$; $n=19$). The average WHO (Five) Well-Being Index score at week 12 ($M = 17.8$, $SD = 4.6$) was greater than the average score at week 1 ($M = 14.7$, $SD = 6.4$) (figure 11). Again this confirms there was a significant improvement in mental wellbeing levels from week I to week 12.

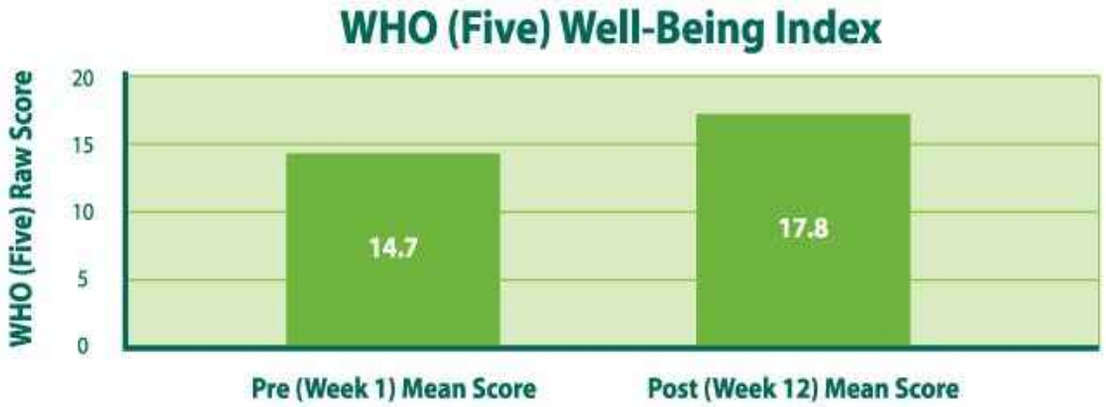

Figure 11: Pre-Post comparison of WHO-Five-Well-Being Index score

Qualitative Findings

To gain a comprehensive understanding of the client journey through each stage of the Green Prescription Programme – how it happened, what worked, what didn't work, key challenges, and benefits –individual interviews and focus groups were conducted with the Green Prescription programme coordinator and self-referred clients and community walkers. Interviews were also held with a range of key players in the client journey including the development officer, health professionals, support workers (previous and present), Green Steps facilitator and walking leaders.

Interview were also conducted with representatives from the two key partners – the community groups and health professionals – to ascertain how they experienced their involvement with the programme, facilitators and barriers to involvement and any perceived benefits.

Vision for the Green Prescription Programme

The vision of the Green Prescription was to "develop a programme that…used nature as a source and resource for health and wellbeing", while addressing key issues such as obesity, physical inactivity and mental health. Key concepts that guided programme development included partnership working, community development, socialisation, empowerment and skill development, accessibility and sustainability.

"I saw the value of … being outdoors from a physical point of view but also from a mental and social point of view"

"…want[ed] to use the community development approach…we involved communities in issues that affected their own health and also provided for them models and ways of actually keeping their local community healthier"

"I totally disagree with programmes that are very costly for people…we need to build something that people can access and that is…sustainable for people to get involved at a local level"

"… starting to trying to raise the profile of the benefits of nature and the benefits of green exercise …"

"As far as prescription was concerned….[it was] the whole idea of actually formalizing this approach….having it validated by health professionals"

(Green Prescription Programme Coordinator)

"Referral was also considered much more persuasive than seeing a general advertisement for the programme."

An exploration of the Client Journey

One Referred Clients Experience

Initial Referral

I was referred to by my doctor...because I had a quadruple bypass and cancer….to get some exercise…being referred was so important…because it was serious, I was told a date, I was told a time …there was continuity and you were sure of that.

Experience of the Green Prescription Programme

It was very well organised…it was balanced, it started quite slowly and it was well explained…it gave you confidence and got you motivated…you could walk at your own pace, your own leisure and ask questions

you meet people in the same problem as yourself…I didn't think there'd be that amount of people that would need what I need

They're [walk routes] nice and idyllic and they're safe …there was never problems…

Effects

This is the first time I went out and did something with the community, so I met people I never knew before…

I have started [to be more physically active now]…I walk more now…I park at the end of main street and I walk all up the main street and do my shopping and come back…

it…had a huge effect on [my] health, mental health, positivity…and [I] feel…confident of exercise and see the benefits of exercise …you don't realise how well you're gonna feel after it … and everyone you meet is positive…they're there to do a job and they all do it and that's it. Simple as that.

Referral

The referral by a health professional represented the first step in the (referred) clients' journey. The referral was found to be highly influential as clients remarked how they placed a lot of trust in the recommendations of their GP/nurse. Clients felt their health professionals had a unique understanding of their health history and thus "knew what was best" for them. Referral was also considered much more persuasive than seeing a general advertisement for the programme.

"I mean I don't know if advertisements in a newspaper or anything at all is going to do it…like I needed the push from the doctor especially to go and do it" (Male Referred Client)

Clients' experiences of the overall process were mixed. While some felt very well informed about the programme at the time of referral, others found the explanation of the programme *"vague"*. In some instances the knowledge of health centre staff re the programme was also questioned *"…the staff in the health centre didn't know anything about it…"*. Although clients were supposed to be issued with a *"green prescription"* sheet at the time of referral this did not appear to take place in many instances, with health professionals more likely to make verbal recommendations instead.

Not all clients referred by health professionals were suitable for the programme, for example a number of clients with health conditions that limited their ability to walk were referred but could not partake in the outdoor walks.

Green Steps

The Green Steps was viewed as a vital stepping stone in the patient journey. The majority of Green Prescription clients were very much "novices" when it came to physical activity and thus the Green Steps was believed to be a necessary bridge to take clients from complete inactivity to a stage where they could feel confident in their ability to participate in an outdoor walk.

Clients appreciated the gradual approach of the Green Steps, stating how it helped them to build their confidence and motivation, and overcome "shyness" about "mixing with other people".

> *"It was very well organised in that it was balanced, it started quite slowly and it was well explained into what was going to happen and basically…because it was a slow start it gave you confidence and got you motivated" (Male Referred Client)*

Overall Green Steps facilitators were viewed as a highly significant source of support and motivation. They formed a strong bond with clients which was, for many, an incentive for attendance – *"if you build up a relationship with somebody like [Green Steps facilitator] you're not going to let her down".* Green Steps facilitators relayed how they tailored the programme to suit the needs of the participants present and strived to ensure each class had a pressure-free ethos – actions that were highly valued by all clients. The fun and personal touch they brought to the class also made for a positive experience.

"She [Green Steps facilitator] was brilliant craic; it wasn't just all exercise, exercise, exercise, wait, wait, wait… She made you feel relaxed and she chatted to you and she had the craic with you…" ***(Female Referred Client)***

"She [Green Steps facilitator] was brilliant craic; it wasn't just all exercise, exercise, exercise, wait, wait, wait… She made you feel relaxed and she chatted to you and she had the craic with you…" (Female Referred Client)

All clients received a stepcounter and a physical activity diary during the Green Steps as a source of tangible motivation and support. Although some found the stepcounter *"inaccurate"*, in general it did its job well, as reflected in statements such as *"I was walking all-round the house or…to somebody else's house, where you'd normally drive, you'd do it deliberately to get the mileage up".*

Community Walks

The community walks were the point of entry of community walkers onto the programme. The walks were seen as one of the core functions of the Green Prescription programme – *"it's all about the walking group really; it's all about getting them out walking" (Green Steps facilitator).* The transition from the Green Steps to the community walks initially presented some challenges in terms of trying to create a smooth flow between the two in relation to timing and client handover. The support worker also highlighted the *"first couple of weeks of the walk"* as a crucial time in terms of support as clients adjust to a new setting and new leaders.

Pace and Walk routes

Key factors found to affect client experiences of the walk were the walk routes chosen and the pace at which the walks were led.

Graduating Green Steps clients and community walkers presented at the walks with a range of walking and fitness abilities and, to accommodate the range of abilities, walking leaders had been advised to split the group up into "fast" and "slow" cohorts. Within the groups where this strategy had been implemented successfully and it was very well received by all walkers, who stated they *"liked the way that everyone was accommodated".* Slower paced walkers especially valued the fact they did not feel like they were holding other people back nor been put under pressure to keep up to a certain pace.

> *"I was always the slowest…but…what I felt good about it was there was no pressure to keep up with people…" (Female Referred Client)*

However, for various reasons, in other groups walkers were not separated into fast and slow. Instead everybody walked within the one group at one pace. In these instances clients capable of walking at a faster pace did not enjoy the walk as much and admitted to feeling *"held back".*

> *"I find outside we're not walking far enough or even fast enough…" (Male Self-Referred Client)*

In general walkers appeared happy with the walk routes chosen – *"…they're nice and idyllic and they're safe…" (Male Referred Client),* and especially appreciated when they were involved in the process of choosing the routes.

"…they asked people who would like to go on a steep walk and who would like to stay on the flat…I thought it was very nice that we were asked whatever we wanted to do" (Female Community Walker)

However a common thread throughout all the groups was the need to vary the walk routes regularly otherwise walkers admitted to getting "bored". Repetitive routes were also cited as a previously known disincentive to attendance.

"…there was just a feeling of real interaction, the social aspect… there's always lots of chat. In fact I'd say the difficulty we have is getting them to go home!" (Walking Leader)

Social interaction and group bonding

There was positive feedback on the atmosphere at the walks each week across all groups, which was described as *"fun", "lovely"* and *"enjoyable".*

"…there was just a feeling of real interaction, the social aspect… there's always lots of chat. In fact I'd say the difficulty we have is getting them to go home!" (Walking Leader)

Walkers were very positive about the informal buddy system referring to how it allowed them to directly support and encourage each other during the walks (however it should be noted that not all walking groups were found to use a buddy system). They also relayed how the social aspect of the walking group made fitness seem less of a chore and more of an enjoyment.

"…when you're walking in a group you don't notice the time as much or you're not as focussed on trying to get fit…you're enjoying the conversation and your walks over before you realise you've…done it" (Female Community Walker)

Being part of a group was also a direct incentive to attendance as walker reported feeling a responsibility towards others in the group, and thus felt motivated to turn up each week as they "didn't want to let people down".

The Role of the Walking Leaders

The walking leaders were often highlighted as a crucial part of the community walks. They acted in a voluntary capacity to provide structure to the walks and there was much evidence to suggest they were an important source of support and motivation for the walkers. In particular attention was drawn to their encouraging and enthusiastic attitude, with references made to how they "boosted" participants on days when they felt like they "couldn't be bothered" or were struggling out on the walks.

"…they would make a point of talking to you and encouraging you… just showing an interest rather than just performing a function…they do seem genuinely interested in encouraging people…" (Male Referred Client)

Support System

Having a definite and consistent source of support was identified as a key factor for success in the evaluation of the pilot, and again on this occasion clients clearly outlined its importance.

"You wouldn't be inclined to do it unless you were getting a wee bit of encouragement and you had people telling you God, you're getting better this week, that's all sort of motivation…" (Male Referred Client)


Green
Prescription

Although clients received support from many different sources – including the Green Steps facilitators, walking leaders and each other – the support system mainly revolved around the role of the support worker. Over the course of the evaluation the efficacy of the support system was found to vary, with some clients reporting a lack of contact with the support worker. Many programme drop-outs also stated they had received no follow-up contact after leaving the programme. This was attributed to the fact the support worker role was limited to a one day working week, which was insufficient to fulfil the requirements of the role. As a result the support system was restructured and the support worker role revised. This resulted in a more effective system, and latest attendance roll data showed a much improved adherence rate. Also referred clients who entered into the programme after the introduction of the new structure, by contrast, gave very positive accounts of their contact with the support worker, and relayed the importance of the support system in motivating them to attend each week – *"…when you get that phone call every week just it motivates you to go…"*

"…he (support worker) called a few times to make sure that I was happy…with…the way the groups were been led, what we were doing and our targets … he couldn't have done anything else!" (Female Referred Client)

There was widespread belief that health professionals needed to "push" the programme more to increase attendance, with referred clients declaring "there must be more people like".

Attendance

The number of clients referred onto the programme was, in many cases, lower than expected. There was widespread belief that health professionals needed to "push" the programme more to increase attendance, with referred clients declaring "there must be more people like me".

"…there is a lot of people that would benefit from been sent out with a prescription I just think they (GPs) need to push it a lot more on their side" (Community Walker)

Attendance at the walks varied by community, but in general numbers were quite modest. This was partly intentional as the development officer did not want to overwhelm newly trained walking leaders with large crowds of walkers. However in some communities walk numbers were lower than planned. While acknowledging efforts had been made to promote the walks, walkers believed there was a need for increased promotional activity in order to boost attendance – *"… it could be promoted a bit better…I just feel if we could get more of it out there we might get more people" (Female Self-Referred Client).* It was also suggested attendance could have been affected by timing e.g. a different day/time may have suited people better and perception e.g. community members might have thought you had to be of a certain age or fitness level to join.

Effects

Accounts of the positive effects of the program (on referred clients, self-referred clients and community walkers alike) were wide-ranging.

"…it changed your way of thinking and it made you…prioritise exercise and not think "oh I'll do it later", to make it a priority and feel the benefits" (Female Self-Referred Client)

Effects on Physical Activity Levels

There was a definitive consensus the programme had helped break down many barriers traditionally associated with physically activity. Both clients and health professionals commented on how it "reintroduce[d] the idea of exercise" and provided motivation to "get started" again.

> *"…it was … a great motivation to get me started again…with this old osteoporosis [I thought] "oh sure I'm useless now I'm not going to be able to do anything"… But it give me a bit of encouragement to … know that I could do it" (Female Referred Client)*

There was also evidence to suggest the programme had spurred on clients to increase their physical activity levels outside of the community walks and helped to create a change in "mind-set" to make physical activity more of a priority.

> *"…it changed your way of thinking and it made you…prioritise exercise and not think "oh I'll do it later", to make it a priority and feel the benefits" (Female Self-Referred Client)*

Effects on Health and Wellbeing

Both referred clients and community walkers alike spoke of the positive effects the programme had on their health, seemingly confirming remarks made by many community leaders and walking leaders when they said they could "easily list" the community walkers in attendance that "should have been referred" for health problems but weren't. Reductions in blood pressure and weight, improvement in asthmatic conditions, better control of diabetes, improved sleep patterns and circulation, and reduced reliance on medications were all cited.

> *"It's easier on our medication I don't have to take as much at all… I find my lungs a lot better" (Female Community Walker)*

> *"…I lost a bit of weight which I was glad… And another thing it helped me, I could sleep at night. I was a worst of a sleeper…[but]…when I was out walking I could sleep 'til the morning" (Female Referred Client)*

Many clients were referred to the programme with comorbidities, such as a physical and a mental health problem, and in these instances these clients often described how they experienced an overall improvement in their health and wellbeing.

> *"…its helping…with my diabetes sugar levels and there kind of stabilising now. Mood wise it was good … like I would have depression as well so I just was like "right I have to go every week" and it made me go up and get up of me bum and get out" (Female Referred Client)*

Clients attributed the majority of the mental health benefits with the fact the community walks took place outside, often in areas of local natural beauty. Clients drew associations between being in the presence of nature and the reduction of depressive symptoms. Comments such as *"it lifts the mind"* and *"it clears your head"* generally captured the essence of how the programme positively affected mental wellbeing.

> *"It's very good for to clear the mind…you kind of lose yourself and just your surrounded [by nature]…it's absolutely just divine… and that does you the world of good" (Female Community Walker)*

"…there was one woman…she couldn't walk very far and didn't participate in any exercise …she went along and there was a lot of people in the same situation, she felt she wasn't the only one…it just helped with her whole self-esteem…" (Health Professional)

Social Benefits

The programme was also associated with a vast range of positive social effects such as the formation of social links and networks as clients and community walkers relayed how they had reaped much enjoyment from meeting new people and making new friends. Significant importance was attached to conversations with fellow walkers, sharing problems, and being a *"listening ear"*. Both health professionals and clients also remarked how the programme provided people with a *"sense of belonging"* and boosted self-esteem as they met *"like-minded"* people with similar health problems.

> *"…there was one woman…she couldn't walk very far and didn't participate in any exercise …she went along and there was a lot of people in the same situation, she felt she wasn't the only one…it just helped with her whole self-esteem…" (Health Professional)*

Key challenges experienced throughout the journey

The range of key challenges experienced throughout the client journey could be broadly grouped into environmental challenges (these issues mainly affected the walks e.g. poor weather, uneven footpaths and lack of lighting) and individual challenges (e.g. health problems, bereavement, lack of transport and clashing personal commitments). The support worker was keen to point out these are *"relevant reasons"* which affected client attendance and need to be held in mind when considering the drop-out rate. Lack of confidence and low motivation levels were also extremely prevalent individual challenges which were mentioned consistently by health professionals, support worker(s), Green Steps facilitators, walking leaders and clients themselves.

> *"…lack of motivation for exercise, lack of motivation for being in a place where they didn't know people and…to be somewhere at a certain time …motivation was a big issue with them" (Green Steps Facilitator)*

The Community

A community development approach was a key factor to ensure the successful implementation of the Green Prescription programme. The programme coordinator was keen to empower community groups to take ownership over the programme, and to play an active role in programme development which was seen vital to ensure sustainability.

> *"it's really important to involve community from the very beginning …if we want a sustainable programme then we need to have a community development approach where we actively involve the community in identifying the issues and the needs and being part of the solution" (Programme Coordinator)*

Buying In and Perception of Role

The initial engagement of community leaders was led by the programme coordinator, and this was found to be a positive experience as communities were very keen to buy-in to the programme. Motivations for engaging were driven by community need and expressed desires – for affordable health and fitness options, for green activity options, and for a group that facilitates community cohesion. Community groups also felt the ethos and aims of the Green Prescription were a natural fit with their own, as they too had goals around community health and engagement. Also some groups were already running the Health Promotion Departments' Healthy Gardening project and saw the Green Prescription as an extension of this, as it had the same "green" ethos.

> *"We had always… saw 'Community Health' and 'Healthy Community' as sort of part of our core business if you like…We thought, okay, it fits with what we do…" (Community Leader)*

Community leaders unanimously agreed that they were well-equipped to fulfil the duties of their role, as they were already experienced in supporting developing community initiatives. Few challenges were reported in terms of accessing required facilities, resources or in the recruitment of walking leaders.

> *"I think when you're in the community capacity you're used to recruitment, you're used to … the development side of things" (Community Leader)*

Recruitment of Community Walkers

An early challenge experienced by many community groups involved figuring out the best means of attracting sedentary community members/ beginner walkers – who they saw as the most "in need" and thus viewed as the main target group, rather than "fit" and "fast" walking enthusiasts. The first few walks often attracted community members who were expecting long distance, fast paced walks. Community groups reported these walkers were often left disappointed when they realised the walks were designed to be a stroll, and walking leaders admitted they found it hard to accommodate these very fit walkers alongside the unfit graduating Green Steps clients. As a result community groups felt the walks should be clearly marketed as a "strolling walk".

"…the biggest initial one [challenge] was being clear…with the people … who weren't referred directly by the doctors was "look its gentle strolling – it's not competitive walking...". (Community Leader)

"…the biggest initial one [challenge] was being clear…with the people … who weren't referred directly by the doctors was "look its gentle strolling – it's not competitive walking...". (Community Leader)

Working in Partnership

The community groups and the programme coordinator had an already established and trusting working relationship and it was felt this greatly aided the formation of their partnerships – "…it was just easy… because there was a good relationship there to start". In general community groups felt well-supported by the Green Prescription team throughout programme development, with reports of regular contact and communication. In addition there was evidence strong partnerships had been formed based on unified goals.

"…we would have a really…close relationship… we're all one big team trying to achieve the same thing…let's get people active and healthy". (Community Leader)

However some community groups did believe there was a need for the development officer to have more regular *"check-ins"* with the actual walking groups themselves (to provide advice and support). Furthermore there were requests for the HSE to organise complimentary health based sessions to run in conjunction the weekly walks e.g. healthy eating workshops, as walkers had previously relayed this as a "need" to the community leaders.

The strength of the partnerships formed between community groups and health professionals varied by community. In some communities good relationships had been formed with local health professionals actively referring clients onto the programme. However, in spite of direct marketing, other community groups had received no or few referrals through from health professionals. This caused some community groups to question the equality of this partnership. In fact low GP support was commonly highlighted as one of the key programme challenges.

"…we did the sales pitch with the doctors early on and I don't know if there was an opportunity or the resources to keep that pressure on if you like. And that I think was the weakness in the programme, that we should have got the commitment [from the GPs]" (Community Leader)

Programme Ownership

"To be honest we've benefited hugely from it in this area, definitely" (Community Leader)

Community groups embraced their involvement with the programme and had taken some definite steps towards programme ownership. However they believed that the HSE had the overriding responsibility over the programme. With this community groups felt that changes or improvements to the program should come through the HSE. This applied to both small scale improvements, such as mobilizing walking leaders to develop a fair rota system for leading the walks, to any potential larger scale changes (such as the inclusion of healthy eating workshops).

"Well I think it [improvements/developments within the programme] should be initiated by the HSE definitely because they are technically governing the programme – with the support of definitely the people on the ground" (Community Leader)

Sustainability

All community groups were in agreement that the Green Prescription and community walks programme was something they "wanted to hold on to", and most were already engaged in activities geared towards sustainability. However they outlined two key requirements to make the goal of sustainability more feasible. Firstly increased support from local health professionals was believed to be crucial for long-term success - *"… if you had the backing of a GP or a public health nurse it's worth so much…" (Community Leader)*

Secondly community groups called for more support in terms of resource investment. Community groups relayed their capacity was stretched due to recent cutbacks, and this directly affected their ability to invest in and commit to projects. Thus it was suggested a small amount of funding was necessary to facilitate the running of this programme.

"For this programme to work there should be a small matching investment… a hundred euro … would go a long way for a community group" (Community Leader)

Effects on Community

"To be honest we've benefited hugely from it in this area, definitely" (Community Leader)

The program was found to have a range of positive effects at a community level. Participants spoke about how they met new people and formed closer networks with other community members – "…it brings community together… it's a simple thing but it's actually good" (Female Referred Client). Community members who volunteered as walking leader also reported many benefits from taking part, e.g. the spoke about how leading the walks made them feel more involved with their local community, provided them with opportunities for social interaction, improved their skill set, increased their fitness levels and also increased their knowledge of the locality. However the most commonly cited benefit by community walking leaders was a "great" sense of achievement and satisfaction in accomplishing their altruistic goals of getting people more active, more social and healthier – "it's great satisfaction to get somebody…else out walking. I mean if I seen one of them out on the road, I thought God its brilliant, it's great they're out…it all started from here" (Walking Leader).

Community leaders reported how the programme managed to engage otherwise "hard-to-reach" community members, thus opening the door for them to get involved in other community programmes that may be of benefit.

> *"…the green prescription [walkers]...have been a great nucleus of people that we have been able to kind of identify, that may need support and help in other ways as well" (Community Leader)*

Taking part in the programme also provided community groups with a greater pool of resources to pull from for use in other initiatives, e.g. trained walking leaders also took part in sponsored pram pushes.

Additionally communities gained a greater awareness of their own readily available resources and natural capital that could be used for health improvement.

> *"it's that awareness…around the benefits of health related activity in your own community, that you don't have to pay a fortune to necessarily access gyms…it made us more aware about our own natural capital and what we have here …" (Community Leader)*

Finally, although not without their difficulties, the partnerships formed between community groups and health professionals improved their local connection and opened the door for on-going collaboration.

> *"…some GPs didn't even know those community projects were there, so there's been huge learning at the local level… and now we have found since then…some of the practice nurses have actually now gone and used the community resource centres for their antenatal classes – and they didn't even know they were there before" (Green Prescription Programme Coordinator)*

Health Professionals

Recruitment of Health Professionals

Health professionals' motivation for engagement was driven by patient need. Previous attempts to encourage their patients to engage in physical activity had failed due to a wide variety of barriers, often revolving around access to exercise facilities and low levels of patient motivation. It was believed the program could help address these gaps.

> *"we did see that exercise which we commonly recommend was very difficult for people to achieve…there were no real structures around it… and certainly people just saw huge barriers to it…it was a suggestion of something that might work and it also looked like it might work in a rural setting which is unusual 'cause many things don't" (Health Professional)*

Health professionals were also driven by the fact it provided them with an alternative form of treatment to offer to patients aside from drugs "…it's something that the GP can offer… in a not usual manner of prescriptions of any other activities or medication…" (Health Professional)

Referral Process

> *"I think a shocking number [of my patients] would fit the criteria for referral…"*

Health professionals were in agreement that a high percentage of their patients were suitable for referral "I think a shocking number [of my patients] would fit the criteria for referral…" (Health Professional); however for a range of reasons the number of patients they actually referred was much lower. The referral process itself was deemed too "time-consuming" given the short time-frame available for patient appointments (10 minutes). Some health professionals questioned the necessity of some of the referral requirements, such as collecting patient health data for the referral form and getting patients to sign a contract of commitment. They also believed the amount of paperwork was unwarranted.

> *"…I think maybe there was too much (paperwork). I think one sheet would have been fine … (Health Professional)*

Other factors that impeded referral included health professionals "forgetting" about the programme during consultations; health professionals not feeling accomplished in the referral procedure; and a lack of patient interest (or a perceived lack of interest).

> *"…we're not [referring as many patients as we could] maybe because…I am still not good at it and maybe because … we feel that people won't or aren't ready to engage" (Health Professional)*

External challenges, such as increasing numbers of patients coupled with decreasing resources and person-hours, where also reported to impact negatively on the amount of time health professionals had to dedicate to referral.

Health professionals made a number of suggestions they believed would make the programme more successful from their perspective. Firstly they requested a simplified referral pathway –less time-consuming, less administration and easier contact with the support worker - *"…if there was a better referral system…to simplify things …" (Health Professional)*

It was also felt there was a need to make it easier for patients to enter the programme, with health professionals advocating self-referral options and the involvement of other health practice staff - *"I think we always forget the power of reception front desk staff … there's no real reason why they can't be involved – in encouraging, in providing the information, in offering it".* With regards potential concerns about patient safety GP's were keen to point out they believed "the risk levels are tiny".

Health professionals also reported a low level of awareness of the programme among their patients, and thus believed there was a need to increase public knowledge of the programme through increased advertising. Finally to counteract the problem of "forgetting to refer" they stated a need for "constant encouragement and reminders", such as by means of emails and text messaging, throughout the year from programme coordinators.

Programme Ownership

Most health professionals, despite the above obstacles, wanted to be involved and had taken some steps towards programme ownership by trying to include it within their routine practice. They displayed promotional material within their clinics and were in the process of setting up structured referral pathways. They acknowledged this was a work in progress, and it wasn't yet where it needed to be - "…we have it stitched into some structures like our diabetic review structure …and we need to do more like that…" (Health Professional). Like the community groups, health professionals believed the HSE had the main responsibility for the programme.

However a minority of health professionals, despite acknowledging the need for and merit of the programme, questioned the importance of their role. Although happy to mention the programme to patients they expressed a preference to keep their involvement at a more "informal" level.

> *"I am not sure why you need the GP's to be honest…I think it would be good if …people could just self-refer…" (Health Professional)*

Perceived Benefits of Programme Engagement

There was unanimous agreement among health professionals that the program was beneficial, or at the very least had the potential to be beneficial. They believed it filled a previous long-standing gap by providing them with a structured physical activity initiative to which to refer patients, which was affordable and locally accessible. This was a treatment option which was not available to them previously – "it's an exercise and weight loss option that I otherwise would not have".

> *"We have been spouting about the evidence for increased exercise for years and we're not delivering it so that's the big thing that it actually gives us – a mechanism whereby we can deliver something that we believe to be an important intervention" (Health Professional)*

Health professionals relayed how previous referrals had returned to them with positive feedback about the programme, having also gained health benefits. Witnessing these benefits provided health professionals with a sense of personal satisfaction. The potential long-term benefits to primary care in general were also acknowledged in terms of reducing the number of repeat patients with conditions that can be solved by increasing physical activity levels.

> *"To be able to encourage someone and seeing them go off and then for them to get the actual benefits of it… [and] the feedback that came back it was positive" (Health Professional)*

> *"…if the individual will continue ….having physical activity … it's very satisfactory on a personal level for us as GP's … and secondly you might prevent them … re-attending for problems that can be almost solved by physical activity" (Health Professional)*

"We have been spouting about the evidence for increased exercise for years and we're not delivering it so that's the big thing that it actually gives us – a mechanism whereby we can deliver something that we believe to be an important intervention" (Health Professional)

Looking to the Future

Interviews were conducted with the Green Prescription coordinator, Donegal Sports Partnership Officer (DSPO) and the National Lead on Obesity to get their perspective on the programme and its potential roll-out.

The Green Prescription Programme model was generally perceived as *"a good model"*. However it was acknowledged in order for it to reach its full potential there is a need to facilitate greater buy-in from health professionals. Similarly it was agreed time and resources need to be allocated to strengthen the capacities of community groups not only to implement the programme, but also to sustain it. Furthermore to ensure a smooth and successful roll-out, it was accepted the programme will always require an intensive period of set-up support each time it is introduced to a new area, until it becomes embedded as normal practice for local health professionals and community groups.

> *"…it [requires] a high intensive kind of support for it by the coordinator, a little bit of support by the medical practitioner, but once it becomes a system, like all systems, they run themselves …" (HSE Lead on Obesity)*

The programme coordinator believed one of the biggest strengths of the model is that it proved to be a "valid way of working in partnership" across sectors (e.g. community, health, environmental sectors), and the current partnership structure was believed to be "the way forward" in terms of national roll-out. Meanwhile the recruitment of additional complementary partners and linkages was on-going. Many benefits were attributed to working in partnership – it was felt it strengthened the programme, increased its reach, facilitated a pooling of resources, avoided duplication of effort and enabled different sectors to recognise and play a role in health improvement. A partnership approach was also deemed the best potential means of funding and supporting the programme.

> *"…it should be a combination of funding rather than one stream of funding… it could be pursued…under the Healthy Ireland Principles of Partnership" (HSE Lead on Obesity)*

The need for clear leadership to oversee all partnerships was cited as "hugely important".

> *"you do need a lead… you have one champion that will drive out the whole thing and keep the momentum moving and … keep the work[going] in terms of supporting the community groups and the GP's and keep everybody informed… and to sustain groups …[without] that the whole thing would die" (DSPO)*

Health promotion was seen as "best placed to lead" out at an organizational level, with Local Sports Partnerships playing an important supporting role. Community development expertise was seen as key for the successful coordination and integration of the programme within each county/region.

> *"…somebody who has community development experience, who is trusted by communities, can work with communities, work in partnership, had an enabling, facilitating approach" (Green Prescription Programme Coordinator)*

Discussion

Although in a state of continual development throughout the course of the evaluation the Green Prescription programme was successfully implemented across a number of different urban and rural communities and resulted in a wide range of benefits for all those involved. The model was found to be a feasible method of collaborative partnership working between the HSE, health professionals and local community groups.

The Health Promotion Department aimed to create an accessible, structured and sustainable green exercise programme. It also aimed to raise awareness of the benefits of, and increase the number of community members *engaging in*, green exercise; to positively impact on the physical activity levels, health and wellbeing of participants and to increase levels of social capital within communities. The findings of the evaluation suggest the Health Promotion Department was largely successful in meeting those aims. However the evaluation also uncovered some key areas of weakness that needed attention in order for the programme to reach its full potential and be suitable for further roll-out.

Clients

Participants were generally very positive about their experience and were keen to relay how the programme had benefited them. However they consistently identified a number of key requirements to ensure the programme was most effective and acceptable from their perspective. These were health professional referral, consistent support and encouragement, a fun and social atmosphere, physical activity that took a graduated approach and suited their needs (didn't push them too much or too little), and varied walk routes.

Referral was without doubt an extremely influential factor in a client's decision to participate in the programme. Considering some clients critiqued the referral process as "vague", it is important efforts are made to remedy this, as it is possible potential clients may have declined involvement in the programme as a result of a lack of information at the time of referral.

An effective support system was found to be a crucial component of the programme. Referred clients spoke openly about their low levels of confidence and motivation, and their need for intensive and consistent support. Furthermore although upon follow-up the majority of participants who dropped out were keen to clarify their reasons for leaving were not related to any faults in the programme itself, it is telling that this high rate of drop-out occurred at the same time the support worker role was limited to an insufficient one day working week. Thus a key learning outcome is the need for the support system to have a clear structure and provide for regular contact with the clients (face-to-face and telephone). Individualised support and frequent motivational prompting (e.g. telephone support once a week) has also been highlighted in the literature as a key factor to promote adherence to walking programmes and to encourage the maintenance of on-going physical activity among clients (Isaacs et al. 2007; Lombard et al. 1995; Elley et al. 2007).

Attendance and Adherence

Although programme attendance may not have been as high as expected, it is perhaps not surprising given the early stage of programme development and initiation. However there is obviously a need to increase attendance for the programme to be truly able to influence community health. Key means of doing this were thought to be through increased referral rates and increased programme promotion. Although efforts had been made to promote the programme, many stakeholders reported a general lack of awareness about the programme among community members. Thus there is clearly a need for on-going concentrated promotional activities.

The modest rate of programme completion by clients is in many ways not surprising - similar client drop-out rates from exercise referral programmes have been reported within the literature (Lee et al. 2009). Efforts to promote programme adherence could focus on addressing some of the key challenges cited by clients, e.g. addressing the restrictive timing of the Green Steps and the Community Walks to make them more accessible. Other challenges such as environmental barriers, e.g. uneven footpaths and lack of lighting along walk routes, have the potential to be overcome by collaboration with local authorities to improve community walkability etc. On-going monitoring of client attendance is also crucial. It is accepted some barriers/challenges highlighted by participants, e.g. ill health, are beyond the direct control of the programme.

The role of Communities and Health Professionals

Community groups were very keen to engage with the programme, and viewed it as a much needed and valuable addition to the community. Partnerships with the HSE were formed with relative ease, and having a pre-established working relationship with the programme coordinator definitely facilitated this process. Regular communication was found to be the key ingredient for an effective on-going partnership. Community leaders felt well placed within their role and experienced few difficulties in setting up the programme. However the implementation of the programme was somewhat resource intensive for community groups and for this reason the success of the programme within a community often depended on the readiness and capacity of the host community group. Although all community leaders interviewed were from structured community groups, such as Community Development Projects, a number of community leaders expressed genuine concerns about their ability to sustain the programme without some funding as their capacity was stretched due to recent cutbacks. Furthermore some community groups did not feel very well supported by local health professionals, and had received few or no referrals onto the programme. In order for the programme to be successful it is essential efforts are made to strengthen the partnership between community groups and health professionals in communities where it is weak. It is noteworthy that in spite of concerns all community groups were very supportive of the programme and clearly expressed their desires to "hold onto" it, with the majority engaged in activities aimed towards sustainability.

Health professionals unanimously agreed there was a definite need for the programme and most were very keen to be involved. However, for the most part, health professionals were still getting accustomed to being involved with the programme. It was clear promotion of, and referral to, the programme was not yet embedded as part of their everyday working practice. Challenges were undoubtedly encountered, such as time barriers that impeded health professionals' ability to fully participate and commit to their role. Other studies have also identified time constraints as the main challenge faced by GPs in green prescription programmes (Patel et al. 2011). In order to make participation in the programme feasible health professionals requested the referral process to be streamlined so it is less time-consuming and as "hassle free" as possible. However it is crucial to ensure that streamlining the referral process does not reduce its effectiveness from a referred client's perspective.

It also needs to be ensured health professionals have a clear understanding of the referral criteria for the programme to prevent the referral of unsuitable clients, which was highlighted as a problem by some stakeholders during the evaluation. Although health professionals advocated the role of other health practice staff in offering the programme it remains to be seen if potential clients would find the recommendations of front desk staff as influential as their GP/nurse. However increased involvement of front desk staff in terms of providing information and explaining the programme following health professional referral should be encouraged. This would serve as positive reinforcement to potential clients and would also ensure they receive all necessary information at time of referral.

It deserves attention that some health professionals questioned the importance of their role in the programme. This suggests there is a need for some level of awareness-raising among health professionals re their ability to influence patient's behaviour.

The programme coordinator and development officer strived to create a sense of programme ownership among both the community groups and health professionals, as this was seen as essential to ensuring sustainability. In most cases both partners had indeed taken definite steps towards programme ownership. However it was clear that they were also looking to the HSE to provide them with direction, as they were viewed as the main leader and decision maker. Considering the amount of different players and components to the programme, this is as to be expected. The programme will always need a leader to coordinate the different partners, components and to drive important changes.

Impacts on Clients, Communities and Health Professionals

Clients

Clients who completed the 12 week programme experienced evident health benefits. A comparison of averaged pre-post scores showed significant decreases in daily sitting time scores, a trend towards increased physical activity levels, significantly reduced blood pressure scores, and significant improvements in mental wellbeing levels. These findings should be interpreted with caution due to the small sample size of 19 clients, but imply further evaluation on a larger sample of participants is warranted.

Self-reported benefits included increased physical activity behaviour and increased motivation to exercise, weight reduction, improved wellbeing, improved sleep patterns, improvement in various medical conditions e.g. diabetes, asthma and reduced reliance on medications. Increased physical activity behaviour, reductions in blood pressure, weight lost and improved mental wellbeing have all previously been reported from evaluations of exercise referral schemes and green prescription programmes (Lee et al. 2009; Wormald and Ingle 2004; Barton et al. 2012). Clients attributed improvements in mental wellbeing and quality of life to interaction with nature and the fact the programme afforded them the opportunity to socialise, make new friends, share problems and provided them with a sense of belonging. It is of note very few clients were referred for reasons of mental health however these findings may warrant an increase in such referrals in future.

Discussion

Communities

From a community perspective the programme was found to effectively improve social cohesion and enrich local connections. This took place on many levels – including between community members who participated, between participants and the community groups, and between the community groups and the local primary care teams. These findings echo those from previous evaluations of community based walking programmes (Nguyên et al. 2005). Community groups also spoke of the wider benefits of programme engagement. For example community leaders referred to how the programme "opened their eyes" to how they could use what is readily available – nature and green exercise – to improve community health, something a community leader referred to as an awareness of "natural capital". The ability of the programme to engage otherwise hard to reach community members enabled community groups to identify new areas of need within the community, and in many instances the Green Prescription participants had gone on to join other community programmes run by the community groups. Furthermore although taking part in the programme was obviously somewhat resource intensive for the community groups, in many ways community groups capacities were also strengthened as a result of taking part. For example community groups were left with resources, such as trained walking leaders, that could be redirected into other community initiatives. In some cases taking part in the programme had acted as a catalyst for community groups to set up other community based physical activity programmes. For example a number of community groups recounted how setting up a community stroller group was previously a long held ambition but groups didn't know how to go about it. However taking part in the Green Prescription programme had provided Community Groups with the necessary training, resources and the "know-how" to make this a reality.

Health Professionals

For local health professionals the programme managed to fulfil a previously long-standing gap by providing a structured, affordable and locally accessible physical activity intervention to which to refer patients. It also provided an alternative and complimentary means of treating many health conditions borne as a result of physical inactivity and overweightness. Similar benefits have been reported by GPs in previous evaluations of green prescription programmes (Patel et al. 2011). In the long-term it was acknowledged the programme has the potential to reduce the number of repeat presentations from patients with "lifestyle" related illnesses, and in a time when primary care clinics are stretched to capacity this can only be welcomed. Furthermore health professionals clearly believed the benefits of the programme outweighed any potential risk to clients (which were referred at as "tiny").

Conclusion

The programme was successfully implemented within most communities and clients, health professionals and community leaders reported many benefits of engagement. Overall the findings of the evaluation show the potential of the Green Prescription programme to positively impact individual and community health, and are pertinent in relation to a vast array of current health policy goals. Further outcome evaluation on a larger sample of clients is needed to produce generalizable results.

Due to the complex nature of the Green Prescription programme model the development of a "how to" guide is a necessary tool to aid future programme leaders and partners in the development, implementation and sustainment of the programme to ensure a smooth and successful roll-out.

Limitations of this evaluation and Requirements for further research

Limitations of the evaluation are as follows:

- Rates of referral to the programme versus rate of programme uptake by clients over the course of the evaluation could not be calculated as no standardised system of recording referral rates was in place.
- Over reporting of physical activity levels by clients when filling in the IPAQ was observed.
- The low number of completed data sets (matching pre and post measurements) reduces the generalizability of quantitative findings.

Requirements for further research:

- Further evaluation should take place once the programme has become embedded within the communities and part of health professional practice. Outcome evaluation on a larger sample of participants is necessary to generate generalizable results.
- Long-term follow-up evaluation on clients (to take place at least 6 months post programme completion) is needed to determine the long-term effects of programme participation.
- It is necessary to determine the cost of programme investment verses benefit.
- Quantitative measurements of the effect of the programme on community walkers (e.g. effect on physical activity levels, health status, quality of life, mental health etc.) need to be completed.

Recommendations

Client Referral, Attendance and Support

1. Referral rates to the programme should be monitored, and monitoring should include the number of clients referred versus the number of clients who uptake the programme. Reasons why potential clients decline participation in the programme need to be clarified.

2. All clients should be issued with a Green Prescription slip at the time of referral by the health professional. All clients should be provided with sufficient information at the time of referral so they fully understand what the programme entails and are clear about what they are committing to.

3. Sufficient resources and time need to be dedicated to ensure clients receive effective and consistent support. Frequent support phone calls and face-to-face support should be maintained. On-going monitoring of the support system is advised.

4. On-going monitoring of attendance records is advised. A structured system for managing programme drop-outs needs to be instigated by support worker, Green Steps facilitator and walking leaders.

The role of Community groups

5. Sustained programme promotion and advertising within communities is needed to increase general awareness levels. Varied means of programme promotion are advised in order to ensure maximum reach.

6. Walk routes need to be varied regularly to avoid walkers getting bored and walking leaders need to ensure the walks cater for the various fitness abilities where possible. This may require additional walking leaders to be trained up within each community.

7. Community groups need to link the programme into existing community activities and projects, e.g. other physical activity programmes to encourage on-going physical activity behaviour.

Support for Community groups

8. Links to other programmes to meet expressed client needs should be offered by the HSE, e.g. links to healthy eating programmes.

9. Community Groups need to be supported by the HSE in their efforts to implement and sustain the Green Prescription and Community walks programme; compromises need to be reached in terms of financial assistance or other supports.

10. The volunteerism efforts of walking leaders should be acknowledged and efforts to ensure they feel supported valued and appreciated need to be maintained. On-going training needs should be met.

The role of health professionals

11. The HSE needs to devote sufficient time and resources to ensure the buy-in of health professionals. Sustained programme marketing is needed to raise health professionals' awareness of programme benefits. Health professionals need to actively participate in the programme to form equal partnerships with community groups.

12. The referral system needs to be simplified to make it more manageable from a health professional perspective but this needs to be balanced with ensuring client needs are met at the time of referral. Health professionals need to have a clear understanding of the programmes referral criteria to avoid the referral of unsuitable clients.

All Partnerships

13. The broad spectrum of statutory and community stakeholders need to continue to engage in the development of the various components of the programme model (see appendix 2).

14. Collaboration with local authorities is needed to improve the walkability of communities, for example by improving the surface quality of footpaths and ensuring adequate lighting.

15. A collaborative effort by all partners is needed to identify and maximise the use of available green space within communities for health promoting activities like the Community Walks.

Roll-out

16. Future programme co-ordinators should have community development experience and a previous history of working with community groups where possible as this was found to be a valuable asset in the formation of tight partnerships and smooth programme implementation.

17. A "how to" guide should be developed to aid future programme coordinators and partners in the development, implementation and sustainment of the programme to ensure a smooth and successful roll-out.

18. A "how to" training course should also be developed for all future programme coordinators to build expertise and skill-sets relevant to the implementation and sustainment of the programme.

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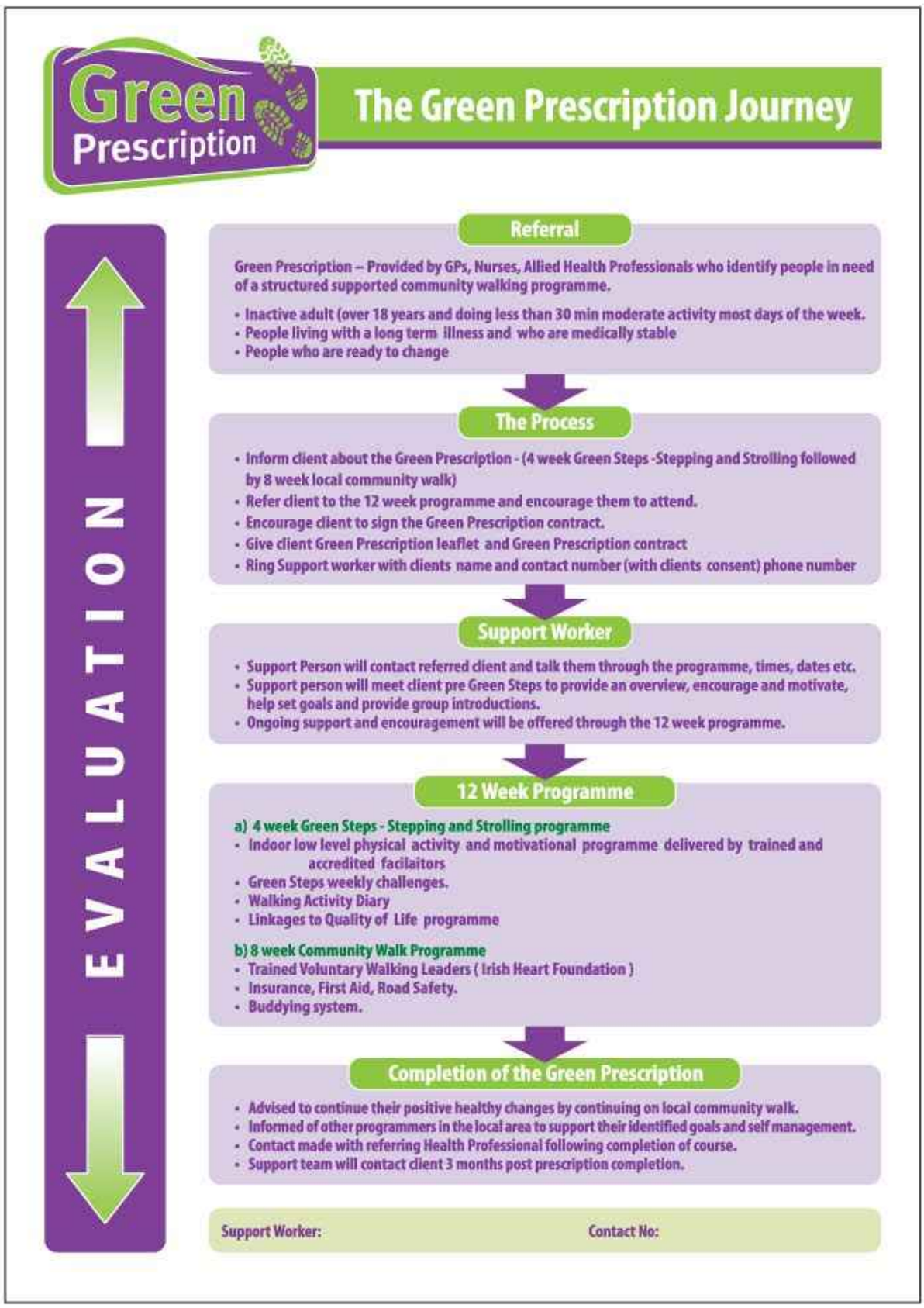
Appendix 1: Polices and Strategies congruent with the Green Prescription Programme

Name of policy/strategy	How it aligns with the Green Prescription Programme
Healthy Ireland - A framework for Improved health and Wellbeing (2013-2025)	✓ Recognised the broad determinants of health and wellbeing in an ecological context ✓ Highlighted the responsibility of all sectors, groups and organisations in health improvement ✓ Promoted collaborative partnerships ✓ Highlighted the importance of social interaction, connectedness and community involvement as a keystone to building strong communities
HSE Framework for Action on Obesity (2008-2012)	✓ Outlined the need to proactively engage and support other sectors in addressing the obesogenic environment ✓ Recommended sustained health professional led interventions in primary care and community settings
National Cardiovascular Health Policy (2010-2019)	✓ Proposed targets included a prioritizing of actions promoting increased physical activity, reductions in levels of overweight and obesity ✓ Stated pivotal role of primary care and intersectoral partnerships
HSE Chronic Illness Framework (2008)	✓ Relayed the need for primary care to form strong partnerships with the community to meet health goals of minimising and managing the impact of chronic disease. ✓ Aimed to work in partnership with communities to strengthen community action, support development of community based resources and enhance community health
The Strategic Framework for Health Promotion (2011)	✓ Advocated a settings approach to health promotion, declaring the health services and community as priority settings
The National Countryside Recreational Strategy (2006)	✓ Acknowledged the value of countryside recreation in improving quality of life and delivering health, social and economic benefits
A Vision for Change – Report of the Expert Group on Mental Health Policy	✓ Recommended mental health promotion should be available for all to enhance protective factors and decrease risk factors for developing mental health problems ✓ Recommended that a comprehensive range of medical, psychological and social therapies relevant to the needs of services user should be made available as part of an effective community based mental health service
Smarter Travel – A Sustainable transport future (2009-2020)	✓ Acknowledged the promotion of walking is "pivotal" to achieving national health goals such as increasing physical activity levels and reducing chronic disease. ✓ Set out to encourage a culture of walking within communities ✓ Outlined plans to invest in practical measures to support and encourage walking

Appendix 2: Overview of the roles of partners within the Green Prescription Programme

Roles & Responsibilities	
Leadership	
HSE Health Promotion Department • **Programme Coordinator** • **Development Officer**	Primary leading body. Varied role included: • Introduction& marketing of programme to communities & health professionals • Communitymapping & identificationof community coordinators • Supportingcommunities & Health Professionals to develop & sustain theprogramme • Recruitment ofGreen Prescription Support Worker • Set up &management of steering group. committee • On-going evaluation& implementation of required changes
Donegal Sports Partnership	Collaborated with HSE to provide support as follows: • Providedexpertise re set up & delivery of the programme • Shared knowledgeon pre-existing walking groups & community capacity levels to informcommunity mapping process • Sharedresources e.g. trained personnel to deliver Green Steps component (GreenSteps Facilitators) • On-going workwith communities to help build & strengthen capacities to implement& sustain physical activity programmes such as the GreenPrescription
Key Grassroots Partners	
Health Professionals	• Responsiblefor the referral of clients onto the programme • In future willneed to have a minimum of 10 clients ready for referral before a GreenPrescription programme will run in their local community
Communities	Responsible for the development & sustainment of the programme in their local area (with support from HSE). Structured community groups, e.g. FRCs and CDPs, seen as best placed to act as community coordinators. Varied role included: • Appointment ofCommunity Leader to support programme • Recruitment& on-going support of walking leaders • Mobilisationof required resources e.g. Green Steps venue • Identificationof walk routes and establishment of Community walks • Programmeadvertisement & promotion • Identificationand recruitment of community walkers • Linkingprogramme into existing community activities
Linkages and Supports	
Quality of Life Programme	• Sharing ofResources • Signposting ofclients between programmes where necessary
The Irish Heart Foundation	• TailoredWalking Leader Training programme
Coilte and Rural Recreation	• Provision ofsupport re walking routes and trails
Donegal Road Safety Authority	• Provision ofsupport re safety aspects of road walking

Appendix 3: The Green Prescription Client Journey



Appendix 4: International Physical Activity Questionnaire

Physical Activity

We are interested in finding out about the kind of physical activities you do as part of your everyday life. The questions will ask you about the time you spent being physically active in the LAST 7 DAYS. Please fill in the correct answer in the box provided.

Walking

Think about the time you spent walking at work and/or at home, walking to travel from place to place, and any other walking that you have done solely for sport, exercise or leisure.

1. During the **last 7 days**, on how many days did you walk at a brisk pace for at least **10 minutes** at a time?

   ☐ Days per week

   ☐ No walking → skip to question 3

2. How much time did you usually spend walking on one of those days?

   ☐ Hours per day ☐ Minutes per day ☐ Don't know/Not sure

Moderate Physical Activity

Moderate activities refer to activities that take moderate physical effort and make you breathe **a little bit harder** than normal. Think **only** about those activities that you did for at least **10 minutes** at a time.

3. During the **last 7 days**, on how many days did you do moderate physical activities? **Don't include walking of any kind.**

   ☐ Days per week

   ☐ No moderate physical activities → skip to question 5

4. How much time did you usually spend doing moderate physical activities on one of those days?

   ☐ Hours per day ☐ Minutes per day ☐ Don't know/Not Sure

Vigorous Physical Activity

"Vigorous" physical activities take hard physical effort and make you breath **A LOT harder** than normal **("huff and puff")**. Think only about those activities that you did for at least 10 minutes at a time.

5. During the last **7 days**, on how many days did you do vigorous physical activities?

   ☐ Days per week

   ☐ No vigorous physical activities → skip to question 7

6. How much time did you usually spend doing vigorous physical activities on one of those days?

   ☐ Hours per day ☐ Minutes per day ☐ Don't know/Not sure

Sitting

The last question is about the **time you spent sitting** on weekdays. This may include time spent sitting at home (e.g. while watching tv or reading) or at work.

7. During the last **7 days**, how much time did you spend sitting on a week day?

   ☐ Hours per day

   ☐ Minutes per day

   ☐ Don't know/ Not sure

Appendix 5: Warwick Edinburgh Mental Wellbeing Scale

Statements	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Appendix 6: WHO (Five) Wellbeing Quality of Life Index

WHO (Five) Well-Being Quality of Life Index

Please indicate for each of the five statements which is the closest to how you have being feeling over the last 2 weeks.

Over the last two weeks...	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
I have felt cheerful and in good spirits	5	4	3	2	1	0
I have felt calm and relaxed	5	4	3	2	1	0
I have felt active and vigorous	5	4	3	2	1	0
I woke up feeling fresh and rested	5	4	3	2	1	0
My daily life has being filled with things that interest me	5	4	3	2	1	0

Appendix 7: Stages of Change for Physical Activity

Stage of Change

Physical activity includes activities such as brisk walking, jogging, cycling, swimming, OR any other activity, such as gardening, which makes you feel warmer and slightly out of breath. Which statement best describes how physically active you have been over the last 6 months?

- ☐ I am not regularly physically active and do not intend to be so in the next 6 months
- ☐ I am not regularly physically active but am thinking about starting to do so in the next 6 months
- ☐ I do some physical activity but not enough to meet the description of regular physical activity
- ☐ I am regularly physically active but only began in the last 6 months
- ☐ I am regularly physically active and have been so for longer than 6 months

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Green Prescription

The Green Prescription Programme would not have been possible without the support, advice and encouragement from our partners.

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

HSE Health Promotion & Improvement
HSE Donegal Primary, Community and Continuing Care

Family Resource Centres and Community Groups in County Donegal
Community Walking Leaders