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Sustainability and evidence of success: An 18-month follow-up study of the Doorstep Walks initiative

M Vernon¹, M J Brewin² and D Vernon³

Abstract

Objective To assess the sustainability and evidence of success of an independent walking initiative titled Doorstep Walks.

Design A retrospective follow-up study using a self-administered questionnaire.

Setting The city of Salisbury in the county of Wiltshire with a population of approximately 24,000.

Method A postal questionnaire was administered to recipients of the Doorstep Walks pack ($n=322$) 18 months after its intervention.

Results Sustainability was noteworthy at 18.6 per cent of the initial cohort with approximately one in six continuing to use the resource 18 months after initial participation. Frequency of use remained similar to the original cohort with approximately one in four doing between one and five walks per 3-month period. The sustainability of reduced short car journey use and encouragement to go on 'alternative' walks was also demonstrated (1 in 8, and 1 in 7 respectively).

Conclusion Whilst the initiative has a prominent appeal to the 'active' its success in encouraging the 'sedentary' to become 'active' has also been demonstrated, although this is based on subjective, self-reported evidence. It is suggested that further attention be focused on the influence of the pack in encouraging alternative walking and use of walking as a mode of transport. The paper considers the value of the findings in the further development of such initiatives and in formulating an evidence

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base of success. Further research examining the effective targeting of such schemes and their longer-term impacts is recommended.

Key words: sustainability, evidence, physical inactivity, walking, evaluation

Introduction

In their recent document on health promotion evaluation, the World Health Organisation¹ defined evaluation as 'a systematic examination and assessment of the features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness'. The document also confirmed the need for health promotion interventions to be empowering, participatory, holistic, intersectorial, equitable, multi-strategy and sustainable. Sustainability is defined as 'being able to bring about changes that individuals and communities can maintain once initial funding has ended' and as such should be considered a valuable component of the evaluation.

This paper reports on a study examining the sustainability (in particular adherence) of the 'Doorstep Walks' initiative. The initiative, which was designed to assist Primary Health Care Teams in promoting physical activity, has been reported on elsewhere². The purpose of the 'Doorstep Walk' initiative was to design a pack of ten attractive, accessible, local walks ranging between 20 and 65 minutes in duration with an appeal to the general population. Seven of the walks linked 'green areas' within the City of Salisbury (Wiltshire) and three were in the countryside on the outskirts. The walks were classified on a five-point scale of ease (distance and gradient) to allow participants to increase the intensity and duration as their fitness progressed. Enclosed within the walking packs was general information about the benefits of regular physical activity, clear directions of the walks, information of local interest and a record sheet for participants to record their achievements. Five hundred free packs were disseminated to the general public through general practitioner (GP) surgeries and health centres, leisure centres, libraries, social service departments and voluntary organisations.

Physical inactivity has recently been identified as being the second highest relative risk factor in Coronary Heart Disease³ and given its prevalence in society, with 75 per cent of women and 63 per cent of men being inactive, physical inactivity has significant public health implications. Physical activity has been described as 'today's best buy in public health'⁴. Substantial improvements in public health, particularly in relation to coronary heart disease and stroke, are possible through encouraging people to walk on a regular basis; 'physical inactivity' being identified as a modifiable 'risk factor'⁵.

In recent years the health benefits of walking have become increasingly recognised and walking is set to play a central role in creating a healthier nation⁶. Walking initiatives are recommended in the National Service Framework for Coronary Heart Disease⁷ as a valuable community strategy approach for enabling increased levels of physical activity. The Countryside Agency and British Heart Foundation⁸ have also recognised the

potential of walking schemes and are aiming to develop over two hundred local Walking for Health schemes in England over the next four years. However, it has been suggested⁹ that few studies have examined how effective walking schemes are as a health promotion strategy.

The Doorstep Walks initiative has been cited by the Faculty of Public Health Medicine and National Heart Forum as an example of 'good practice' within the primary care setting¹⁰ and has been valued for its role in addressing transport issues.¹¹ It has also been used as a demonstration model within the Scheme Initiators Training Course of the Countryside Agency and British Heart Foundation 'Walking the Way to Health' initiative and is cited by them as an example of 'evaluating good practice'¹².

Reflection upon the nature of evidence accumulated to support the initial successes of the Doorstep Walks scheme led to a consideration of further aspects of success as identified in the WHO document¹. In particular it was anticipated that an enquiry into the sustainability of the scheme would further strengthen the evidence base for the success of the initiative and provide useful information for others wishing to develop similar schemes in their localities.

Method

The study adopted a pre- and post-intervention design utilising a subjective, self-administered postal questionnaire. The questionnaire, which was designed to examine the longer-term impacts of the Doorstep Walks initiative, was issued to all participants (322) 12 months after the initial evaluation, that is 18 months after the implementation of the initiative. The questionnaire was piloted, by random selection, on 10 of the initial recipients of walking packs. Their comments and suggestions were used in improving the presentation and clarity of the questionnaire.

As the initial evaluation study did not ascertain individuals' level of activity before receiving the pack, it had not been possible to identify if the scheme had been successful in targeting the sedentary. The sustainability study therefore provided an opportunity to explore this. Activity levels were determined using the Allied Dunbar National Fitness Survey (ADNFS)¹³, which measured physical activity over the previous four weeks. The six-point scale required individuals to indicate the level of their activity using three elements: duration, frequency and intensity. Participants were asked to rate their activity levels twice, first as perceived before receiving the Doorstep Walk pack (that is 18 months previously) and second at the time of the second questionnaire. Active is defined on the ADNFS as being in the range of 2–5 with a minimum of five to 11 moderate/vigorous activity sessions in the last month. Sedentary is defined on the ADNFS as 0 or 1 on the scale; that is no activity or a maximum of one to four moderate/vigorous activity sessions in last month. The study also allowed further questioning on the nature of other activities attributable to the initiative to be posed (for example, extent of 'other/alternative' walking and reduction in car use).

Data was analysed using SPSS (version 10) and differences in pre- and post-

activity levels tested for significance using the Wilcoxon signed rank test. Chi-square (χ^2) was used to examine differences between genders and between the active and the sedentary.

Main findings

Of the 322 questionnaires issued, 178 were returned. However, 28 were soiled, so the analysis is based on 150 questionnaires; this represents a 46.6 per cent response.

Of the respondents 82 per cent were women and 62 per cent were aged between 41 and 70 years. The scheme demonstrated an appeal to the older age groups with 59 per cent of the respondents aged >50.

Sustainability

Sixty respondents reported that they were still using the pack 18 months after it was initially received; this represents 18.6 per cent of the original cohort. It should be noted however that in the original study 87 per cent of those currently using the pack indicated that they would continue to do so. The 'continued users' use of Doorstep Walks is shown in *Table 1*.

TABLE 1 Frequency of Doorstep Walking in previous 3-month period (excluding missing data on use $n=4$)

Frequency of Doorstep Walking in last 3 months	No continued Use $n=86$		Continued Use $n=60$	
	Number	%	Number	%
Missing	63	73.3	4	6.7
0	16	18.6	6	10
1-5	5	5.8	34	56.7
6-10	1	1.2	10	16.7
10+	1	1.2	6	10
Total	86	100	60	100

Table 2 tabulates the key aspects of sustainability examined in the study.

Table 1 shows that 26.7 per cent of the 'continued users' indicated that their involvement consisted of at least six walks in the last three months. Six walks equates to a minimum of two hours 'Doorstep Walking' or a maximum of 6.5 hours 'Doorstep Walking' per 3-month period, depending upon which 'Doorstep Walk' was used. 56.7 per cent said their involvement was between one and five walks.

There was no significant difference between those self-reporting as active before the intervention and those who self-reported as sedentary in their continued use of the pack. 56.4 per cent of the active and 60 per cent of the sedentary were not using the pack ($\chi^2 p=0.924$). There was no significant difference in the proportion of males and females reporting continued use of the pack (41 per cent of males, 40 per cent of females $\chi^2 p>0.05$).

TABLE 2 Aspects of sustainability

Aspect	Initial study 6-month evaluation % (numbers) <i>n</i> =322	Sustainability study 18-month evaluation % (numbers) <i>n</i> =150
% return	71.1 (229)	46.6 (150)
Response rate female:male	71:29	82:18
Number using the pack	61 (196)	40 (60) 18.6% of original cohort
Percentage indicating reduced short car journey use	41 (132)	27 (40) 12.1% of original cohort
Percentage encouraged to go on 'alternative walks'	26 (84)	33 (50) 15.5% of original cohort
Doorstep Walking activity per 3-month period	Modal value: 'between 1 and 5 walks' 22.3% (72)	Modal value: 'between 1 and 5 walks' 26% (39)
ADNFS activity level scale (self-rated)	Retrospectively rated	Significant improvements in the active Wilcoxon <i>p</i> =0.000 Significant improvements in the sedentary Wilcoxon <i>p</i> =0.000

Those who continued to use the pack were more likely to report that they had been encouraged to go on alternative walks than those who did not ($\chi^2 p=0.000$). Similarly continued users were more likely to say that the pack had increased the distance they were prepared to walk ($\chi^2 p=0.001$).

Sustained improvements related to reduced car use were also noted: 12.4 per cent reported that they had reduced the number of short distance car journeys compared to 41 per cent in the initial study. Similarly, sustained improvement in 'being encouraged to go on alternative walks' was reported: 15.5 per cent compared to 26 per cent in the initial study.

Subjective improvements in fitness

Fifty-five per cent of the respondents (*n*=22) who classified themselves as 'sedentary' on the ADNFS at the time of receiving the pack reported a shift in activity status to 'active' after 18 months (Wilcoxon *p*=0.000).

Of the 60 respondents still using the pack 25 per cent were sedentary when they received it. However, after 18 months of use only 3.3 per cent remained inactive; 96.7 per cent of the previously sedentary who still used the pack became active. These increases were statistically significant (Wilcoxon *p*=0.000).

Discussion

Information on the health impacts of walking interventions is currently limited and the evidence base needs strengthening if wider implementation is to be approved. The follow-up study has allowed further information on the efficacy of walking for health initiatives to be gathered.

Sustainability was noteworthy at 18.3 per cent of the initial population (41 per cent of the 18-month follow-up). Approximately one in six of the initial population continued to use the resource 18 months after initial participation. This degree of sustainability represents 18,300 individuals for a Primary Care Trust of 100,000 with no further cost implications. It is perhaps interesting to note that this figure is of the same order as that quoted by Prochaska and Diclemente¹⁴ for the percentage of a defined population who are in the 'action' stage of change at any one time: 'fewer than 20 per cent'. It may be that of a population who have identified brisk walking as a modifiable risk factor, fewer than 20 per cent are at the stage of taking action at any one time.

The findings also reflect the observations on adherence by Dishman¹⁵ who reported that approximately 50 per cent of individuals who join exercise programmes drop out within the first three to six months. The study reported a drop in participation of 41 per cent (from 60 per cent in the initial study to 18.6 per cent in the current study). Dishman also reported that few studies experience success in the long-term maintenance of exercise behaviour. This study has demonstrated that approximately one-fifth of the original cohort had adherence/maintenance of exercise behaviour after 18 months.

Whilst the reported frequency of use of the Doorstep Walks is lower than would have been wished with a modal value of between one and five walks, it is comparable with that reported in the initial evaluation study at 6 months. However, the importance of the initiative for motivating people to become more physically active is emphasised by noting that one in seven reported that it had encouraged them to go on 'alternative walks'. This figure is slightly lower than the 26 per cent reported in the original evaluation of Doorstep Walks.

The evaluation identified significant differences in activity levels before and after the intervention; approximately half of those who said they were sedentary reported themselves as being active 18 months after receiving the pack. Of the continued users who were initially sedentary the vast majority became active, only 3.3 per cent remained sedentary. Whilst these numbers are low they demonstrate the effectiveness of the intervention for increasing activity levels in the sedentary over an 18-month period. However, it should be remembered that the pack has a predominant appeal to those who classify themselves as active.

It is acknowledged that the evaluation design failed to allow for potential seasonal variations in physical activity levels and that the findings may be influenced by the selection of an 18-month follow-up period; individuals may have experienced improved activity levels but then relapsed to previous sedentary behaviour at the time of questioning. It was not possible to quantify the effects of these variables within the

structure of the study. It is also acknowledged that the retrospective use of the ADNFS is far from ideal, especially as it relies on self-report without objective assessment. Furthermore the reliability of this self-report method of physical activity was not examined. It is suggested, however, that its inclusion provides an insight into individuals' perceptions of how the initiative has impacted upon their lives and as such has value.

Such additional evidence demonstrates the potential of the initiative for impacting on levels of physical activity in communities. However, its limited nature does not enable the authors to assert that it 'has been proven' that the initiative has an effective sustainability. In the absence of such absolute proof the use of the 'judicial review' approach to confident decision-making¹⁶ may be of value in assessing the overall value of the intervention.

In this approach differing forms of evidence are gathered, assessed and reviewed as a whole. The approach also values evidence derived using the 'non experimental' approaches as recently advocated by the Health Education Authority¹⁷ for example, the opinions of respected authorities, observational studies or case studies. By noting the subjective evidence derived from the 18-month follow-up study reported in this paper and acknowledging that Doorstep Walks is often cited^{10,11,12,18} (and recommended) by respected authorities as an 'evaluated case study' the authors believe that it is possible to conclude that it is 'beyond reasonable doubt', or that 'on the balance of probabilities', the initiative demonstrates effectiveness and has notable sustainability. Obtaining qualitative comment on the longer-term impacts from participants who continue to use the resource could further support this approach. Such case study data would give further insights into why some individuals maintain longer-term use, and help identify how the more sedentary people could be attracted.

The study did not examine the transferability of the initiative and it may be that locality demographics are an influential aspect of sustainability. Salisbury Local Authority area has been defined by the Office for National Statistics as being one of the most 'Prosperous Rural Areas' with 'high levels of persons over 65 years of social classes 1 and 2'. In addition, it has been described as having the highest proportion of people aged over 65 and 75 years in the Wiltshire Health Authority area. It was noted that 59 per cent of the respondents to the questionnaire were over 50 years of age.

Conclusions

The findings from this study have proved useful in the further development of local programmes and in the wider national debate on such initiatives. In particular the data on sustainability has been valuable in raising the credibility of the concept to those involved in the funding, implementation and marketing of local and (increasingly) national programmes.

Whilst the findings are limited, the 'added information' on sustainability and targeting gained by this study has provided further detail on likely outcomes. They have added to the pool of information available on such initiatives and progressed the

debate on the nature of evidence required to implement and develop health promotion interventions.

It is suggested that the information on sustainability presented above provides further supportive evidence on the ability of walking schemes to modify physical activity levels in general populations.

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