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Measuring The Social Value Of Prevention And Management Of Type 2 Diabetes In A Community Setting.

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ABSTRACT

Background: Type 2 diabetes affects 1 in 20 people over the age of 65. Although there is growing evidence around the effectiveness of lifestyle interventions to prevent or delay the onset of this disease, there is limited evidence of the wider social outcomes and value of such programmes. Social Return on Investment (SROI) is a method of defining, measuring and valuing the wider social outcomes and describing the process of change through the eyes of those who benefit. This paper aims to evaluate the wider impact and social value of the Westbank Living Well, Taking Control (LWTC) community-based diabetes prevention and management education programme. Methods: The SROI methodology involves a mixed methods design. Qualitative methods were used to identify outcomes that were viewed as important by stakeholders in terms of the impact they create. A quantitative approach was used to define the numbers experiencing the outcomes, a monetary representation of the outcomes and their value. Results: SROI analysis found that for every £1 invested in LWTC, there is £5.80 of social return over a three-year period. The sensitivity analysis showed that the value of the social return for every £1 invested in the LWTC is likely to be between £1.30 and £6.57. Conclusions: The study demonstrates the potential social value of a community-based diabetes prevention and management education programme in terms of outcomes for participants, and also the wider outcomes for staff, volunteers, family and friends of the participants and the organisations involved. Better appreciation of such wider outcomes could have an important role in building partnerships, community engagement and political mandate for public health interventions.

Key words: SROI, social value, diabetes prevention, community health,

BACKGROUND

Type 2 diabetes has serious implications and is associated with a reduced life expectancy and an increased risk of long-term health complications. Type 2 diabetes is the most common form of diabetes, accounting for 90–95% of cases. The prevalence of this form of the disease increases with age and in the UK it affects 1 in 20 people older than 65 years of age [1].

Pre-diabetes, also known as non-diabetic hyperglycaemia or impaired glucose tolerance, typically describes blood glucose concentrations that are higher than normal, but lower than the diabetes threshold. This state of chronically raised blood glucose confers a high risk of progression to type 2 diabetes. It is estimated that more than a third of adults in England now have pre-diabetes, and the prevalence has tripled over the past eight years [2]. It is recommended that individuals at risk of developing type 2 diabetes are offered an intensive lifestyle change programme providing tailored advice, and weight management [3]. At or around the time of diagnosis, people with type 2 diabetes should be offered structured education and the provision of individualised and ongoing nutritional advice [4].

Living Well, Taking Control (LWTC) is a community-based diabetes prevention and management programme. The programme was developed by two third sector agencies; Health Exchange based in Birmingham and Westbank Community Health and Care based in Exminster, Devon. It is led by Westbank, and initially funded as part of the Big Lottery Fund's

£1.2 million Wellbeing Programme. In addition to Westbank, LWTC was delivered by three other community and voluntary sector partner agencies in the North East of England and Birmingham. Westbank and its Birmingham partner agency, Health Exchange, have since been involved in the delivery of the NHS Diabetes Prevention Programme (DPP), which incorporates aspects of LWTC.

The core component of the LWTC programme comprises four weekly group-based behaviour change education sessions consisting of 10-12 participants. These sessions are usually delivered at the participants' GP surgery or local community centre. Participants are offered group follow-up sessions at 2, 3, 6, 9 and 12 months to review goals, changes and identify any additional support required. They can also select up to 5 hours of additional one-to-one or group support through various healthy lifestyle activities delivered by local community services. In line with NICE [3] recommendations, the programme was designed to provide participants with at least 16 hours of contact time, either within a group or one-to-one.

A systematic review of RCTs evaluating lifestyle interventions to prevent or delay type 2 diabetes in people with pre-diabetes found that lifestyle interventions reduced the rate of progression to type 2 diabetes by 50% compared to standard advice alone (pooled hazard ratio 0.51, 95% CI, 0.44–0.60) [5]. However, research often focuses on clinical outcomes for people attending lifestyle interventions and fails to explore the wider potential social outcomes for all those involved in delivering or receiving such interventions.

Under the Public Services (Social Value) Act, commissioners of public services have a duty to consider how they can secure wider social, economic and environmental benefits. Social Return on Investment (SROI) is a method of defining, measuring and valuing the wider social outcomes, and describing the process of change through the eyes of beneficiaries. This paper aims to evaluate the wider impact and social value of the LWTC programme delivered by Westbank.

METHODS

The social value of the Westbank LWTC programme was measured and evaluated using SROI methodology [6]. This is a widely recognised technique for recording value in voluntary and community sector agencies and has been previously described in detail in the literature [7]. SROI is often advocated as a methodology well suited to give a more 'holistic' picture of value for money than other forms methods of economic evaluation [8]. SROI is perceived to have increasing relevance for understanding the non-health outcomes of public health interventions [9]. A systematic review of studies between 2005 and 2011 found that health promotion was the field of public health in which the SROI methodology has been most applied [10].

The SROI analysed impact between April 2013 and December 2014. The programme was established in April 2013 and this initial period until November 2013 was a developmental phase for the project. The SROI included this phase in the scope because of the potential outcomes during this time period for some stakeholders. Group education sessions started in November 2013. Thus, including up until December 2014 means that some participants would have potentially completed their 12 month follow-up consultations.

248 participants were enrolled in the LWTC programme during the evaluation timeframe. 59% (n=145) of participants were male, 56% (n=138) were aged 55 years or over, and 47% (n=116) were retired [11].

The SROI methodology involves a mixed methods design. Qualitative methods were used to identify outcomes that are viewed as important by stakeholders in terms of the impact they create. A quantitative approach was used to define the numbers experiencing the outcomes, a monetary representation of the outcomes and their value.

Impact data were collected using semi-structured focus groups, face-to-face interviews and online questionnaires (table 1).

Table 1: Methods of stakeholder engagement

Stakeholder	**Total number of stakeholders**	**Method**	**Number of stakeholders engaged**
Programme participants - With pre-diabetes - With newly diagnosed diabetes	248 participants (86 with diabetes and 153 with pre diabetes)	Focus groups	20 with pre diabetes 10 with diabetes
Indirect programme participants: partners, friends, family attending the group	92	Focus groups	4
Project staff	4	Interview	3
Westbank	1 organisation	Questionnaire	7 staff
Volunteers	9	Questionnaire	1
Westbank gym	4 staff	Questionnaire	1
GP practices referring to the programme	12 practices	Questionnaire Desk based research	Based on desk based research
Local diabetes support group	1 group at Westbank	Focus group	1 group (15 people)

The SROI methodology involves creating an Impact Map based on stakeholder consultation that details how resources (inputs) are used to deliver activities (outputs) and thus create change (outcomes). Thematic analysis [12] of focus group and interview manuscripts was used to identify outcomes for stakeholders. The aim is to capture the process of change leading to the final outcome. By identifying these logical steps, it is then easier to identify appropriate indicators to measure the magnitude of the change. Constructing the Impact Map ensures that the outcomes that matter to those who are directly affected will get measured and valued.

The SROI Network [6] talks about distance travelled in terms of changes and recognises that changes are part of a chain of events. LWTC participants identified all the outputs and outcomes in the focus groups. These were written on post-it notes and put on an A2 size piece of paper. Discussions with the groups helped to move the post-it notes into the relevant chains of events. They were then involved in discussions about the order in the chain of events.

Indicators were identified for each of the outcomes. The outcomes were quantified in terms of the numbers experiencing the outcome by using baseline and quarterly measurement or questionnaire data [11]. Where data was not available estimates were obtained from the interviews or literature.

In SROI methodology, financial proxies are used to estimate the social value of non-traded goods to different stakeholders. The proxies selected were deemed by the researcher as the closest and most relevant service with a current market price.

The willingness to pay (WTP) approach was explored to give a value to this outcome [13]. Participants in the focus groups were asked to play the value game. This involves selecting an outcome and asking the group if they would prefer to have that outcome or an alternative such as a luxury holiday. The alternative has a market price which can later be assigned to it. Further alternatives are offered until all of the alternatives and the actual outcome related to the project have been ranked in order of preference according to how much they value them.

One of the key principles of SROI methodology is to avoid over claiming the impact of the activity being assessed. This involved deducting an estimated percentage of the value on the Impact Map due to deadweight (how much of the outcome would have happened anyway), attribution (how much is due to another organisation, group or person being involved) and drop-off (how much will be sustained over time). These estimates were based on stakeholder consultation.

Given that an SROI is based on many assumptions, it is important to assess the extent to which the results would change if some of the assumptions made in the previous stages were different. The aim of such an analysis is to test which assumptions have the greatest effect on your model. A sensitivity analyses was performed, making changes to estimates of deadweight, attribution and drop-off; financial proxies and quantity of the outcome.

RESULTS

Inputs

Financial records show that during the period analysed for the SROI, the total expenditure was £119,446 between start-up (April 2013) and the end of December 2014. This included just over five months of a start-up phase where participants had not been recruited.

Volunteers contributed a total of 163.5 hours to LWTC during the evaluation period. This was valued as an input of £1,062.75 based on the National Minimum Wage of £6.50 an hour.

Outputs

The primary output was 248 LWTC programme participants, attending weekly sessions for four weeks, and then follow-up reviews at 2, 3, 6, 9 and 12 months.

Outcomes

Consultation with stakeholders identified 15 outcome themes that had been generated by LWTC:

- A healthier diet
- Better mental health
- Weight loss
- Healthier diet (for people supporting participants)
- Increased physical activity
- Improved social networks
- Lower risk of developing type 2 diabetes
- Raised profile of Westbank
- More integrated working

- Increased GP capacity
- Increased income to General Practice
- Reduced NHS costs
- Increased future job prospects for staff
- Increased knowledge of volunteers
- Accommodation for local support group

Indicators were identified for each of the outcomes. The outcomes were quantified in terms of the numbers experiencing the outcome by using baseline and quarterly measurement or questionnaire data collected by LWTC (see table 2). Where data was not available estimates were obtained from the interviews or literature.

Table 2: Summary of outcomes, indicators and date collection source identified

Stakeholders	Outcome	Indicator	Data collection
Participants: pre-diabetic and newly diagnosed diabetic LWTC attendees	(a) Healthier diet	Number of participants who made at least one of the following dietary changes between their initial assessment and last review group	Participants: pre-diabetic and newly diagnosed diabetic LWTC attendees
	(b) Increased physical activity	Number achieving the recommended 150 minutes of moderate intensity physical activity or 75 minutes of vigorous-intensity physical activity a week at last review.	Baseline and latest review questionnaire
	(c) Better mental health	Number with an increase in WEMWBS score between baseline and 6 month review.	Baseline and 6 month review questionnaire data
	(d) Improved social networks	Number of people who identify that they have made new friends, gained additional support from the social interaction or spend time socially with people from the group.	Focus groups
	(b) Increased physical activity	Number achieving the recommended 150 minutes of moderate intensity physical activity or 75 minutes of vigorous-intensity physical activity a week at last review.	Baseline and latest review questionnaire
Beneficiaries with a BMI>25	(e) Weight loss	Number achieving a 5% weight loss at 6 months.	Baseline and 6 month review data.
Pre diabetic participants	(f) Lower risk of developing Type 2 diabetes	Number of participants with pre diabetes divided by 6.9 (based on a study showing that NNT was 6.9 to prevent one case of type 2 diabetes over a 3 year period).	Attendance data and desk based research.

Indirect participants: Partners/family members/friends of pre-diabetic or diabetic participants who attend the group with their partner for support.	(g) A healthier diet (for indirect participants)	Number of partners/family members/friends who have made some dietary change contributing to a healthier diet.	Attendance data
Project staff	(h) Increased future job prospects	Number of staff who identify that they have increased their knowledge and skills	Interviews
Westbank	(i) Raised the profile of Westbank	Number of organisations in contact with LWTC	Survey and discussions with LWTC staff
Volunteers	(j) Increased knowledge	Volunteers self-report on the value of the opportunity to their personal development / career	Survey
Westbank gym	(k) More integrated working	Increased communications internally	Survey and discussions
GP practices referring to the project	(l) Increased GP capacity (m) increased income	Number of fewer GP appointments for LWTC beneficiaries Number of GP surgeries referring to LWTC.	Estimated from monitoring data Discussions with Westbank
Local diabetes support group	(n) Accommodation for groups	Number of meetings held	Discussions with Westbank

Value

SROI analysis found that the net SROI ratio which takes account of the amount invested is 1:5.8 – for every £1 invested in LWTC, there is £5.80 of social return over a three-year period. The sensitivity analysis showed that the value of the social return for every £1 invested in the Westbank LWTC is likely to be between £1.30 and £6.57.

Outcomes experienced by participants account for 75% of the value of the social return created by the project, whilst 25% of the social return value generated is for outcomes experienced by other stakeholders.

The greatest value was against the outcome of participants decreasing their risk of developing type 2 diabetes. For the sensitivity analysis, this was removed. In doing so, the SROI ratio became £1 : £3.24.

Since the SROI evaluation report, there has been some stakeholder validation through presentations and critical discussion at events.

DISCUSSION

This study demonstrates a social return of investment for LWTC. It captures the wider benefits of the programme and includes the benefits experienced by a wider range of stakeholders than just the programme participants. This has implications for investing in future diabetes

prevention and early intervention programmes. Further research is needed to see if these benefits and social return on investment is replicated where the programme is implemented in other areas.

The highest value proxy used in the SROI was £7,712 against the outcome of participants decreasing their risk of developing type 2 diabetes. The impact value accounts for 41% of the total impact in the evaluation. The financial proxy was based on the value game with the focus groups. It has been included in the original estimate because whilst highly subjective, it was valued from consultation with those who identified the outcome. It is acknowledged that there are limitations to this approach. For the majority of participants, it was felt that this is what they valued most about the programme but also felt that they could not assign a monetary value to it. For many, they felt this was a truly priceless outcome and thus you would expect a high financial proxy in the SROI. However, this has the potential to skew the overall ratio at the end because the value is high and a large proportion of people experience the outcome. This was removed in the sensitivity analysis.

The outcome of 'lower risk of developing type 2 diabetes' was discussed within the focus groups. The majority of participants with pre-diabetes felt very strongly that they valued the group supporting them to change their risk of developing type 2 diabetes. It could be argued that this is the summative outcome from all of the other participant outcomes, and thus by including it might double count and over-estimate the impact of the project. However, the qualitative research showed that it was the overall feeling that participants gained from this idea of decreasing their risk and should be valued as something separate.

Valuing the outcome of 'lower risk of developing type 2 diabetes' was problematic. The literature review explored studies valuing risk reduction and diabetes prevention outcomes, and it is clear that this is an area of work where there is very limited economic evaluation. The outcome also captured how people felt about their future. Feelings can be difficult to place a value on but this is where the SROI methodology has a real benefit in at least attempting to capture these sorts of outcomes.

One limitation of the study was that the focus groups were with participants who had been involved with LWTC for at least six months. This was to ensure that they had been part of the programme long enough to experience changes. However, the outcomes for people at a different one month or their three month review point might have produced different results as experiences may change over time [3]. A further limitation of the study was that we only had a limited opportunity to consult and validate our findings with stakeholders.

CONCLUSIONS

The aim of this study was to understand and quantify the social value created by the Westbank LWTC programme. Findings from this study demonstrate that a community-based diabetes prevention and management education programme has the potential to be a worthwhile investment, not only in terms of outcomes for participants, but also the wider outcomes for staff, volunteers, family and friends of the participants, and the organisations involved. Whilst it demonstrates a financial return, the process of using the SROI methodology undoubtedly also creates the additional benefit of involving stakeholders in a meaningful way. It provides an insight into what stakeholders view as the main benefits and the degree to which they value these.

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