The DOROTHEA programme: Health professionals' and participants' views

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Article points

1. Exercise referral schemes have high dropout rates; it is expected that only 20% of participants will complete the programme.
2. Previous research has found that the facilitators of exercise programmes seem to be key in increasing adherence.
3. High retention rates in exercise programmes can be achieved with appropriate and modest levels of support.

Key words

- Exercise programme
- Motivational interviewing
- Physical activity promotion
- Retention levels

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Diabetes On Referral Option To Healthy Exercise for Adults (DOROTHEA) was a 12-month physical activity promotion programme that used motivational based exercise consultations among a population of adults with type 2 diabetes. The programme was piloted in a successful randomised controlled trial within locally-provided diabetes services (Kirk et al, 2004). It proved very successful at increasing physical activity levels and retaining participants. As part of the evaluation study of DOROTHEA, short semi-structured telephone interviews were conducted with a random selection of all those who had been involved in the programme. While the interviews sought to explore all the different aspects of the programme, this article focuses on what the interviews revealed about DOROTHEA's ability to achieve such high retention levels.

Physical activity interventions have high dropout rates. In the UK, attendance levels at exercise referral schemes are estimated to drop, on average, to around 20% (Gidlow et al, 2005). Research into the reasons for these low attendance rates has found that barriers included inconvenience due to timing of programmes, lack of transport and a general dislike of the gym environment (Gidlow et al, 2005). Facilitators of these programmes have also been found to be a significant factor in increasing participants' adherence; reasons for attrition included problems with the staff and the level or type of programme they set for participants (Lippke et al, 2003).

Those interventions that have been more effective at increasing levels of moderate activity and attained higher adherence levels have had a motivational aspect to the programme, have tended to be more intensive and have focussed on home-based activities (Morgan, 2005). Adherence to home-based activities has also been found to increase when accompanied by a regular exercise class (Thomas et al, 2004).

The DOROTHEA programme pilot study

DOROTHEA (Diabetes On Referral Option To Healthy Exercise for Adults) was an activity promotion scheme piloted in adults with type 2 diabetes (Gauvin et al, 2006). It used individualised physical activity counselling based on the trans-theoretical model, motivational theory and cognitive behavioural strategies.

A total of 225 adults with type 2 diabetes from two inner London PCTs took part in DOROTHEA. The intervention involved hour-long face-to-face consultations with an exercise specialist at 0, 3 and 12 months and telephone support at 1, 4 and 9 months, which aimed to follow-up everything that had been discussed in

the previous consultation, offered support and considered any relapse prevention.

The intervention focussed on facilitating the participants to build more physical activity into their daily routines. General activities, such as walking and home-based activities such as gardening were promoted, the focus of the consultation being based around the kinds of activity most suited to the individual. This was achieved by looking at any physical activity already part of the individual's daily life and building on it, adding time, frequency and intensity. Community-based exercise options were also offered locally at little or no charge. These activities were designed to be as accessible and enjoyable as possible.

DOROTHEA's retention rates were unusually high, with 167 (74.2%) participants attending their 12-month consultation.

Evaluation of participants' and health professionals' views of DOROTHEA

Letters were sent to all the non-completers, defined as participants who had attended an initial consultation, but stopped contact with the programme at some time before the 12-month consultation. At the time that this part of the study was carried out, the total number of non-completers was 39. We were able to contact 23 of these people, 17 of whom agreed to be interviewed (a response rate of 74%).

At the time of interviewing a total of 38 people had completed DOROTHEA, defined as attending both initial and 12-month consultations. Each of these completers were systematically contacted three or more times by telephone at different times on different days over a period of about 3 weeks and the first 20 people we were able to contact were interviewed (a response rate of 100%).

Demographic characteristics of the DOROTHEA participants interviewed are summarised in *Table 1*. As reported previously (Gauvin et al, 2006), analysis of those who attended the consultations and those who did not, in terms of demographic and baseline characteristics, showed no statistically significant differences between those who attended and those that did not, with one exception: Afro–Caribbean participants were more likely to attend at 3 months than those who were Caucasian or Asian. This difference was not detectable at 12 months.

Table 1. Demographic characteristics of the 37 participants interviewed.

Gender	Male	15
	Female	22
Ethnicity	Caucasian	17
	Asian	2
	Afro–Caribbean	18
Age (years)	≤44	5
	45–50	3
	51–64	20
	≥65	9

The 37 practices that had referred patients were contacted by telephone and/or letter. Within approximately 1 month it was possible to speak to 21 health professionals from those practices; of these, 20 consented to be interviewed – 16 practice nurses and four GPs (an overall response rate of 95%).

Confidentiality was assured. Ethics approval for the study was gained from the local research ethics committee (St Thomas' Hospital Research Ethics Committee). All of the interviews were semi-structured and conducted over the telephone. There were six topic guides for the interviews, one for each of the following groups of participants.

- Non-participants – those who decided not to attend any of the programme.
- Partial completers – those who attended the first consultation but, for whatever reason, did not complete the full 12 months.
- Completers – those who completed the full 12 months.
- Professionals who do not remembering hearing about DOROTHEA.
- Professionals who had heard about the DOROTHEA programme but chose not to refer.
- Professionals who did refer individuals to the programme.

The topic guides were short and contained a mixture of open and closed questions about different aspects of the programme.

In exploring reasons for lack of uptake or adherence, care was taken first to ask an open

Page points

1. The intervention focussed on facilitating the participants to build more physical activity into their daily routines.
2. DOROTHEA's retention rates were unusually high, with 167 (74.2%) participants attending their 12-month consultation.
3. This study involved 17 non-completers, 20 completers, 16 practice nurses and four GPs.

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1. The participants reported finding the consultations very helpful spoke affectionately and enthusiastically (on first-name terms) about the exercise specialists.
2. Three major themes emerged from the feedback on how the consultations helped to overcome barriers to exercise: information, practical ideas and support.

question to elicit the respondents' first thoughts and own perspectives. The question depended on which group the individual belonged to, for example, conversations with non-participants began with the interviewer asking something along the lines of: 'some time ago you were invited to attend DOROTHEA and chose not to – we're interested in hearing why you made that decision'; whereas non-completers were asked something like: 'some time ago you were stopped attending the DOROTHEA programme – can you tell us about why you stopped going?' (Note that these are illustrative as the interviews were not scripted.) Following this, prompts were used to explore other potential reasons for lack of uptake or adherence. These prompts were drawn from the research literature. 'Did you find it difficult to get to the place where the appointments were?' and 'Did you have any health problems that interfered with going to the appointments?' are illustrative examples.

Detailed notes were taken of each telephone interview. Analysis of the interview data followed the guidelines set out by Miles and Huberman (1994). Careful attention was paid to identifying any emergent themes in the open responses, as well as analysing the data against the themes that formed the structure of the topic guide.

Results

The following results focus on the themes that emerged from the interviews that seemed particularly salient as to why DOROTHEA was so successful at retaining participants; examples of participant responses that illustrate these points will be used. First, the main findings from the interviews with participants will be discussed first, followed by the findings from interviews with the health professionals involved in the programme.

Interviews with participants

Participants were asked their views about, and experiences of, the following areas of the programme.

- Consultations with exercise specialist.
- Follow-up telephone calls.
- Group activities.

The main findings in each of the areas will be discussed in turn, followed by a summary of the main health benefits that participants noted as a result of taking part.

Consultations

The participants reported finding the consultations very helpful and perhaps more notably spoke affectionately and enthusiastically (on first-name terms) about the exercise specialists. The participants found that the exercise consultants understood their personal situation, were willing to listen and were free to discuss any questions.

> *'They helped you integrate it into your lifestyle. I used to think of the gym and didn't have the time before I met [name of exercise specialist]. Now I do walking and jogging with one of my children.' (Female, Afro–Caribbean, age 51–64 years)*

Three major themes emerged from the feedback on how the consultations helped to overcome barriers to exercise. Firstly, they provided participants with information about the benefits of exercise in relation to their diabetes.

> *'Now I know it will be of benefit [to my diabetes] I will continue.' (Female, Afro–Caribbean, age 51–64 years)*

> *'Didn't know before I went that exercise could help my diabetes.' (Female, Afro–Caribbean, age 51–64 years)*

> *'Having the information has really helped.' (Female, Caucasian, age 51–64 years)*

Secondly, the consultations were practical and provided participants with new ideas in a way that was applicable to their individual situation:

> *'Practical and to the point.' (Male, Caucasian, age 51–64 years)*

> *' … he always had new ideas.' (Male, Afro–Caribbean, age 51–64 years)*

> *'… gave me the motivation … I now walk to Sainsburys.' (Male, Caucasian, age ≥65 years)*

> *'They were interested in dovetailing it to me personally … feel healthier as a result.' (Male, Caucasian, age 51–64 years)*

Thirdly, the consultations were of a supportive nature:

> *'… being watched over without criticism … a gentle push.' (Female, Caucasian, age ≥65 years)*

> *'… the way she spoke to you, made you motivated and really able to get into it … I never used to*

exercise.' (Female, Afro–Caribbean, age 51–64 years)

'… [he] would go out of his way to help you.' (Male, Afro–Caribbean, age 51–64 years)

Follow-up telephone calls

The follow-up phone calls were also found to be a welcome component of the programme with nearly all of the participants reporting that they had found them supportive and motivating:

'Then you know you are not on your own, give you comfort and helped with any problems.' (Female, Afro–Caribbean, age 51–64 years)

'It was good they took the time to call you, very good.' (Male, Afro–Caribbean, age 51–64 years)

Group activities

While the group activities were not the main aspect of the programme, they were attended at some point by 10 of the completers interviewed. Unsurprisingly the major contributing factors as to whether a participant attended the sessions at least once was whether the venue was within easy travelling distance and whether he/she worked full-time:

'Don't work and it was easy to get to. Could just walk there and I went three times a week. I feel healthier.' (Female, Afro–Caribbean, age 51–64 years)

'I'd have gone to something if it had been nearer.' (Female, Caucasian, age 51–64 years)

Many participants commented on the helpful and supportive nature of the staff involved:

'Very helpful, there was a lot of support … very patient with you, if you forget what to do. I was scared to go the first time. I'd never been to the gym or rode a bicycle in my life – I do now!' (Female, Afro–Caribbean, age ≤44 years)

'Such a nice place, staff there are great. Always feel comfortable. If you forget how to do something or use something always someone to help you.' (Female, Afro–Caribbean, age 51–54 years)

Another reason for continued attendance was that participants found that being able to exercise with other people who understood their situation meant they benefited from a socially supportive environment:

'I really needed help to lose weight and keep fit. I didn't feel motivated, but other people were there and we helped each other. I'm normally laid back, but I looked forward to it.' (Female, Afro–Caribbean, age 51–64 years)

'The atmosphere it helps you go. I speak about it every day. You can attain things you didn't realise you could do … after my op especially.' (Male, Afro–Caribbean, age 51–64 years)

Health benefits

Many of those interviewed reported that one of the reasons they had continued to exercise was that they had seen improvements in their health:

'It really has helped the pain in my knees and hip.' (Female, Afro–Caribbean, age ≤44 years)

'It's really helped with my hypertension and my weight has gone down and I feel better.' (Female, Afro–Caribbean, age 51–64 years)

'Helps the muscles and I enjoy it.' (Female, Afro–Caribbean, age ≥65 years)

'I felt so much better for it … diabetes runs in the family so I know I need to be careful and manage it.' (Female, Caucasian, age ≥65 years)

'… gave me confidence in myself, found it very good, lost weight and I feel better.' (Female, Afro–Caribbean, age 51–64 years).

'At first I was so tight, first month terrible – so hard, but persevered. I'm now a lot healthier.' (Male, Afro–Caribbean, age 51–64 years)

Interviews with the health professionals

General views

Nearly all of the health professionals interviewed reported finding the DOROTHEA programme a valuable addition to the services available for their patients. The programme was seen as a useful support in their work with people with type 2 diabetes, as these quotes below illustrate:

'It was so wonderful to be able to shift the burden and hand them over to a programme that could help … Patients know that they need to exercise and I have educated them, but I had nothing concrete and practical to offer them. It's such a wonderful resource to help motivate themselves to exercise.' (Practice nurse)

'DOROTHEA is a very positive step. It's another way for patients to take control of their diabetes. All they have had is advice around medication and food, which is negative. This way they can do something positive towards controlling their diabetes. You are giving them something tangible and practical … Taking someone by the hand and encouraging them, with the structure, to do so.' (Practice nurse)

'I liked the way it encouraged people away from associating exercise with a treadmill or a gym.' (Practice nurse)

'If you just say you need to exercise they won't initiate it by themselves.' (Practice nurse)

Feedback received by health professionals from patients

The healthcare professionals were overwhelmingly positive about the feedback they had received from patients on their views of the programme; again, particular mention was made of the patients' relationships with the exercise specialists and the staff that had organised the activities:

'Those who went and stuck with it found it helpful, it motivated them and gave them encouragement. An individual consultation that was tailored to their needs. They all seemed to know [name of exercise specialist] and talk about her, she gave them guidelines and tailor-made support … people were definitely more focussed on their illness.' (Practice nurse)

'The people involved were fantastic. Patients and staff had complete confidence in them … Those who took it loved it – they loved the flexibility and the people involved. No negative feedback.' (Practice nurse)

'Some of their weight did go down. I did not see much change in their HbA_{1c}. They did report an increase in their physical activity.' (GP)

The health professionals suggested that the participants had found the DOROTHEA programme effective for the reasons shown in *Table 2*.

Conclusion

Overall, the views and experiences of those who took part in DOROTHEA were very positive. Problems with the programme concerned the location of the consultation and activities for some of the participants. The health professionals had found the service a beneficial addition to the services available for patients with type 2 diabetes and had received a lot of positive feedback from their patients.

As other research has shown, the facilitators of these programmes seem to be key to increasing adherence (Lippke et al, 2003) and their role in DOROTHEA's ability to retain such a large number of participants should not be underestimated. Both the healthcare professionals and participants reported that the participant's relationship with the exercise specialist, both in the consultations and at the optional activity sessions, seemed to play a crucial role in the participant's positive experience. Many of the participants talked affectionately about the staff involved, as well as the mutual support received from other participants. It seems that this, together with the provision of an individualised

Table 2. Suggested reasons as to why participants found the DOROTHEA programme effective, as reported by healthcare professionals.

They received tailor-made advice and individualised support and encouragement, both at the consultations and classes.	*'Those who went and stuck with it found it helpful, it motivated them and gave them encouragement. An individual consultation that was tailored to their needs … she gave them guidelines and tailor made support… people were definitely more focused on their illness.' (Practice nurse)*
The programme showed participants how to incorporate exercise into their daily life rather than just focussing on formal types of exercise.	*It's good for them to learn that the only type 'of physical activity is not in the gym.' (Practice nurse)*
	'It helped them become more confident about exercising. It dealt with a lot of peoples' fears about exercise. Showed how you could – well, anyone could – incorporate it into their daily life. Got them really interested. Showed how you don't have to dress in a special way or go to the gym to exercise.' (GP)
The exercise spaces and activities provided were not threatening.	*'It was great they offered 'non-gym' based exercise; people would say that it was not a gym environment, not a proper gym, there was a relaxed atmosphere.' (Practice nurse)*
	'It certainly made a difference, helped them lose their anxieties about exercise, helped their confidence. It also gave them somewhere to go.' (GP)
The activities provided a supportive and friendly atmosphere where participants were able to meet other people with type 2 diabetes.	*'It helps if people can meet others in the same situation … They like to go and meet others especially the older ones.' (Practice nurse)*

support package, provided a framework that sustained participants' motivation.

DOROTHEA also seemed to be able to overcome a number of barriers previously reported as hindering attendance (Morgan, 2004; Thomas et al, 2004; Gidlow et al, 2005). The location and timings aimed to be as flexible as possible, with the focus on home-based physical activity; the programme also offered more formal exercise activities in a non-threatening environment.

Along with issues of convenience, it seems that supporting the individual in a personalised fashion, with multiple exercise options that include a socially supportive environment, increases participation, and this in turn gives participants a chance to feel the benefits in their overall health, which further motivates adherence. ■

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