

Diabetes self-management training and psychological support weekends

Hannah Smeesters, Chas Skinner,
Jo Martin

Article points

1. This study evaluated the effects of a support weekend for adults with diabetes.
2. Diabetes Empowerment Scale scores were significantly higher one week after the course compared with at baseline for each of the subscales.
3. Scores for assessing dissatisfaction, readiness to change and setting and achieving diabetes goals were significantly higher after 3 months compared with at baseline.

Key words

- Self management
- Patient education
- Psychological support

Hannah Smeesters is a Research Associate at Diabetes UK; Chas Skinner is Associate Professor in Health Psychology at Wollongong University, Australia; Jo Martin is Support Project Development Manager at Diabetes UK, London.

A lack of knowledge in diabetes self-management skills, such as insulin administration, glucose testing and diet, have been identified in a high percentage of adults with the condition ever since insulin treatment was first introduced (Watkins et al, 1967; Murata et al, 2003). Adult support weekends that offer diabetes information and emotional support in an informal workshop setting may help enable better self management for people with diabetes by addressing these issues.

Diabetes self-management training is considered an essential part of clinical management: simply prescribing the correct amount of insulin and oral agents and drawing up meal plans is not always enough to meet blood glucose targets (WHO, 1998; Mensing et al, 2007). Research does not only indicate the need for self-management education in terms of the practical implications of living with diabetes and the pathophysiology of the condition; it has also made evident the importance of psychosocial aspects of living with diabetes in diabetic care (Anderson et al, 1995; Speight and Bradley, 2001).

Being diagnosed with a chronic illness can cause a wide range of emotional reactions, such as anger, denial, sadness and anxiety, which can negatively affect the adjustment process (Jacobson et al, 1990; Rubin and Peyrot, 1992; Polonsky et al, 1995). Psychological adjustment to accept a condition such as diabetes is necessary owing to

the changes in lifestyle required for the successful management of this condition (NICE, 2004).

There is limited literature surrounding support weekends for adults with diabetes; the available research is focussed on the impact support camps have on children and adolescents (ADA, 2000; Norris et al, 2002). In the paediatric context, studies have shown the camping experience plus diabetes education to be beneficial: participants gain knowledge and learn specific diabetes management skills that can lead to improved glycaemic control (Strickland et al, 1984; Braatvedt et al, 1996). Participants also benefit from the friendships and support networks formed at such an event – factors that have been shown in several papers to aid the acceptance of the condition (Misuraca et al, 1996; ADA, 2000). Studies have further indicated that the knowledge and skills gained are maintained after attending the educational camps (Gallagher and Horner, 1986).

It is possible to assume that an adult diabetes support weekend would be beneficial in terms of both practical knowledge and psychological well being as a result of the positive effects of diabetes camps for children. Meta-analyses of research involving adults with diabetes indicate that self-management education has positive outcomes, including improvements in skills, self-care behaviours, psychological outcomes and metabolic control in adults with diabetes (Brown, 1988; Clement, 1995; Norris et al, 2001).

Aims

Diabetes UK runs support weekends for adults in an attempt to offer diabetes information and emotional support in an informal workshop setting to enable better self management for people with either type 1 or type 2 diabetes. The Diabetes UK weekends are not seen as a replacement for structured education courses such as DESMOND or DAFNE. Research suggests that people recently diagnosed with diabetes were not always receiving clear information about the condition and wanted additional emotional and peer support (Care Interventions Team, 2001). The weekends were designed to fill this gap.

The aim of this research is to evaluate the effect of a support weekend for adults with diabetes that was organised by Diabetes UK in 2006.

Methods

The diabetes adult support weekend was advertised in *Balance Magazine* and other Diabetes UK channels, including the website, conferences and mailings to healthcare professionals. Individuals who responded to the advertisement were sent a document containing information about the weekend and an application form. Seventy-eight past delegates with diabetes from a Diabetes UK 2005 programme were sent information packs and application forms, as the weekends are open to anyone who feels that they may benefit, regardless of whether or not they have attended previously.

Procedure

Tables 1–3 outline the content of the 3-day support weekend. Some leisure time was built into the programme to reduce the intensity for

delegates. Day 3 is a half day to allow delegates time to travel home. The events were based at different sites around the UK.

At present, the weekend is funded by Diabetes UK and staffed by volunteers. Thus, there is no direct cost to PCTs. However, there is a charge to delegates, with financial assistance available for those who are unable to meet the cost.

Table 1. Day 1 of the adult support weekend.

Duration	Session content
15 minutes	Ice breaker – getting to know each other.
45 minutes	Life after diagnosis – what are the issues?
45 minutes	Feed back to the whole group.
75 minutes	What is diabetes? Type 1 explained; type 2 explained.

Table 2. Day 2 of the adult support weekend.

Duration	Session content
60 minutes	Knowing your numbers: Explaining HbA _{1c} , lipids, blood pressure, BMI and weight.
60 minutes	Healthy eating.
60 minutes	Understanding food labelling.
60 minutes	Changing behaviour.
90 minutes	Getting physical: How to incorporate exercise and activity into daily life.
60 minutes	Demonstration of pens and monitors.
60 minutes	Quiz time.

Table 3. Day 3 of the adult support weekend.

Duration	Session content
45 minutes	What care to expect.
60 minutes	Living with diabetes: People with diabetes, partners and carers.
45 minutes	What the future holds.
30 minutes	Review and questions.

Page points

1. Meta-analyses of research involving adults with diabetes indicate that self management education has positive outcomes.
2. The aim of this research is to evaluate the effect of a support weekend for adults with diabetes that was organised by Diabetes UK in 2006.
3. The weekends are open to anyone who feels that they may benefit, regardless of whether or not they have attended previously.

Page points

1. At present, the weekend is funded by Diabetes UK and staffed by volunteers. Thus, there is no direct cost to PCTs. However, there is a charge to delegates, with financial assistance available for those who are unable to meet the cost.
2. In addition to providing an overall assessment of diabetes-related psychosocial self efficacy, the three subscales of the DES allow for an examination of its underlying components.
3. The questionnaires were sent out 1 month prior to the weekend, 1 week after and 3 months after the event.
4. Respondents had a mean age of 51 years and, on average, had been diagnosed for 5 years.

The team of multidisciplinary volunteers includes:

- nurses (mostly DSNs, but also practice nurses with a special interest in diabetes and nurses who have themselves been diagnosed with diabetes)
- doctors
- dietitians
- exercise experts
- people living with diabetes
- psychologists
- counsellors.

The number of delegates range from 20 to 40 per weekend, with a healthcare professional to delegate ratio of 1:4.

Measures

In 2000, the Michigan Diabetes Research and Training Center developed the Diabetes Empowerment Scale (DES) to measure the psychosocial self efficacy of people with diabetes. The DES is a valid and reliable measure of diabetes-related psychosocial self efficacy and is a useful outcome measure for a variety of educational and psychosocial interventions related to diabetes (Anderson et al, 2000).

The original questionnaire contained 37 items representing eight conceptual dimensions:

- assessing the need for change
- developing a plan
- overcoming barriers
- asking for support; self supporting; coping with emotion

- self motivation

- making diabetes care choices appropriate for particular priorities and circumstances.

Example statements used as part of the DES are shown in *Table 4*.

Using factor analyses, the questionnaire was reduced to the current 28-item DES, which has a Cronbach's alpha of 0.96 (where 0.96 is a high score indicating that the items are all measuring the same underlying factor) containing three subscales:

- Managing the psychosocial aspects of diabetes with nine items, Cronbach's alpha = 0.93.
- Assessing dissatisfaction and readiness to change with nine items, Cronbach's alpha = 0.81.
- Setting and achieving goals with ten items, Cronbach's alpha = 0.91.

In addition to providing an overall assessment of diabetes-related psychosocial self efficacy, the three subscales of the DES allow for an examination of its underlying components.

The effects of the support weekend were measured using the DES at three different time points. The questionnaires were sent out 1 month prior to the weekend, 1 week after the event and 3 months after the event. All three questionnaires were sent to all delegates, even if questionnaires one and two had not been returned. This was decided to be the most efficient approach from an administration perspective.

Results

In total, 61 participants (39% male; 41% type 1 diabetes) completed the baseline questionnaire; 52 returned the second questionnaire 1 week after the course and 32 returned the third questionnaire sent 3 months after the course.

Respondents had a mean age of 51 years and, on average, had been diagnosed for 5 years. At baseline, 42.6% were taking oral medication and 52.5% insulin. The overall results showed that 88.5% of respondents had not attended a diabetes education programme before. Of those whose data were included in the paired samples t-test, 12.5% had attended a diabetes education programme previously. In the authors' opinion, since this is a relatively low figure, it would not have a significant impact upon the results.

Table 4. Example statements used as part of the Diabetes Empowerment Scale.

Asking for support; self supporting; coping with emotion

In general, I believe that I can ask for support for having and caring for my diabetes when I need it.

In general, I believe that I know what helps me stay motivated to care for my diabetes.

Assessing the need for change

In general, I believe that I know what part(s) of taking care of my diabetes that I am dissatisfied with.

In general, I believe that I know what part(s) of taking part of my diabetes that I am ready to change.

Developing a plan

In general, I believe that I am able to decide which way of overcoming barriers to my diabetes goals works best for me.

In general, I believe that I can choose realistic diabetes goals.

An independent samples *t*-test revealed that there was not a significant effect of sex on any of the three DES subscale scores at baseline. Similarly, there was no significant difference between people with either type 1 or type 2 diabetes on any of the DES subscale scores and no significant differences from insulin treatment were found in any of the three DES subscale scores at baseline.

A paired *t*-test could not be used for the baseline and 3-month data owing to a sample size <30. *T*-tests for independent samples revealed that results from the assessments at baseline and 1 week post-course were not significantly different in terms of the following specific measures.

- How often diabetes prevents an individual from doing daily tasks.
- How able the individual is to fit diabetes into their life in a positive manner.
- How comfortable the individual is in asking the healthcare professionals questions.

In all cases $P>0.05$.

However, scores were significantly higher 1 week post-course compared with baseline for participants' rating of their understanding of diabetes and its treatment ($P=0.01$).

Further *t*-tests for independent samples showed that DES scores at baseline and 3 months post-course were not significantly different in terms of the same three measures as above; again, in all cases $P>0.05$.

DES scores were significantly higher 3 months post-course than at baseline for participants' rating of their understanding of diabetes and its treatment ($P=0.01$). This suggests that participants maintained a better understanding of diabetes and its treatment 3 months after the support weekend.

A paired samples *t*-test revealed that scores for each of the three DES subscales were significantly higher 1 week after the course compared with at baseline ($P=0.01$), indicating that participants' self efficacy in relation to diabetes management had improved (see *Table 5*).

Owing to a low response rate to the questionnaires sent out 3 months after the course, an independent samples *t*-test was used to compare the difference in DES subscale scores between baseline and 3 months. Results

showed that participants' ability to assess their dissatisfaction, their readiness to change and their ability to set and achieve diabetes-related goals were significantly higher 3 months after the course compared with at baseline ($P=0.01$). However, there was no significant difference between baseline scores and scores after 3 months for managing the psychosocial aspects of diabetes ($P>0.05$; see *Table 6*).

Discussion

Diabetes UK organises support weekends for adults who have either type 1 or type 2 diabetes in an attempt to offer them support, guidance and self-management education. These weekends are not designed to be compared to the DAFNE or DESMOND education courses as they are not themselves structured education courses as defined by NICE. The weekends should not be seen as an alternative to structured education but as another route to empowerment available to people with diabetes. In the authors' experience, not all people with diabetes will want to attend formal structured education sessions but may find these weekends extremely valuable.

Page points

1. There was no significant difference between people with type 1 or type 2 diabetes on any of the DES subscales, and no effect of insulin treatment was found at any of the three DES subscales at baseline.
2. Scores were significantly higher 1 week post-course compared with baseline for participants' rating of their understanding of diabetes and its treatment.
3. A paired samples *t*-test revealed that each of the three DES subscales were significantly higher 1 week after the course compared with at baseline.
4. There was no significant difference between baseline scores and scores after 3 months for managing the psychosocial aspects of diabetes.

Table 5. Paired samples *t*-test of DES subscales at baseline and 1 week after the course.

Subscale	Baseline mean (SD)	1 week mean (SD)	Degrees of freedom	<i>t</i>	<i>P</i> value
Managing the psychosocial aspects of diabetes	30.7 (6.0)	36.5 (4.7)	31	-5.87	<0.01
Assessing dissatisfaction and readiness to change	32.1 (4.6)	36.4 (3.6)	31	-4.79	<0.01
Setting and achieving diabetes goals	34.7 (6.0)	41.0 (4.8)	31	-5.25	<0.01

Table 6. Independent samples *t*-test of DES subscales at baseline and 3 months after the course.

Subscale	Baseline mean (SD)	3 month mean (SD)	Degrees of freedom	<i>t</i>	<i>P</i> value
Managing the psychosocial aspects of diabetes	22.8 (5.2)	25.1 (9.9)	87	-1.42	>0.16
Assessing dissatisfaction and readiness to change	21.5 (4.3)	26.2 (8.7)	82	-3.30	<0.01
Setting and achieving diabetes goals	24.4 (5.4)	28.9 (10.4)	82	-2.67	<0.01

Page points

1. The results presented here indicate that an individual's self efficacy in terms of the three DES subscales significantly improves immediately after attending the weekend.
2. These data also suggest that participants' empowerment in terms of dissatisfaction, readiness to change and setting and achieving goals remains significantly higher 3 months after the educational weekend.
3. These results indicate that the support weekend may require a greater emphasis on the psychosocial aspects of diabetes.
4. DSNs are able to contribute by referring patients who they feel may benefit from this kind of approach and volunteering to help on these weekends.

The weekends are open to anyone who wants additional information and support on diabetes. This can be people with diabetes, their partners, families and carers. The weekends are informal, have opportunities for peer support and sessions tailored towards partners and carers.

The results presented here indicate that an individual's self management, in terms of the three DES subscales, improves significantly immediately after attending the weekend. Relatively few participants had previously attended an education programme, which would account for the positive findings, especially in the paired samples t-test.

These data also suggest that participants' empowerment in terms of dissatisfaction, readiness to change and setting and achieving goals remains significantly higher 3 months after the educational weekend. However, participants' ability to manage the psychosocial aspects of diabetes was not found to be significantly higher after 3 months compared to baseline. These results indicate that the support weekend may require a greater emphasis on the psychosocial aspects of diabetes in order to sustain higher scores in relation to this topic. This hypothesis is supported by no increase in participants' ability to fit diabetes into their life in a positive manner after attending the weekend. This is not surprising when, on average, participants were 51 years of age, had only been diagnosed for a mean of 5 years and, therefore, were perhaps still going through the adjustment process and would benefit from more education focussing around the psychological and psychosocial impacts of diabetes.

Limitations

Despite the positive findings, there were several limitations to the research, which should be taken into account. First, there was no control group present; therefore, it can only be assumed that it is the content of the support weekend that is contributing to the positive findings. Second, there were missing responses to the DES questionnaire throughout the data. Finally, there were few data points for 3 months after the course, therefore making it difficult to attain the true validity of the

results that compare baseline with 3 months post event. Although there were limited responses at 3 months, this is no less than had been anticipated, as the DES is a relatively long questionnaire. If there had been a more consistent response rate over the 3 time periods then a paired samples t-test could have been used.

Conclusion

As research on the effects of diabetes education camps tends to focus on children and adolescents, this study provides worthwhile findings by showing how adults can benefit from weekend holiday-camp style self-management and education programmes. The results from this investigation also suggest that this is a successful means of providing practical knowledge and improving psychological wellbeing, which have been shown to benefit participants immediately and three months on. DSNs are able to contribute by referring people with diabetes who they feel may benefit from this kind of approach and volunteering to help on these weekends. Further evaluation of the 2006 weekends will be published later in 2007. ■

- American Diabetes Association (2000) *Diabetes Care* **23**(Suppl 1): S104–6
- Anderson RM et al (1995) *Diabetes Care* **18**: 943–9
- Anderson RM et al (2000) *Diabetes Care* **23**: 739–43
- Braatvedt GD et al (1996) *Diabetic Medicine* **14**: 258–61
- Brown SA (1988) *Nursing Research* **37**: 223–30
- Care Interventions Team (2001) *Needs of the Recently Diagnosed. Report and Recommendations of the Listening Project*. Diabetes UK, London
- Clement S (1995) *Diabetes Care* **18**: 1204–14
- Gallagher KL, Horner JM (1986) *Diabetes* **35**(suppl): 156A
- Jacobson AM et al (1990) *Diabetes Care* **13**: 375–81
- Mensing C et al (2007) *Diabetes Care* **30** (Suppl 1): S96–103
- Miller LV et al (1978) *Diabetes Care* **1**: 275–80
- Misuraca A et al (1996) *Diabetes Research and Clinical Practice* **32**: 91–6
- Murata GH et al (2003) *Diabetologia* **46**: 1170–8
- NICE (2004) *Type 1 diabetes. Diagnosis and management of type 1 diabetes in children, young people and adults*. NICE, London
- Norris SL et al (2001) *Diabetes Care* **24**: 561–87
- Norris SL et al (2002) *American Journal of Preventive Medicine* **22**(Suppl 4): 39–66
- Polonsky WH et al (1995) *Diabetes Care* **18**: 754–60
- Rubin RR, Peyrot M (1992) *Diabetes Care* **15**: 1640–57
- Speight J, Bradley C (2001) *Diabetic Medicine* **18**: 626–33
- Strickland AL et al (1984) *Diabetes Care* **7**: 183–5
- Watkins JD et al (1967) *American Journal of Public Health* **57**: 452–7
- WHO (1998) *Therapeutic patient education: continuing education programmes for health care providers in the field of prevention of chronic diseases: report of a WHO working group*. WHO Regional Office for Europe, Copenhagen