

SADIE: Type 1 diabetes education in Eastbourne

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Article points

1. In this article, the authors examine the audited outcomes of SADIE (Skills for Adjusting Diet and Insulin in East Sussex) structured education programme for adults with type 1 diabetes over a 5-year period.
2. HbA_{1c} levels, quality of life and body weight were compared at pre-assessment, and at 3, 6 and 12 months following completion of the SADIE course.
3. Participants of SADIE had reduced HbA_{1c} levels with significantly improved quality of life and neutral body weight change.

Key words

- Audit
- Structured education
- Type 1 diabetes

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Over recent years, a number of centres across the UK have developed their own local structured education programmes for diabetes. In 2004, the Eastbourne District Diabetes Centre developed the SADIE (Skills for Adjusting Diet and Insulin in East Sussex) structured education programme. In this article, the authors examine the audited outcomes of SADIE over a 5-year period. The measured outcomes were glycaemic control, quality of life and body weight changes. The audit revealed a significant 0.5% (5.5 mmol/mol) reduction in mean HbA_{1c} level at 1-year post SADIE, indicating a positive effect on long-term health outcomes.

Type 1 diabetes is characterised by a state of acute and ongoing chronic hyperglycaemia. It occurs as the result of an autoimmune process, which leads to the destruction of beta-cell function, resulting in an absence of insulin secretion (Williams and Pickup, 2000). The condition is associated with long-term microvascular, macrovascular and neurological complications. The DCCT (Diabetes Control and Complications Trial) Research Group (1993) confirmed that the development and progression of these complications can be effectively prevented and delayed by a programme of care that includes intensive insulin therapy.

The Department of Health (DH) *National Service Framework (NSF) for Diabetes Standards* (DH, 2001) states that people with diabetes should have access to advice and information through structured education. NICE (2003) considers education to be a fundamental part of diabetes care. The NICE (2004) *Type 1 Diabetes: Diagnosis and Management of Type 1 Diabetes in Children,*

Young People and Adults document is an appraisal of structured education in diabetes. It recognises the DAFNE (Dose Adjustment For Normal Eating) programme as a structured education and treatment package recommended as best practice (DAFNE Study Group, 2002). Over recent years, a number of centres across the UK have developed similar programmes locally.

In 2004, the diabetes specialist dietitian and a DSN from Eastbourne District Diabetes Centre attended the Bournemouth Diabetes Education Centre and received relevant training that enabled them to develop a structured education programme – SADIE (Skills for Adjusting Diet and Insulin in East Sussex). SADIE, along with other locally developed programmes, fulfils the following key criteria as identified by NICE (2003):

- Has a structured, written curriculum.
- Is patient-centred.
- Has trained educators.
- Is quality-assured.
- Is audited.

Table 1. SADIE inclusion and exclusion criteria.

Inclusion	Exclusion
<ul style="list-style-type: none"> ● Must have had type 1 diabetes for >2 years. ● Must attend all five sessions. ● Must be willing to commit to blood glucose testing. ● Must have basic numerical skills. ● Must be willing to share experiences. ● Must be on a basal–bolus insulin regimen. ● Must be willing to have clinical and non-clinical information used anonymously in an audit. 	<ul style="list-style-type: none"> ● People who are unable to cope with, or not willing to participate in, a group setting (e.g. some people with severe mental health problems). ● People aged <16 years.

SADIE: Skills for Adjusting Diet and Insulin in East Sussex.

SADIE is a member of the Diabetes Education Network (DEN; www.diabetes-education.net) and is awaiting accreditation.

In this article, the authors examine the audited outcomes of SADIE over a 5-year period (Jackson and Faulkner, 2010). The measured outcomes were glycaemic control, quality of life and body weight change. In addition, reference is made to the benefits of SADIE to prospective insulin pump users.

Background

SADIE is an intensive education programme for adults with type 1 diabetes. It is delivered for 30 hours, 1 day per week over 5 weeks. People are referred to the SADIE team from primary and specialist care colleagues across East Sussex. They are invited to a recruitment session allowing individuals the opportunity to understand the commitment involved in SADIE. At this session individuals are able to make an informed decision as to whether they wish to sign up to the programme. Before the start of each programme participants are invited to an individual pre-assessment appointment and, following completion of the 5-week programme, are followed-up at review appointments for 1 year, at 3, 6 and 12 months.

Participants are selected according to certain criteria, which are listed in *Table 1*.

Aims

The SADIE programme was audited to assess its effect on individuals' health and wellbeing

and compare them, through DEN, to similar programmes.

Method

Between October 2004 and June 2009, 64 people with type 1 diabetes had completed the full SADIE programme (including attending the post-SADIE follow-up appointments at intervals over 1 year). Of those 64, seven people did not attend one or more of the sessions or got lost to follow-up, three moved out of the area and two people chose not to continue. Therefore, records for 52 participants were audited.

Changes in glycaemic control, quality of life and body weight were compared at pre-assessment, and at 3, 6 and 12 months post-completion of SADIE, using the Minitab programme for statistical analysis. Participant experiences were collated using evaluation forms and personal email correspondence.

Glycaemic control was measured using HbA_{1c} levels. Quality of life was measured using the Problem Areas in Diabetes (PAID) scale, which was originally developed by the Joslin Centre in Boston in 1995 (Polonsky et al, 1995); its reliability and validity has been tested over time (Welch et al, 2003). PAID is a self-administered questionnaire consisting of 20 statements that cover a range of problems often reported by people living with diabetes. The individual answers are rated on a scale of 0–4: 0 being “not a problem”; 4 being “a serious problem”. The PAID questionnaire was completed on four

Page points

1. SADIE (Skills for Adjusting Diet and Insulin in East Sussex) is an intensive education programme for adults with type 1 diabetes.
2. The SADIE programme was audited to assess its effect on individuals' health and wellbeing.
3. Between October 2004 and June 2009, 64 people with type 1 diabetes had completed the full SADIE programme (including attending the post-SADIE follow-up appointments at intervals over 1 year).
4. Changes in glycaemic control, quality of life and body weight were compared at pre-assessment, and at 3, 6 and 12 months post-completion of SADIE.

Figure 1. Mean Problem Areas in Diabetes (PAID) scores for the 1-year period post-course completion.

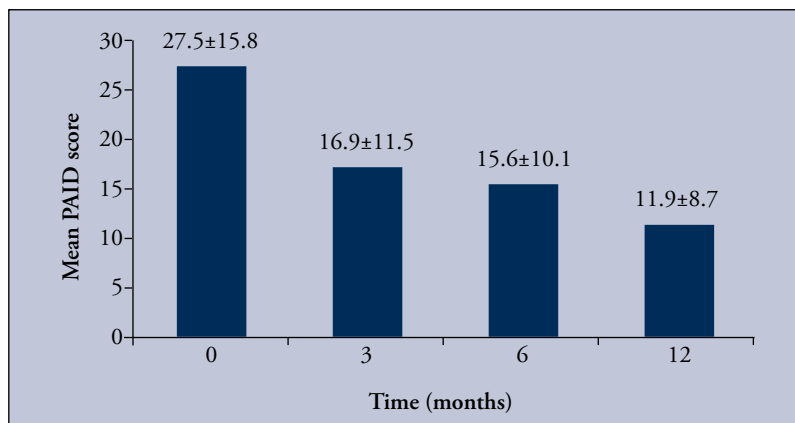
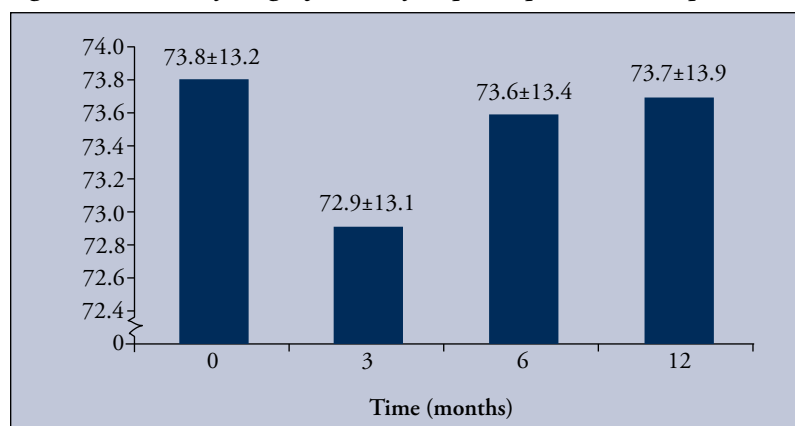


Figure 2. Mean body weight for the 1-year period post-course completion.



occasions. A maximum score of 80 represents a poor quality of life, a lower score is regarded as positive. Questions relate to four particular aspects of living with diabetes:

- Social – feeling uncomfortable in social situations related to your diabetes care.
- Emotional – feeling angry when you think about living with diabetes.
- Diabetes care – feeling discouraged with your diabetes treatment plan.
- Food-related – feelings of deprivation regarding food and meals.

Results

The records for 52 SADIE participants were audited (39 women, 13 men; aged 23–65 years). The results of the changes in quality of life, body weight and HbA_{1c} levels within 1 year of the completion of the SADIE programme are given below.

Quality of life

The mean score for the 52 participants was 27.5±15.8 at pre-assessment; this was significantly reduced to 11.9±8.7 after 12 months ($P<0.0001$). The mean scores for all time intervals are shown in Figure 1.

Weight

The mean body weights of the SADIE participants for all time intervals are shown in Figure 2. Weight neutrality was demonstrated as there was no statistically significant change in body weight over the 1-year period.

Glycaemic control

Glycaemic control, as measured by HbA_{1c} level, improved over the 1-year period post-SADIE. Compared with the mean pre-assessment level, there was a statistically significant reduction in mean HbA_{1c} level of 0.5% (5.5 mmol/mol; $P<0.0001$) at 1-year post-SADIE. The results for all mean HbA_{1c} levels at each time interval are shown in Table 2.

Feedback from SADIE participants.

During the last session, as part of the evaluation process, participants are encouraged to comment on any element of the SADIE programme. A few of the comments received are shown below (direct quotes used):

“I don’t know how I managed to cope with diabetes for over 20 years without this amazing system – yes, I still have blips, but these are generally due to either forgetting how to add up (!) or having one biscuit too many to treat a hypo. All in all though it’s pretty amazing.”

“This SADIE course has, without any question at all, been the most helpful, positive and practical help I have had in attempting to control my type 1 diabetes over the past 45 years since I was first diagnosed.”

Discussion

Quality of life is an important aspect of living with diabetes and studies (e.g. de Groot et al,

Page points

1. The records for 52 SADIE (Skills for Adjusting Diet and Insulin in East Sussex) participants were audited (39 women, 13 men; aged 23–65 years).
2. Glycaemic control, as measured by HbA_{1c} levels, was improved over the 1-year period post-SADIE.

Table 2. Mean HbA_{1c} levels for the 1-year period post-course completion.

	Pre-assessment	3 months	6 months	12 months
HbA _{1c} level (%)	8.4	7.9	8.1	7.9
HbA _{1c} level (mmol/mol)	68	63	65	63

2001) have shown that people with long-term conditions have an increased incidence of psychological issues. Many of the feedback comments made by SADIE participants reflect their newly acquired feelings of liberation and food freedom, which impacts their experience of living with and self-managing the long-term condition of diabetes.

One of the founding principles of SADIE is that people with diabetes realise that they can eat what they like when they like and be confident to take the correct dose of rapid-acting insulin. However, embracing this philosophy could indicate that there is a risk for participants to gain weight, as they might make more energy-dense food choices.

With no significant reductions in the mean body weight for the participants of this study over the 1-year post-SADIE period, the audit was able to demonstrate weight neutrality when adopting the SADIE principles. Concerns regarding potential "over liberalisation" of food choices resulted in the inclusion of a session discussing the importance of healthy food choices and weight control into the SADIE programme.

While recognising that for some people with type 1 diabetes a reduction in HbA_{1c} levels may increase their risk of hypoglycaemia, many individuals continue to strive for its reduction. The DCCT Research Group (1993) demonstrated that intensive blood glucose control is able to reduce the risk of eye disease by 67%, renal disease by 50% and neuropathy by 60% compared with conventional therapy. This audit has shown a significant 0.5% (5.5 mmol/mol) reduction in mean HbA_{1c} level 1 year after completion of the structured education programme, which would have an impact on reducing long-term complications.

A multidisciplinary insulin pump service was set up in Eastbourne in August 2008. The pump team took the decision that all prospective pump patients should undertake SADIE as part of the pre-pump education prior to the commencement of insulin pump therapy. By May 2009, 21 referrals had been received to be considered for an insulin pump. Following completion of SADIE, only six of the participants went on to have insulin pump therapy initiated. The other 15 felt that the skills and knowledge gained from the SADIE experience gave them new confidence to manage their diabetes with multiple dose insulin injections.

Conclusion

The knowledge and skills that participants gain through the SADIE approach of supporting people with type 1 diabetes gives confidence to people, with life-changing effects. Nationally recognised intensive education programmes, similar to SADIE, are commended for their outcome benefits and their statistically improved outcomes in glycaemic control, quality of life and treatment satisfaction (DAFNE Study Group, 2002). Unfortunately, there is a lack of published data regarding the outcomes of locally developed structured education programmes such as SADIE.

This audit has shown SADIE's outcomes to be equal to those of a national programme, as participants of SADIE achieved reduced HbA_{1c} levels while significantly improved quality of life and maintained neutrality of body weight. In addition, the demonstrated significant 0.5% (5.5 mmol/mol) reduction in mean HbA_{1c} level at 1-year post SADIE has a positive effect on long-term health outcomes. ■

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