



Therapeutic education seminars for patients with type 1 diabetes and their relatives

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Introduction

Diabetes is a chronic illness that requires continuous medical care and patient self-management education to prevent acute complications and to reduce the risk of long-term complication.¹ Diabetes self-management education (DSME) is the cornerstone of care for all individuals with diabetes who want to achieve successful health-related outcomes.²

The education of people with diabetes and/or relatives was a necessity even before the discovery

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Abstract

Background: Patients and relatives currently increasingly demand more information and support, not only from the diabetes team but also from alternative new sources such as patient association groups and websites.

Aim: To evaluate the impact and acceptability of intensive, interactive therapeutic education seminars conducted with different autonomous communities in Spain.

Patients: Patients with type 1 diabetes from a number of autonomous communities in Spain were included from 2003–2006 (inclusion criteria: aged from 18–50 years, type 1 diabetes progression > 1 year).

Method: Information on the seminars was provided through websites, diabetes teams and patient associations. The programme design and topics discussed were based on surveys to determine patient interests. The programme was designed from an interdisciplinary perspective, based on the topics most frequently selected by the patients: diabetes, sport, psychological and legal aspects. The seminars were held on weekends with the following structure: presentation and discussion of patient expectations; the diabetes knowledge test (DKQ2) was undertaken; topic development followed the problem-based learning method, DKQ2 was repeated and an opinion questionnaire was distributed at the end of the seminar.

Results: One hundred and fifty-one patients with type 1 diabetes were included. Seminar information was obtained through patient associations (52%); websites (27%), diabetes teams (11%) and other sources (10%). The scores of the initial and final DKQ2 tests were 26.6±4.2 and 29.2±2.9, respectively (p=0.001). The global evaluation of the opinion questionnaire (scores from 1 to 7) was 6.5±0.1. A total of 100% of the patients would recommend the seminar and 98% would attend future seminars.

Conclusion: These results suggest that interactive therapeutic education seminars, conducted in separate autonomous communities and adapted to specific group needs, may be a good alternative to complement the current therapeutic education programmes provided in diabetes centres in Spain.

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Key words

Type 1 diabetes; therapeutic education; interdisciplinary perspective; relatives

of insulin, and since the introduction of insulin treatment it has become more relevant. This has been further reinforced by studies demonstrating its efficacy.^{3–6}

Since the 1980s therapeutic education in diabetes has become a fundamental pillar in the treatment of diabetes and many scientific societies have promoted the implementation

of therapeutic education programmes at both the onset and in ongoing management of this disease with the aim of helping each patient achieve optimum metabolic control and the best possible quality of life. The societies of note are: Diabetes Education Study Group (DESG), the Educational Council of the American Diabetes Association



(ADA), and the International Diabetes Federation (IDF) among others.^{7–9}

Since the 1980s, healthcare teams for people with diabetes in Spain have incorporated these educational needs into the services provided in both primary and secondary care.

Spain has a population of 44 million; 4% to 6% of whom have diabetes.¹⁰ The country is made up of different autonomous communities, some of which manage their own public healthcare resources. This may explain why different healthcare services may vary based on the needs of the population, the existing economic resources or the sensitivity of the public administrators, bearing in mind that healthcare is universally available.

Autonomy and quality of life for people with diabetes is only achievable through a dynamic partnership with healthcare providers, and therapeutic education plays a fundamental role. Unfortunately, this need has not yet been fully accepted and adopted in day-to-day care.

The Sociedad Española de Diabetes (SED) recommends that the follow up of people with type 1 diabetes should be carried out in hospital centres with interdisciplinary teams, thereby covering all the clinical and educational needs of the patients and/or relatives.¹¹

Despite these programmes the educational needs of many patients and/or their relatives have increased and they are seeking more information and exploring other therapeutic approaches through diabetic associations and, more recently, through websites.

Contact with other people who have diabetes can really help, and the positive results achieved by summer camps for children and young adults with diabetes in the early period after diagnosis of the



Figure 1. Autonomous communities in Spain

disease are well known.¹² These activities are available for individuals up to the age of 18, but few initiatives of this kind are available for those patients with diabetes over the age of 18 years.

The Diabetes Foundation is an organisation that collaborates closely with patient associations and is sensitive to their needs. The organisation asks specialised diabetes professionals to organise weekend seminars where young adults with type 1 diabetes are able to exchange opinions, widen their knowledge and learn how to manage aspects of life including legal problems, psychological difficulties and sport.

The aim of this study was to evaluate the acceptability of a new intercommunity therapeutic education seminar on diabetes.

Patients and methods

Inclusion criteria for the study were: individuals had to be aged between 18 and 50 years with type 1 diabetes for more than one year. Patients with type 2 diabetes, psychiatric disorders and disabling chronic diabetes complications were excluded.

The seminar took place over a weekend (all day Saturday from 9:00–20:00 and Sunday morning from 9:00–14:00) in order to maximise participant attendance and avoid absenteeism from work, school or university. The venue was a hotel located in the city centre using one room for presentation of the seminar subjects with tables set aside for group work.

Educators and participants not from the city all stayed in the same hotel. The seminars received financial support from the Fundación para la Diabetes and the Fundació 'La Caixa', Cepsa, Caja España, Ministerio de Sanidad and DKV insurances.

Information about the seminar and the activities involved was disseminated through patient associations, the Fundación para la Diabetes website (www.fundaciondiabetes.com) and healthcare professionals.

Candidates were selected based on the inclusion criteria after they had completed an application form to establish initial data related to



	1	2	3	4	5	6	Total
Age (years)	24.5±3.4 (18–30)	20.0±6.3 (21–40)	27.8±6.9 (20–50)	26.0±6.3 (18–42)	29.2±6.4 (19–43)	29.3±6.9 (18–42)	27.7±6.3 (18–50)
Gender (M/F)	10/10	11/8	8/9	10/12	14/10	13/6	66/55
Duration T1D(years)	8.0±5.9 (1–23)	10.7±7.9 (1–29)	13.1±7.7 (1–24)	9.1±5.5 (1–18)	8.7±6.7 (1–20)	9.6±7.6 (2–26)	9.8±6.9 (1–29)
≤2 insulin injection/day	0	1	1	3	2	1	8
≥3 insulin injection/day	14	16	13	19	18	16	96
CSII	0	2	2	0	2	1	7
No answer Type treatment	6	0	1	0	2	1	10
Values are expressed as mean ± SD. Ranges are in brackets							

Table 1. Characteristics of the patients participating in the Autonomous Community Seminars of: Madrid (1), Valencia (2), Navarra (3), Cantabria (4), Castilla la Mancha (5), Extremadura (6)

their daily life, the course of their diabetes and the type of treatment they received.

All of the candidates completed a questionnaire with the aim of discovering the topics of greatest interest and what they considered to be their learning needs. The subjects proposed in the questionnaire were:

- Adapting diet to take account of specific situations, for instance restaurant menus, parties, unanticipated situations or changes in appetite
- Adapting insulin treatment i.e. supplements for going out at night
- Reasons for intensified treatment for diabetes
- Prevention and management of acute complications i.e. hypoglycaemia, hyperglycaemia, ketosis
- Preventing or delaying chronic complications in diabetes
- Self-control techniques i.e. modification of insulin schedule
- Sexuality, including contraception, pregnancy

- New perspectives in the field of diabetes i.e. current issues, research
- Sport and diabetes, psychological aspects, employment
- Other topics to be raised by participants.

The programme content had an interdisciplinary focus, with emphasis placed on the topics of greatest interest. These were divided into four groups:

1. Diabetes: importance of metabolic control, self-control and insulin treatment, acute decompensations, new perspectives in treatment, practical cases
2. Sport and diabetes
3. Psychological aspects and their implications
4. Legal issues including employment, driving, disability, insurance and medical care.

The programme was intensive, and was carried out over one weekend. The process followed

in the development of the programme was:

- Presentation and expectations of the participants and educators
- Completion of a questionnaire on current knowledge: diabetes knowledge questionnaire 2 (DKQ2). This questionnaire has 16 multiple choice questions with a total of 35 correct answers¹³
- Presentation of the topics to be covered: a) Introduction and interactive presentation of topics b) Work and discussion of some specific subjects developed following the problem-based learning method in groups of 7–10 people c) General impressions and opinions of the seminar.

The DKQ2 test was repeated and an opinion questionnaire was distributed at the end of the seminar. The questionnaire asked patients to give a global evaluation of the seminar and to specifically assess the different aspects covered: diabetes,



practical cases, sports, psychological and legal aspects. Likewise, the patients were asked if they would recommend the seminar to other people and if they would attend other similar seminars. Responses were scored on a scale of 1 to 7 where positive perceptions were indicated by a higher score. All the participants and educators gave their impressions of the seminar and these were taken into account in the organisation of a subsequent seminar.

Statistical analysis

All values are expressed as mean \pm SD or as a percentage. Changes from baseline values at the end of the study were compared using a Wilcoxon test. A *p* value of 0.05 was considered statistically significant. All statistical calculations were performed with the Statistical Package for Social Science (SPSS) for personal computers 10.0.

Results

One hundred and twenty-one patients with type 1 diabetes (55 females), some of whom came with relatives, participated in six seminars carried out in different autonomous communities in Spain: Community of Madrid (Madrid), Community of Valencia (Castellón), Community of Navarra (Pamplona), Community of Cantabria (Santander), Community of Castilla la Mancha (Cuenca) and Community of Extremadura (Cáceres) from 2003 to 2006 (Figure 1).

The characteristics of the participants with respect to distribution by gender, mean age, mean years of diabetes mellitus progression and type of treatment based on whether they received ≤ 2 doses of insulin, ≤ 3 doses of insulin or continuous subcutaneous insulin infusion (CSII) are shown in Table 1.

Seminar information was obtained through patient associations

Diabetes	
Importance of metabolic control	6.0 (5.4–6.4)
Self-control and insulin treatment	6.4 (6.1–6.7)
Acute decompensations	6.2 (6.0–6.5)
New perspectives in treatment	6.2 (5.7–6.6)
Practical cases	6.0 (5.8–6.4)
Sports	
Sports and diabetes	5.9 (5.3–6.3)
Psychological aspects	
Psychological implications	6.4 (6.3–6.6)
Legal aspects	
Laboural aspects	6.0 (5.4–6.4)
Driving license	5.9 (5.0–6.7)
Disabilities and diabetes	5.6 (5.0–6.1)
Insurance policies: physicians etc	5.7 (5.0–6.3)
Prevention laws	5.6 (5.1–6.1)
Values are expressed as mean and ranges are shown in brackets	

Table 2. Specific evaluation by topics performed by the participants in the Autonomous Community Seminars

(52%); websites (27%); diabetes teams (11%) and other sources (10%). The scores of the initial and final DKQ2 tests were 26.6 ± 4.2 and 29.2 ± 2.9 , respectively ($p=0.001$). The global evaluation of the opinion questionnaire (scored from 1 to 7) was 6.5 ± 0.1 . Table 2 describes the evaluation by topics: diabetes, sports practical cases, psychological and legal aspects (scored from 1 to 7). A total of 100% of the patients would recommend the seminar and 98% would attend future seminars.

Discussion

These results indicate that interactive, intercommunity, therapeutic education seminars adapted to specific group needs may be a complementary alternative to the current therapeutic education programmes provided in diabetes centres in Spain.

Many other parallel activities are carried out by the diabetic associations and/or the pharmaceutical industry. Many focus on sports and

activities for young people and adults, including the 'Route of Santiago' – a walk to the city of Santiago in Spain over eight days in 200 km sections by people with diabetes, organised by Asociación Puertorrealeña de Diabéticos; the half marathon of Granollers (2006), (organised by Diatlético group and promoted by Fundación para la Diabetes); and sports meetings like I Raid Ibérico Multiaventura One Touch® (2004) promoted by Lifescan laboratory.^{14–16}

An increasing number of diabetes-related websites have become available to help clinicians, patients, and healthcare services to obtain the information, tools, and support to address the many challenges involved in effective management of diabetes. Some online resources can help to improve patient adherence to recommended treatment regimens and healthier lifestyles.^{17–19}

It is also important to point out that telemedicine provides an exchange of information and



educational follow-up between the healthcare team and the patient without the need for frequent out patient visits.^{20,21} Many other educational interventions, largely aimed at younger people, have been undertaken to increase treatment compliance and patient and/or family autonomy.^{22–27}

The positive side of our seminars is that they facilitate the exchange of views between patients and professionals over one week-end. Many of these topics may have been dealt with by the patients' medical teams. However, multidisciplinary teams including professionals in psychology and law, who may provide a general assessment of mental health, legal or employment issues in which diabetes may be an important limitation are not available to all patients.

One limitation of this activity is the difficulty in evaluating the impact of the seminars on the improvement in diabetes control and quality of life of the participants. Following the seminars, those involved return to their routine and to date it has not been possible to co-ordinate follow-up.

In conclusion, the overall acceptability to and evaluation of these interactive seminars by the participants makes it clear that these activities may be a good alternative, to complement the therapeutic education programmes undertaken in type 1 diabetes healthcare centres.

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Conflict of interest statement:

None

References

- American Diabetes Association. Standards of Medical Care in Diabetes – 2006. *Diabetes Care* 2006; **29**: S4–42S.
- American Diabetes Association. Third-Party Reimbursement for Diabetes Care, Self-Management Education, and Supplies. *Diabetes Care* 2006; **29**: S68–69.
- Miller LV, Goldstein J. More Efficient Care of Diabetic Patients in a County Hospital Setting. *N Engl J Med* 1972; **286**: 1388–1391.
- Assal JPH, Albeanu A, Rieschb P, et al. Coût de la formation du patient atteint d'un diabète sucré. Effects de la prévention des amputations. *Diabète Metab* 1993; **19**: 491–495.
- Climont S. Diabetes Self Management Education. *Diabetes Care* 1995; **18**: 1204–1214.
- Maldonado A, Segal P, Golay A. The diabetes education study group and its activities to improve the education of people with diabetes in Europe. *Patient Educ Couns* 2001; **44**: 87–94.
- Diabetes Education Study Group: www.DESG.org [Accessed 20 May 2006].
- American Diabetes Association. Diabetes Education Goals: www.diabetes.org [Accessed 20 May 2006].
- International Diabetes Federation 2005. Clinical Guidelines Task Force: www.idf.org [Accessed 20 May 2006].
- Goday A, Serrano Rios M. Epidemiología de la Diabetes Mellitus en España. Revisión crítica y nuevas perspectivas. *Med Clin (Barc)* 1994; **102**: 306–315.
- Sociedad Española de Diabetes: www.sediabetes.org [Accessed 20 May 2006].
- Summer camps for children and young adults: www.diabetis.org [Accessed 20 May 2006].
- Lennon GM, Taylor KG, Debney L. Knowledge, attitudes, technical competences and blood glucose control of type 1 diabetic patients during and after an education programme. *Diabetic Med* 1990; **7**: 825–832.
- Route of Santiago: www.diabetesaldia.com [Accessed 20 May 2006].
- Half marathon: www.fundaciondiabetes.org [Accessed 20 May 2006].
- Sport activities: www.meridianoraid.com [Accessed 20 May 2006].
- Blonde L, Parking CG. Internet resources to improve health care for patients with diabetes. *Endocr Pract* 2006; **12**: 131–137.
- Zebriec JF. Internet communities: do they improve coping with diabetes? *Diabetes Educ* 2005; **31**: 825–8, 830–2, 834, 836.
- Heidgerken AD, Lewin AB, Geffken GR, et al. Online diabetes education: design and evaluation with prospective diabetes camp counselors. *J Telemed Telecare* 2005; **11**: 93–6.
- Jansà M, Vidal M, Viaplana J, et al. Telecare in a structured therapeutic education programme addressed to patients with type 1 diabetes and poor metabolic control. *Diabetes Res Clin Prac* (in press).
- Liesefeld B, Renner R, Neese M, et al. Telemedical care reduces hypoglycaemia and improves glycemic control in children and adolescents with type 1 diabetes. *Diabetes Technol Ther* 2000; **2**: 561–567.
- Cook S, Aikens JE, Berry CA, et al. Development of the diabetes problem-solving measure for adolescents. *Diabetes Educ* 2001; **27**: 865–874.
- Greco P, Pendley JS, McDonnell K, et al. A peer group intervention for adolescents with type 1 diabetes and their best friends. *J Pediatr Psychol* 2001; **26**: 485–490.
- Tatti P, Lehmann ED. A prospective randomised-controlled pilot study for evaluating the teaching utility of interactive educational diabetes simulators. *Diabetes Nutr Metab* 2003; **16**: 7–23.
- Nebel IT, Klemm T, Fasshauer M, et al. Comparative analysis of conventional and an adaptive computer-based hypoglycaemia education programs. *Patient Educ Couns* 2004; **53**: 315–318.
- Pelicand J, Gagnayre R, Sandrin-Berthon B, et al. A therapeutic education programme for diabetic children: recreational, creative methods, and use of puppets. *Patient Educ Couns* 2006; **60**: 152–163.
- Murphy HR, Rayman G, Skinner TC. Psycho-educational interventions for children and young people with Type 1 diabetes. Diabetes UK. *Diabet Med* 2006; **23**: 935–943.