Information and therapeutic education of diabetic patients in French hospitals: The Obsidia survey

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Abstract

Aim. – Although several studies have evaluated the efficacy of therapeutic education (TE) programmes in patients with diabetes and demonstrated the benefits of such interventions, operational aspects are rarely described. For this reason, this national survey was conducted to investigate TE in France, and to identify its obstacles and needs.

Methods. – A preliminary qualitative phase was extended to include a quantitative survey through face-to-face interviews, followed by a web-based self-administered questionnaire sent out to every healthcare professional dealing with diabetic patients.

Results. – From the expanded web-based survey, 272 questionnaires were analyzed (39% from academic hospitals, 54% from general hospitals and 7% from private clinics); 85% of these sites provided TE for inpatients. Overall, TE was offered to 66% of patients (84% new patients) and was individualized in 55% of cases, and involved 9.4 healthcare professionals on average, with physicians, nurses and dietitians making up the core team. The TE offered encompassed a wide range of diabetes topics. However, of every 10 healthcare professionals, only 35% received specific training, while 45% received coaching from their colleagues and 10% received no training at all. Evaluation of TE was carried out in 60% of teams by questionnaires or interviews.

Conclusion. – TE is well implemented in French hospitals, but lacks homogeneity and standardization. Training is inadequate from both qualitative and quantitative points of view, and evaluation of TE procedures needs to be developed. There is also a need for more funding and dedicated qualified staff, a lack of which is partly due to the fact that TE is not a recognized medical activity in hospitals.

Keywords: Therapeutic education; Diabetes mellitus; Organization; Training; Evaluation

Résumé

Observatoire de l’information et de l’éducation des patients diabétiques : l’enquête OBSIDIA.


Méthodes. – Phase préliminaire qualitative étendue ensuite à une enquête quantitative par interviews en face à face, suivie d’un questionnaire auto-administré en ligne, proposé à tous les professionnels de santé en charge de patients diabétiques.

Résultats. – Pour la phase de questionnaires en ligne, 272 questionnaires ont été analysés (CHU : 39 %, GHG : 54 %, cliniques privées : 7 %). Quatre-vingt cinq pour cent des centres proposent de l’ET aux patients hospitalisés. Globalement, 66 % des patients (84 % pour les nouveaux patients) reçoivent une ET, individuelle dans 55 % des cas. En moyenne, 9,4 professionnels de santé sont impliqués ; les médecins, infirmières et diététiciens forment le « noyau dur » des équipes. Les thèmes abordés couvrent une grande partie de la diabétologie. Sur dix professionnels, seulement 35 % ont reçu une formation initiale spécifique, 45 % ont été formés par leurs collègues et 10 % n’ont reçu aucune formation. L’évaluation est faite par 60 % des équipes, elle repose sur des questionnaires ou des entretiens avec le patient.

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1. Introduction

Diabetes mellitus is affecting an increasing number of people and has now become one of the world’s most worrying public-health issues. In France, recent figures show a prevalence rate of 3.95% for treated diabetes (2.5 million individuals) [1] based on Social Security data, which does not take into account undiagnosed cases and patients on dietary treatment only. This is a mean increase of 5.7% from 2000 to 2005, which is consistent with trends in other countries. For diabetic patients alone, the estimated cost for care was estimated at €12.5 million in 2007 [2], with medications and nursing care accounting for 27.2% and 8%, respectively. An efficient way to limit these costs is to reduce complications through optimal control of the disease.

Patient education has demonstrated its effectiveness in type 1 as well as type 2 diabetes, and is now considered a key element in patients’ management [3,4]. According to guidelines issued by the French National Authority for Health (Haute Autorité de Santé [HAS]), therapeutic education (TE) should be implemented as soon as diabetes is diagnosed, and preferably in a collective manner by a multidisciplinary team, including mainly physicians, nurses and dietitians [5]. The HAS has also published guidelines for TE programmes aimed at chronic diseases [6], thereby paying particular attention to this aspect of treatment strategy. However, little information is available on the practical aspects of TE and how it is carried out in hospitals [7,8]. In France, some localized experiments have been reported on, but there is no overall view of TE in our hospitals [9].

The present survey aimed to investigate the organization and content of TE as offered to diabetic patients in French hospitals (public and private practices with or without specialized diabetology departments), as well as the needs and expectations of healthcare professionals. The project was supported by Diabète éducation de langue française (DELF; French Language Diabetes Education Association) and Association de langue française pour l’étude du diabète et des maladies métaboliques (ALFEDIAM; French-Speaking Association for the Study of Diabetes and Metabolic Diseases).

2. Methods

The Observatoire de l’Information et de l’éducation des patients diabétiques (OBSIDIA; Observation of Information and Education of Diabetic Patients) was a national survey that consisted of three consecutive parts, starting with a preliminary qualitative phase (face-to-face interviews)—involving a thorough assessment of the activities, functioning and practices of TE—to build the appropriate tools for the subsequent parts—namely, a quantitative phase and a web-based questionnaire.

2.1. Qualitative phase

Face-to-face interviews were conducted in 16 hospitals spread out across six French regions. A questionnaire taking 30–60 min to fill out was administered to 16 diabetes specialists and 16 referral nurses, all of whom are responsible for patients’ education. The sample included seven departments of diabetology (four in academic hospitals, three in general hospitals) and nine other departments in general hospitals or private clinics, including a ‘house of diabetes’. The interviews focused on the type of healthcare professionals involved in TE; the organization, content and formalization of the programmes; the patients, tools and evaluation of activities; and the needs and expectations.

2.2. Quantitative phase

Face-to-face interviews were conducted at 75 centres, of which 84% were public hospitals, 27% were academic hospitals, 21% were general hospitals with (GH+) and 36% were without (GH−) endocrinology units, and 16% were private clinics. Altogether, 48% of the departments were specialized in diabetology. At each centre, a specialized physician and a non-physician TE referral health professional (usually a nurse) was given a questionnaire, similar to the one described above, taking 30–50 min to fill out.

2.3. Web-based questionnaire

The 6350 targeted healthcare professionals at 600 sites were sent a letter explaining the objectives of the survey and including a link to the website. The web-based self-administered questionnaires were posted on an open website from November 2007 to January 2008. They consisted of 41 questions relating to the organization, content, training, evaluation, obstacles and needs for developing TE. Only the TE teams’ referral members answered the questionnaire, while duplication was avoided by the appropriate controls. Descriptive statistics were used and comparisons performed using the chi-square or Fisher’s tests for categorical variables or Student’s test and/or ANOVA for continuous variables as appropriate.

The following terms and definitions were used in the present evaluation: individual education = face-to-face interventions with diabetic patients addressing a wide range of self-management issues; group education = structured patient-centred educational programmes suitable for a wide range
of participants; educational diagnosis = assessment including information on the patient’s relevant medical history, age, cultural influences, health beliefs and attitudes, diabetes knowledge, self-management skills and behaviours, readiness to learn and family support system; and type of training = methods for delivering education.

3. Results

3.1. Qualitative phase

The main finding was the heterogeneity of TE organization and behaviours that was related to the size, means, recruitment and background of the different sites. However, there was a consensus on the main objective of TE—namely, patient’s autonomy—although this may have been understood in various ways. The referral healthcare practitioners also agreed on the same TE design: an initial consultation for an educational diagnosis leading, theoretically, to a tailor-made programme as a contract with the patient. However, differences in available means led to a strategic split between academic hospitals, which can prioritize education with dedicated staff and set up educational programmes, and small hospitals or private clinics, where TE is much more improvised and individually constructed. In addition, the role of nurses, dietitians and nurses’ aides is key in the success of TE, as physicians have little time to dedicate to such activities. Last, but not least, the respondents all recognized the importance of having a relationship with private-practice caregivers dealing with diabetes patients to maintain the benefits acquired in hospital.

3.2. Quantitative phase

At the 75 surveyed sites (Table 1), TE implementation clearly depended on the presence of a specialized department. Academic and GH+ hospitals provided extensive TE, with dedicated programmes, funding and trained staff. On the other hand, in GH− hospitals and private clinics, patient education remained rather more a concept than a reality, and these institutions relied mostly on external networks. In particular, they usually did not offer group education, and did not have a week or day hospital unit dedicated to TE. Indeed, the only sites that participated in this quantitative phase were those implementing TE, yet only 53% had week hospital units wherein 36% implemented TE, and 59% had day hospital beds with <25% providing TE.

On average, the centres in the present survey saw 1344 (range: 655–2085) diabetic patients in 1 year (2006), including 318 new patients (24%). GH+ and academic hospitals saw the largest cohorts (2085 and 1626 patients, respectively). Most patients had type 2 diabetes (roughly two-thirds were taking insulin treatment), and their mean age was 60 years. Less than 25% could not read or understand French properly. Only 29% of the sites polled could manage non-French speakers, having interpreters at their disposal.

Overall, 60% of patients benefited from TE, with new patients accounting for 42%. Group education was given to 50% of patients (75% in academic hospitals, 50% in GH+ and only 31% in GH− hospitals). Written curricula were available in 63–73% of group sessions vs 25–50% of individual interventions, and home-made written teaching aids were available in 50% of cases. Interventions were routinely personalized and focused on patients’ needs, and their main goals were patients’ skills, responsibility, autonomy and improvement of medical outcomes (decrease in HbA1c levels). The programmes, however, were not regularly updated, and 7–14% of the departments had no written curricula for their programmes. In those departments with a written curriculum, only 45% of those in academic hospitals, 57% in GH− and 53% in GH+ hospitals had updated them within the last 3 years. However, the majority of departments (75%) had carried out an assessment of their educational programme and concluded that half the patients had achieved their objectives a year later.

The mean number of healthcare professionals involved in TE (≥2 h/week) was 18 (range: 11–27), with specialized physicians, nurses and dietitians making up the core team. Other contributors included nurse’s aides, podiatrists, sports coaches and psychologists in about half the teams. On average, 85% of healthcare professionals received specific training for TE, whatever its definition (100% for physicians, 75% for nurses and dietitians, and 50% for nurse’s aides). However, such training was far from homogeneous, somewhat outdated (>2 years), and lacking in team training, continuing education and/or high-level training for non-physician caregivers. Coordination among caregivers was mostly limited to the hospital team, as only 20% of the sites used connection forms to communicate with general practitioners or private-practice nurses.

Most TE difficulties were related to organization and, specifically, to the lack of funding, dedicated caregivers, facilities, coordination, handover from private-practice practitioners and sufficient training. The lack of recognition (including financial) was another obstacle to the development of TE. Also, expectations were slightly different between physicians and nurses: the former required more evaluation and practice analyses, while the latter needed more improvement in skills.

3.3. Web-based questionnaire

3.3.1. Participants

Of the 6350 healthcare professionals contacted by post, 529 filled in the questionnaires, of which 272 were complete and analyzed; these had come from 202 sites (33% of the contacted sites), including 163 endocrinology clinics. The respondents were physicians (48%) or nurses (52%) who were working in either endocrinology clinics (61%) or other departments (39%) in academic hospitals (39%), general hospitals (54%) or private clinics (7%). Of these respondents, 69% participated in both educational and healthcare activities, although only 12% had a position that was at least partially dedicated to education. At each institution, the median number of healthcare professionals involved in TE (≥2 h/week) was 9.4: 4.4 were nurses; 2.2 were physicians; 1.7 were dietitians; and 1.1 were nurse’s aides.
### 3.3.2. Patients’ characteristics

The mean number of patients seen in 1 year (past 12 months) was 1093 per unit, including 25% of new patients. Overall, 12% of patients could neither speak nor understand the French language.

### 3.3.3. Organization

Of the surveyed sites, 85% provided TE for inpatients and 69% provided TE for outpatients. Of the patients seen during the past 12 months, 66% received TE (84% newly diagnosed). These percentages were similar whether or not the respondents belonged to a specialized department. The patients most likely to receive TE were newly diagnosed patients (88%), type 2 diabetics switching to insulin therapy (83%) and those with gestational diabetes (79%). In contrast, patients with type 2 diabetes treated with oral antidiabetic drugs received TE less often (66% on average; 86% in academic hospitals vs 72% in general hospitals; \( P = 0.05 \)). The first reason given for not offering TE was related to patients’ characteristics (social conditions such as being homeless, elderly or having psychiatric problems). The second reason was the lack of available staff, and the third was the lack of communication tools for patients who did not understand French. Other reasons are summarized in Fig. 1. Patients’ refusals accounted for <1% of all reasons.

Of the more ‘traditional’ hospital units, 85% provided TE (or 96% if they had specialized departments), and 65% of units offered TE activities in the context of a day hospital unit. The percentage is higher in academic hospitals (86%), but considerably smaller in private clinics (21%), where the absence of such systems was commonplace (68%); rates were similar for week hospital units (absent in 74% of private clinics). TE was also offered to inpatients in 84–96% of public hospitals vs 63% of private clinics. As for outpatients, 68–72% of public hospitals offered TE vs 58% of private clinics. The characteristics of the patients and sites are summarized in Table 2.

Information and education were provided on an individual basis to 55% of patients, with only 30% benefiting from both individual and group education, and 15% receiving group education only.

Units were linked to specific networks (62%), general practitioners (61%), private-practice nurses (60%) or private-practice endocrinologists (59%) and patients’ associations.
Table 2
Patients and institutions participating in the web-based phase of the survey.

<table>
<thead>
<tr>
<th>Endocrinology units in academic hospitals</th>
<th>Other units in academic hospitals</th>
<th>Endocrinology units in general hospitals</th>
<th>Other units in general hospitals</th>
<th>Private clinics (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responders</td>
<td>24%</td>
<td>30%</td>
<td>24%</td>
<td>7%</td>
</tr>
<tr>
<td>Mean number of patients/year</td>
<td>1296</td>
<td>1037</td>
<td>26%</td>
<td>43%</td>
</tr>
<tr>
<td>New patients/year</td>
<td>21%</td>
<td>26%</td>
<td>65%</td>
<td>82%</td>
</tr>
<tr>
<td>Patients receiving TE</td>
<td>63%</td>
<td>65%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>New patients receiving TE</td>
<td>84%</td>
<td>86%</td>
<td>57%</td>
<td>66%</td>
</tr>
<tr>
<td>TE in day hospital</td>
<td>5%</td>
<td>7%</td>
<td>25%</td>
<td>22%</td>
</tr>
<tr>
<td>No day hospital</td>
<td>73%</td>
<td>61%</td>
<td>44%</td>
<td>66%</td>
</tr>
<tr>
<td>TE in week hospital</td>
<td>20%</td>
<td>24%</td>
<td>36%</td>
<td>25%</td>
</tr>
<tr>
<td>No week hospital</td>
<td>96%</td>
<td>90%</td>
<td>84%</td>
<td>85%</td>
</tr>
<tr>
<td>TE for inpatients</td>
<td>71%</td>
<td>68%</td>
<td>72%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Academic hospitals were often connected to endocrinologists, whereas general hospitals worked more closely with nurses and GPs.

3.4. Programme content

Only 50% of departments had a written curriculum for their programme. The most frequent topics were diet (87%), knowledge of diabetes (75%), hypo-/hyperglycaemia (86%), injection and glucose-monitoring techniques (82%), and foot care (77%). The complete list of topics is shown in Fig. 2. Overall, 53% of respondents reported having written teaching aids relating to these topics to standardize communication. These documents were usually home-made in academic hospitals, and updated in 73% of teams, but done so less than once a year in most cases (64%). At small institutions, these written materials were usually from pharmaceutical companies.

3.5. Evaluation

Evaluation of educational activity was performed in 60% of units, using a questionnaire filled out by the patient (acquired/non-acquired knowledge) or a face-to-face interview, focused on patient’s satisfaction and whether or not patients had achieved their individual educational objectives. After 1 year, type 1 diabetic patients had achieved their objectives more often than type 2 patients (62% vs 48%, respectively). Successes were most frequently seen in patient’s autonomy (61% achieved compliance and insulin-dose adaptation) and improvement in disease-coping skills (58%), while 45% of patients were satisfied with the TE itself (confidence in the team, motivation).

3.6. Training

One of the obstacles in TE is insufficient or a complete lack of training. Of every 10 healthcare professionals, only 35% had
received specific initial training, and a further 45% were trained by their colleagues or by pharmaceutical company-sponsored sessions, but 15% received no training at all. On average, academic hospitals provided more training than general hospitals or private clinics, while only 41% of units benefited from continuing training, which was usually once a year (63%).

The main training requirements were related to motivational interviewing and educational diagnosis. Professionals also mentioned a ‘chronic disease model’ and ‘changing health behaviours’ as important topics that needed to be developed.

3.7. Self-assessment of TE

On a scale of 1 (unsatisfied) to 10 (very satisfied) to reflect their overall impression of the organization of TE in their departments, the respondents attributed an average mark of 6.7, which was also similar for physicians and nurses. The most frequent reason for giving an unfavourable appraisal was insufficient human resources, funds, relationships with private-practice practitioners and training (for details, see Fig. 3). Using the same 1–10 scale, the average mark attributed to TE content was 6.6, while “relationships with outside caregivers” was scored at 5.6. In the opinion of nurses, the efficiency of TE was rated at 6.9, whereas the physicians marked it as 6.5 ($P = 0.05$). The overall assessment of the team in charge of TE was 7.2. Its positive aspects were motivation, dynamism, strong involvement, good relationships with patients and the complementarity of team members.

3.8. Other needs and expectations

Facilities were considered inadequate with a 5.4 score on the 10-point scale, and insufficient space limited the number of patients that could be accommodated. Clearly, there was also a need for official recognition of TE activity, as reflected by the financial valuations. TE is not considered a hospital activity according to either strategic planning or nomenclature, a key issue in the context of new budget rules and, in particular, activity-based funding. The lack of recognition was considered an obstacle in the development of TE by 71% of participants. Respondents also felt that they needed more time for their education, as well as more dedicated staff and tools (21%).

4. Discussion

Several reports related to TE in diabetes have investigated the efficacy of management programmes. The most recent, the DESMOND study conducted in the UK, was a randomized controlled clinical trial designed to evaluate the effectiveness of a structured group-education programme for newly diagnosed type 2 diabetes patients [10]. In that study, carried out in primary care, the intervention resulted in improvement of the risk factors associated with diabetes (such as weight loss, smoking cessation) and in increased knowledge of the disease, but demonstrated no changes in HbA1c levels. Previous studies conducted in Italy and in the UK had shown improvements in biomedical outcomes, knowledge of diabetes and quality of life [11,12]. Similar results were observed in Germany in patients with type 1 diabetes who failed to achieve their therapeutic goals [13]: after a 5-day inpatients programme, they had fewer hypoglycaemic episodes, and had acquired competency and motivation.

Thus, the efficacy of TE has been evaluated and documented in many countries, in different settings and with different types of diabetic patients (newly diagnosed, type 1 and type 2). However, the operational aspects of TE and the reality of its daily practice have been rarely described. A previous French study aimed to describe TE methods and assess the quality of programmes to build models for type 2 diabetes [9]. Its methodology differed...
from that in our present study, as it was only qualitative, and covered the in-depth knowledge of TE organization and content in only a small number of sites (seven) through interviews, observation and educational-materials analysis. The study concluded that TE activities and organization are highly variable, and more dependent on the educators’ backgrounds and local constraints than on type of organization. However, its sample was too small to show such differences. The study also pointed out that, although all seven sites had the same objective of ‘patient autonomy’, the true outcome was either the true empowerment of autonomy pertaining to care decisions or compliance with a preset regimen. The study, however, did not take into consideration obstacles and needs, but emphasized that improvements were needed in terms of diversity of competency, consistency between theoretical objectives and educational approaches, and patients’ involvement in building the TE programmes. In fact, the concept of patients’ participation in medical decision-making was recommended years ago [14], and participative education appears to be superior to traditional TE, as shown by recent clinical trials by Mexican teams [15,16].

In the present study, our research was expanded to provide a more global picture of TE developed for diabetes in French hospitals, and to describe the viewpoint of dedicated healthcare professionals. Our survey may also be related to two similar studies performed in French hospitals, although those were not specifically focused on diabetology.

The first study [7] was conducted in 1999 by the Direction Générale de la Santé (DGS; General Health Service), and the selection of participating hospitals was based on drawing lots. Questionnaires were sent to hospital directors and to the healthcare professionals in charge of TE. The response rate was 28% (out of 1271 questionnaires altogether). Of the participating hospitals, 9% had no TE activities. Subgroup analysis of the endocrinology units showed that TE programmes were implemented in almost all of them, and were mostly intended for adults (83%) and mostly in a scheduled hospital setting (84%). However, only 47% of day hospital patients and 53% of patients seen in outpatient departments benefited from TE, although our present survey shows some TE improvement for outpatients (implemented in 68–72% of our sites). Obstacles highlighted in the DGS study were similar to ours (human and material resources), and the lack of funding dedicated to the conception and implementation of programmes, mentioned by 12–18% of respondents, recalls the lack of official recognition described in OBSIDIA.

The second study [8] was performed in 2006 by the Direction de l’Hospitalisation et de l’Offre de Soins (DHOS; Directorate for Hospitalization and Organization of Care) involving 229 sites that had received government funding specifically for prevention and TE. This study aimed to identify and describe TE activity in selected French hospitals by sending out 333 questionnaires to hospital directors, of which 191 were properly completed. Questionnaires were also sent to caregivers in charge of TE, with a 61% response rate (778 out of 1284). The study evaluated all TE activities for any pathology, although diabetes was the most frequently mentioned subject (27% of respondents). In this case, the results were again similar to ours: TE activities were mostly described for individuals (67% vs 4% for group activities); evaluation was insufficient (67%); activities were not appropriately standardized, with few written curricula; and, in 75% of cases, they were not part of a structured course of education, with the result that the TE training of healthcare providers was also inadequate. Nevertheless, the recognition of TE appears to have improved from 1999 to 2006, as 69% of hospital directors now consider it a priority. However, such progress is still not apparent to caregivers, as the lack of recognition remained a major complaint in our present survey, performed over the same time period. Furthermore, in the EDUPEF study, TE managers also asked for more funding (26%) and professional recognition (16%) [8].

The consistency of the results of all these studies gives substantial support to our findings. Nevertheless, our study has limitations related to its methodology, some of which are inherent to questionnaire-based surveys. The response rate was 33%; data were declarative with no quality control; and there was no drawing of lots, so those who responded were only those who were willing to. For these reasons, the analyzed sample may not be entirely representative of units that deal with diabetic patients. In particular, it can be assumed that sites not offering TE were less likely to respond than others, leading to overestimation of the rate of TE. The proportion of usable questionnaires was also small (n = 272) compared with the number of letters sent out to healthcare professionals (n = 6350). Furthermore, the number of targeted sites was 600 and only one person could participate at each site. On the other hand, the study had the advantage of offering an overall view of the TE situation in France, as nearly every unit treating diabetic patients was contacted, and the methodology was the most appropriate for reflecting the reality of everyday practice.

However, there were discrepancies between the quantitative and web-based questionnaire phases in mean numbers of patients seen in 1 year and in the number of healthcare professionals in charge of TE (18 and 9.4, respectively). Two explanations may be proposed: random differences in samples and/or differences derived from how the data were collected (interviews and self-administered questionnaires leading to variable responses).

Nevertheless, in spite of the discrepant figures, the main observations made in these studies were similar. Most sites have implemented TE for diabetic patients and offered a wide range of educational topics, covering the essential aspects of diabetology. The objective of our present study was not to assess whether TE programmes were in accordance with the HAS guidelines [6]. However, the qualitative phase found that healthcare professionals agreed on the definition of TE: that it should “help patients acquire or maintain the skills they need to manage their life with a chronic disease in the best possible way”. They also agreed on the four steps of the TE plan, as defined by the HAS: (1) establish an educational diagnosis; (2) establish a tailor-made TE programme with learning priorities; (3) plan and provide group or individual sessions; and (4) assess the acquired skills.

Overall, however, there was a lack of proper rigour and ‘standard operating procedures’. Only 50% of units had written curricula and/or teaching aids. The lack of standardized proto-
cols and educational materials was also more striking at small sites, which had little means and fewer dedicated people.

Evaluation was inadequate, performed in only 60% of our surveyed institutions, and also extremely limited. According to HAS guidelines [6], it should include individual evaluations of patients (allowing them to express their points of view and their personal experiences), and evaluations of the procedures and effectiveness. Above all, evaluation should lead to TE modifications. These requirements were not met in actual practice.

TE training was also insufficient and heterogeneous, and was often provided by pharmaceutical companies, while few professionals received high-level university training in TE, apart from physicians.

Overall, healthcare professionals were motivated and willing to implement effective TE, but they were dissatisfied with the current status of TE in French hospitals, as it continues to not be a recognized medical activity and, consequently, receives insufficient funding. This is all the more regrettable as it has been demonstrated that the benefits associated with patients’ education outweigh the costs of interventions [17].

5. Conclusion

The present study was carried out in French hospitals that were both public and private, and with or without specialized endocrinology departments, and described the methods used in the TE of diabetic patients while increasing our knowledge of its practical aspects. The concept of TE is well established and implemented in most French hospitals, with 65% of patients participating in such an educational programme. Education is usually associated with care and provided on an individual basis. However, healthcare professionals suffer from the lack of recognition of their TE activities, and they also complain of inadequate funding, resources and training. Clearly, there is room for improvement in the training, organization and evaluation of TE. Indeed, training healthcare professionals remains one of the most important challenges for implementing high-quality patient education not only for diabetes, but also for all chronic diseases in general.

Conflict of interest statement

The authors have no potential conflict of interest relevant to this article.

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