




Available online at
 ScienceDirect
www.sciencedirect.com

Elsevier Masson France

www.em-consulte.com



CLINICAL RESEARCH

Therapeutic education unit for heart failure: Setting-up and difficulties. Initial evaluation of the I-CARE programme

Cellule d'éducation thérapeutique pour l'insuffisance cardiaque : mise en place et problèmes. Évaluation initiale du programme I-CARE

Yves Juillière^{a,*}, Patrick Jourdain^b,
Jérôme Roncalli^c, Amélie Boireau^b, Hélène Guibert^d,
Hélène Lambert^d, Laure Spinazze^c,
Guillaume Jondeau^e, Pierre Sonnier^f, Céline
Rouanne^g, Angélique Bidet^g,
Brigitte Sandrin-Berthon^f, Jean-Nöel Trochu^d, for the
I-CARE participants on behalf of the Working Group
on Heart Failure of the French Society of Cardiology¹

^a Department of Cardiology, CHU de Nancy-Brabois, allée du Morvan, 54500 Vandœuvre-les-Nancy, France

^b Department of Cardiology, hôpital René-Dubos, Pontoise, France

^c Department of Cardiology, CHU de Toulouse, Toulouse, France

^d Department of Cardiology, CHU de Nantes, Nantes, France

^e Department of Cardiology, CHU Bichat, Paris, France

^f Comité régional d'éducation pour la santé, Languedoc-Roussillon, Montpellier, France

^g AstraZeneca, France

Received 11 July 2008; received in revised form 20 October 2008; accepted 20 October 2008
Available online 30 January 2009

* Corresponding author. Fax: +33 3 83 15 38 24.

E-mail addresses: y.juilliere@chu-nancy.fr, yves.juillere@wanadoo.fr (Y. Juillière).

¹ See Appendix.

KEYWORDS

Therapeutic education;
Heart failure;
Care management

Summary

Background. – Education programmes are required in chronic diseases. The *insuffisance cardiaque : éducation thérapeutique* (I-CARE) programme was developed in France to promote the setting-up of therapeutic education units for chronic heart failure.

Aim. – To evaluate the setting-up of such units, assessing the influence of training on the creation and organization of the unit, the problems encountered and the contribution of the dedicated educational tools.

Methods. – We submitted a questionnaire to the first 136 trained centres. The questionnaire was divided into two sections: one section dealing with educational practices and the other with the advantages and disadvantages of the tools provided.

Results. – The participation rate reached 69.1%. Seventy-four centres (78.7%) declared themselves to be active in therapeutic education. Unit educational activities determined an educational diagnosis (89.2% of the centres) and provided education by means of collective workshops (73.0%) or one-to-one teaching sessions (75.7%). A complete education programme for a patient consisted of a median of four sessions (25th–75th percentile, 2–5 sessions) and lasted for a median of 6 h (25th–75th percentile, 4–10 h). The education team was multidisciplinary and usually included a nurse (93.2%), a dietician (78.4%), a cardiologist (71.6%) and a physiotherapist (40.5%). Heart failure educational tools were used only in part in most centres (89.2%). All advantages and disadvantages were recorded.

Conclusion. – This first evaluation of the setting-up of therapeutic education units in the I-CARE programme has yielded promising results, despite expected difficulties. The effects of therapeutic education on the behaviour of heart failure patients remain to be determined.

© 2008 Elsevier Masson SAS. All rights reserved.

MOTS CLÉS

Éducation thérapeutique ;
Insuffisance cardiaque ;
Prise en charge

Résumé

Situation. – Les programmes d'éducation sont maintenant recommandés dans les maladies chroniques. Prévoyant cette situation, le programme insuffisance cardiaque : éducation thérapeutique (I-CARE) a été développé en France afin de promouvoir la création d'unités d'éducation thérapeutique dans le cadre de l'insuffisance cardiaque.

But. – Pour évaluer la mise en place de ces unités, nous avons adressé un questionnaire aux 136 premiers centres formés, afin d'évaluer l'influence de la formation en éducation thérapeutique sur la création de l'unité, l'organisation de l'unité, les problèmes rencontrés et la contribution des outils éducatifs dédiés.

Méthode. – Le questionnaire était constitué d'une partie portant sur l'activité éducative du centre et une partie sur les qualités et les limites des outils fournis.

Résultats. – Le taux de participation a atteint 69,1%. Parmi les centres, 74 (78,7%) se déclaraient actifs en éducation thérapeutique. Les activités éducatives de l'unité se composaient d'un diagnostic éducatif (89,2% des centres) et d'une éducation administrée au moyen soit d'ateliers collectifs (73,0%), soit de sessions individuelles (75,7%). Un programme complet d'éducation pour un patient comportait une médiane de quatre sessions (25^e–75^e percentiles : 2–5) et durait six heures (4–10). L'équipe éducative était multidisciplinaire et constituée principalement d'une infirmière (93,2%), d'une diététicienne (78,4%), d'un cardiologue (71,6%) et d'un kinésithérapeute (40,5%). Les outils éducatifs dédiés à l'insuffisance cardiaque étaient utilisés seulement en partie dans la plupart des cas (89,2%). Toutes les appréciations, positives et négatives, ont été analysées.

Conclusion. – La première évaluation de la création d'unités d'éducation thérapeutique dans le cadre du programme I-CARE s'avère prometteuse en dépit des difficultés prévues. Il reste à démontrer les effets de l'éducation thérapeutique sur le comportement des patients insuffisants cardiaques.

© 2008 Elsevier Masson SAS. Tous droits réservés.

Abbreviations

CHF chronic heart failure
I-CARE *insuffisance cardiaque : éducation thérapeutique*

Background

CHF is a frequent, severe disease that has become a major public health problem in industrialized countries [1,2].

Therapeutic possibilities seem to have reached a plateau [3] and a change in patient management is required [4]. A multidisciplinary approach that involves nurses and dieticians in cooperation with physicians has a central role to play in improving delivery of care, regardless of CHF management modalities (networks or heart failure clinics) [4]. The importance of education programmes as a means of reducing morbi-mortality and improving quality of life in patients with chronic diseases has been emphasized [5,6]. Therapeutic education has a major influence on the management of chronic diseases [7–13] and should be applied in CHF. As the value of therapeutic education has been recognized in most industrialized countries [6,8,14,15], the French High Health Authority (Haute Autorité de santé) now recommends therapeutic education for patients with all types of chronic diseases, including CHF, and has published national guidelines on this topic recently [16].

It was in this context that the I-CARE programme was developed in France, to promote the setting-up of therapeutic education units within cardiology centres based on a voluntary approach by the medical team [17]. The aims of the programme are to organize a training course in therapeutic education for the voluntary centres and to develop standardized educational tools for therapeutic education, designed specifically for CHF patients. The programme started in 2004, with educational tools being created first [18], followed by the development of the training course in therapeutic education. To date, around 200 units are participating in the project, including units set up in Belgium and Luxembourg.

To evaluate the setting-up of the therapeutic education units in the I-CARE programme, we submitted a questionnaire to the first 136 centres trained in therapeutic education; the questionnaire was designed to assess the influence of the training course on the creation and organization of the unit, the problems encountered and the contribution of the dedicated educational tools.

Methods

Study population

The French I-CARE programme was designed to assess and develop therapeutic education for CHF patients in France [17] and was conducted under the auspices of the French Society of Cardiology and the French Federation of Cardiology.

A working group was established, comprising cardiologists from the Working Group on Heart Failure of the French Society of Cardiology, together with nurses and dieticians, all of whom were specialized in the fields of therapeutic education and CHF. Training courses in therapeutic education started in December 2004 for the first voluntary centres. Training was given by specialists in therapeutic education (B.S.B. and P.S.), with a trainer:trainee ratio of 1:14–15. A complete session consisted of 4 days of training, divided into two 2-day sections delivered 1–2 months apart. At least one permanent cardiologist and one paramedic from each centre had to attend a complete session.

When the centre was considered to be trained, one briefcase containing all the dedicated educational tools was

provided. If a centre had been trained previously, it could be incorporated into the I-CARE programme and provided with the briefcase without further training being required.

In March 2006, 136 centres had been trained and had received the educational tools. Six centres were Belgian. Of the 130 French centres, 27 were university hospitals, 73 were public hospitals, 15 were rehabilitation centres, 12 were private clinics and three were networks.

Questionnaire

A questionnaire was sent to each trained centre. The questionnaire was divided into two sections – one section dealing with educational practices (26 questions) and the other with the advantages and disadvantages of the tools provided (nine questions). With regard to the centres, questions were asked about the setting-up of the therapeutic education unit, the contribution of the training provided, the problems encountered, the organization of patient education, the medical staff involved and the mode of financing. With regard to therapeutic education, questions were asked about the reasons for non-education, the number and types of educated patients, and the elements and duration of a complete educational programme. With regard to educational tools, questions were asked about the use, advantages and disadvantages of each pre-specified tool unit [18].

Statistical analysis

All continuous variables are expressed as medians (25th–75th percentiles). A nonparametric Mann-Whitney test was used to assess ordinal variables between active and non-active centres in terms of contribution of training provided. A p -value < 0.05 was considered to be significant.

Results

All centres

The participation rate was 69.1% ($n = 94$). Of the 94 centres that answered the questionnaire, 74 (78.7%) declared themselves to be active in therapeutic education and 20 (21.3%) declared themselves to be non-active.

Of the 74 active centres, 33 (44.6%) had used therapeutic education before incorporation into the I-CARE programme; most of these centres (31 of 33) observed an improvement in educational practices due to the I-CARE programme, in terms of the contribution made by tools and the positive impact of training on the organization of therapeutic education. Among the other 41 active centres, 39 provided therapeutic education routinely and two had just started to provide it at the date of the survey.

Among the 20 non-active centres, the reasons for the absence of an education unit were as follows: lack of health professionals ($n = 8$), lack of facilities ($n = 7$), lack of time ($n = 3$) and lack of budget ($n = 2$).

After the training session in therapeutic education, the evolution of opinions concerning therapeutic education in routine clinical practice was assessed using a 4-level scale for each item: 1 equals no effect, 2 equals a small effect, 3

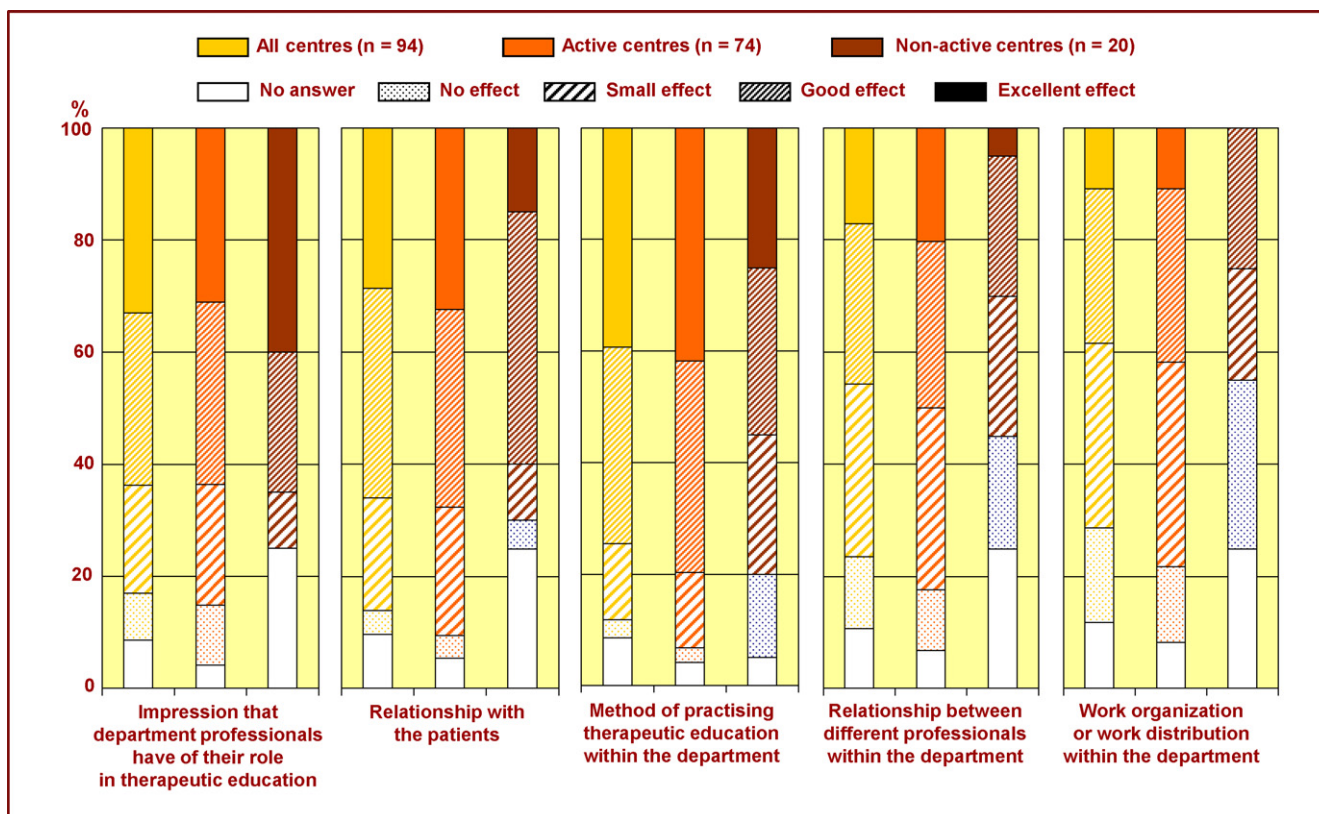


Figure 1. Assessment of evolution of opinions concerning therapeutic education in routine clinical practice in the I-CARE centres, using a 4-level scale.

equals a good effect and 4 equals an excellent effect (Fig. 1). Improvement was seen in the following items (median score [25th–75th percentiles]):

- the impression that department professionals had of their role in therapeutic education (all centres: 3 [2–4]; active centres: 3 [2–4]; non-active centres: 4 [3–4]; not significant, $p=0.063$);
- the relationships with the patients (all centres: 3 [2–4]; active centres: 3 [2–4]; non-active centres: 3 [3–3]; not significant);
- the method of practising therapeutic education within the department (all centres: 3 [3–4]; active centres: 3 [3–4]; non-active centres: 3 [2.5–4]; not significant).

The following two items were little influenced by training:

- the relationship between the different professionals within the cardiology department (all centres: 3 [2–3]; active centres: 3 [2–3]; non-active centres: 2 [1.5–3]; not significant);
- work organization or work distribution within the department (all centres: 2 [2–3]; active centres: 2 [2–3]; non-active centres: 2 [1–3]; not significant, $p=0.074$).

Active centres

In the active centres, therapeutic education had started on average 1 year before receipt of the questionnaire (median 15 months [6.25–26.25]). Unit educational activities consisted of conducting an extensive interview with the patient

to determine an educational diagnosis (89.2% of the centres), providing education by means of collective workshops (73.0%) or one-to-one teaching sessions (75.7%) and filling in a dedicated education file for each patient (77.0%).

A complete education programme for a patient consisted of a median of four sessions (2–5), comprising a median of 2.5 collective workshops (2–4) and a median of two one-to-one teaching sessions (1–3) (Fig. 2). The median duration of the entire programme was 6 h (4.125–10 h). The median duration of a session (one-to-one or collective) was 1.25 h (1–2 h). The median duration of the session dedicated to the development of the educational diagnosis was 1 h (0.5–1 h). Evaluation of training was performed in 78.4% of the centres, in most cases by means of an auto-questionnaire given to the patient (in 45.9% of the centres). In 50.0% of the centres, educational recovery was performed systematically (Fig. 2).

A median of six patients (4–9) per month were educated by each centre; among them, four patients (2–6) were educated simultaneously. However, only 23.0% of the active centres (17/74) offered education training to all patients. The reasons for non-education can be divided into five categories: the patient's general status, the patient's psychosocial profile, organization problems, the centre's method of operation and the type of CHF (Fig. 3).

The education team was multidisciplinary and usually included a nurse (93.2%), a dietician (78.4%), a cardiologist (71.6%) and a physiotherapist (40.5%). Other health professionals also participated to a lesser degree (Fig. 4). However, practical achievement was entrusted especially to

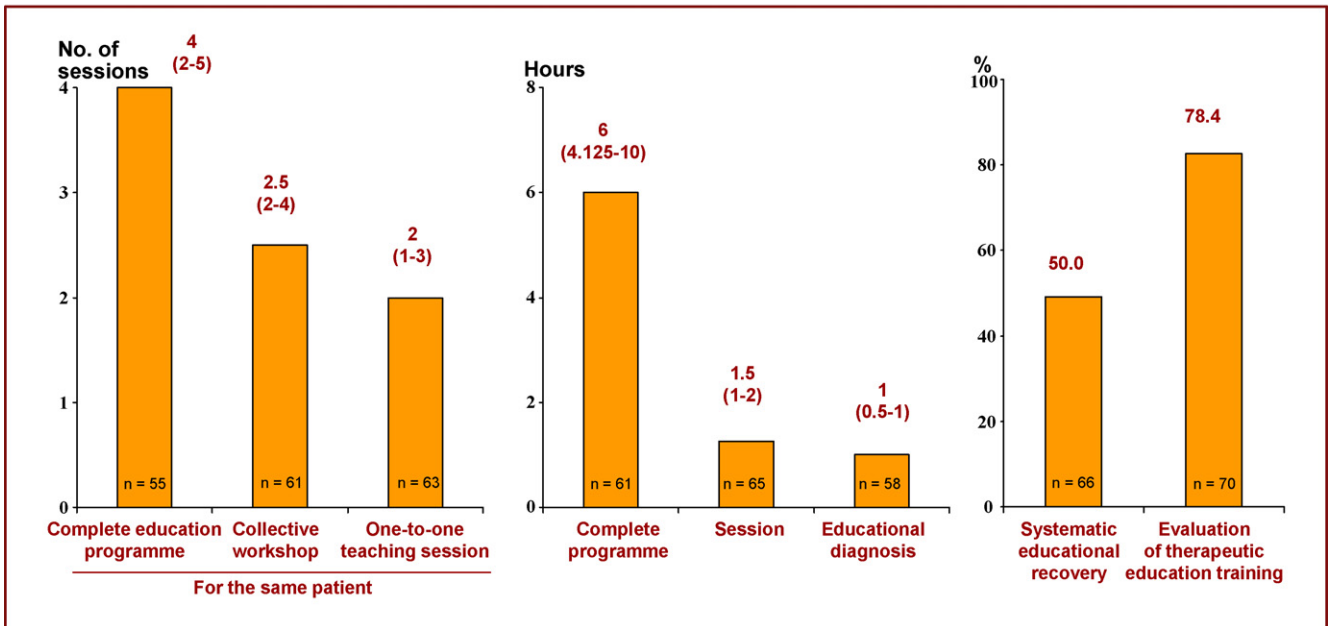


Figure 2. Organization of a complete programme of patient therapeutic education in the 74 active centres. Values are expressed as medians (25th–75th percentiles) or percentages.

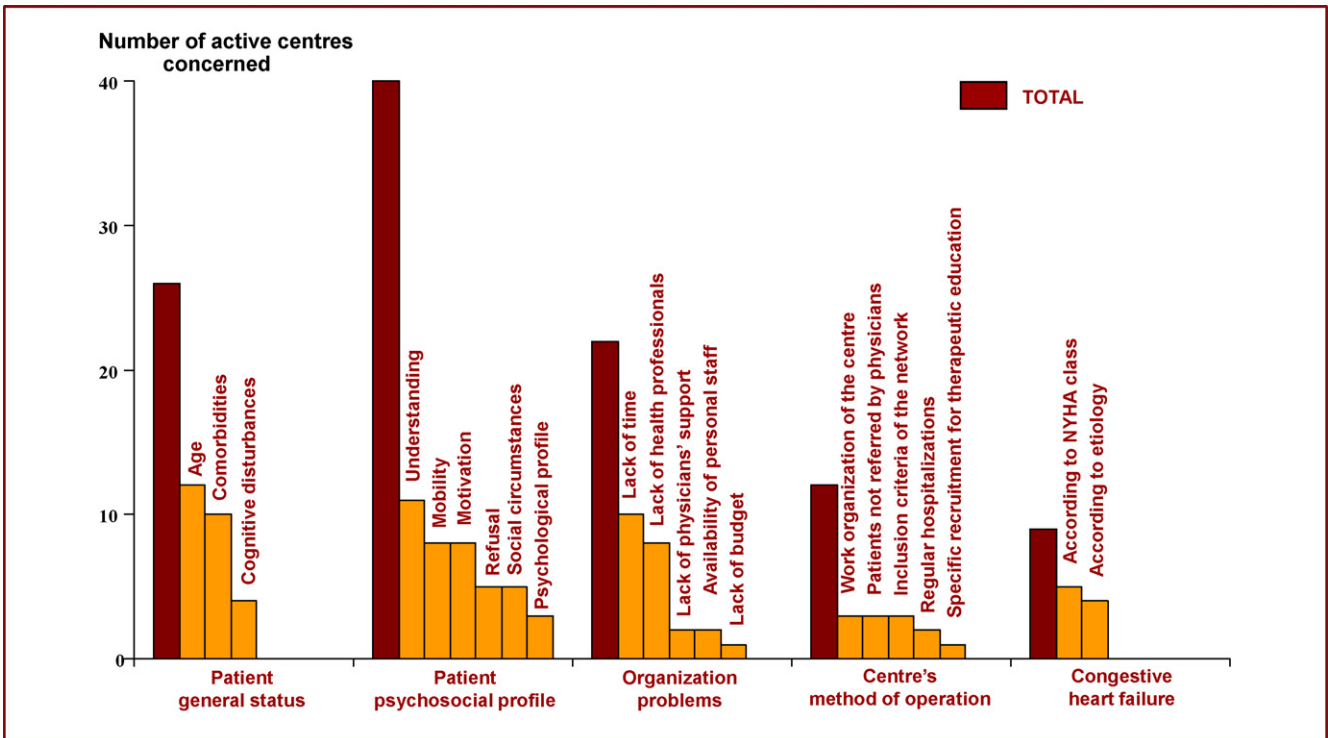


Figure 3. Reasons for non-education in the 74 active centres.

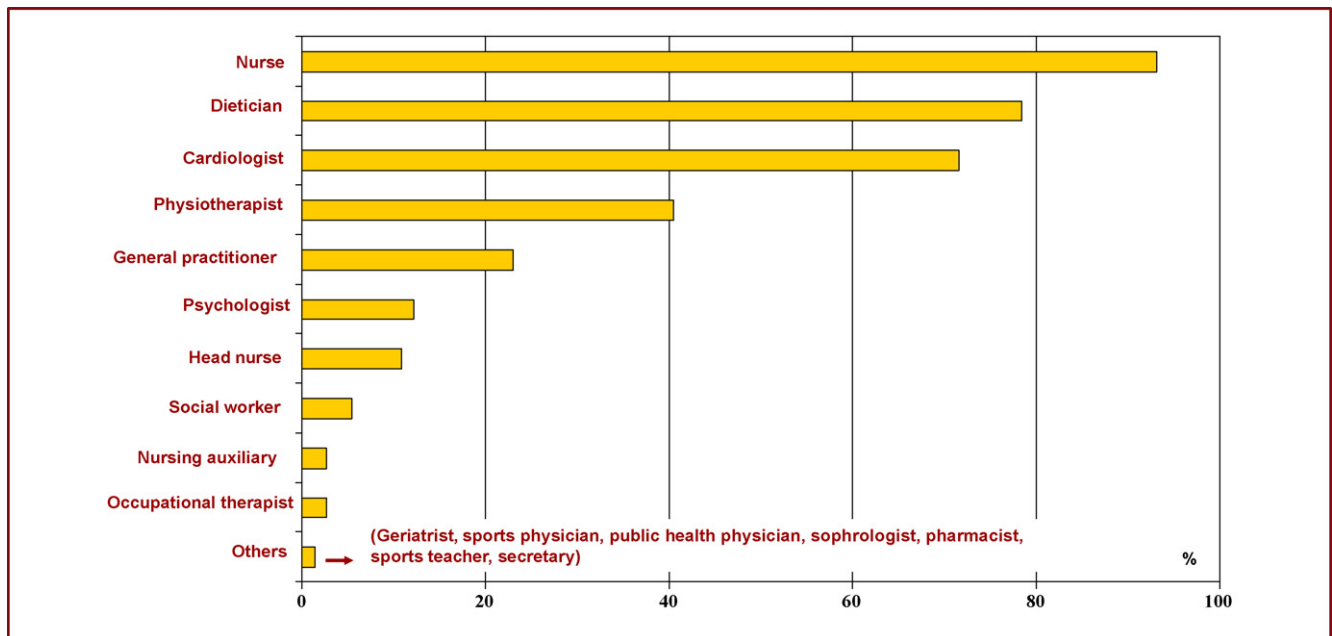


Figure 4. Health professionals constituting the educational staff in the 74 active centres.

the education nurse in 89.2% of the centres rather than to the cardiologist (35.1%) or to the dietician (40.5%).

The therapeutic education unit project was funded mainly by additional time taken from clinical activity (58.1%), by the institutional financial resources of professionals dedicated specifically to therapeutic education (32.4%), by outpatient clinic activity (29.7%) or through a personal agreement specific to a particular centre (23.0%).

I-CARE educational tools in active centres

Educational tools dedicated to CHF patients were developed specifically for the I-CARE programme. All active centres used the tools, but only in part in most cases (89.2%); centres often adapted the tools to their type of practice.

As described previously [18], the briefcase of tools comprised five tool units: educational diagnosis, knowledge of the disease, diet control, physical activity and daily life, and medical treatment. The tools used most frequently included certain items from the diet unit (food-card game, posters and 1 g salt spoons), the 3D model of the heart and the personal patient document (Fig. 5).

The principal positive and negative features of each tool unit were noted. In the unit on educational diagnosis, the tools appeared to be complete and precise; they were also readily adaptable to meet specific needs, and this was done by most of the centres because they were often judged to be too lengthy and too complex. In the unit on knowledge of the disease, the tools appeared to be clear and simple, with posters and a 3D model of heart that were especially useful; however, the tools in this unit were sometimes judged to be too complex, particularly the glossary of technical words. In the unit on diet control, the 1 g salt spoons, food-card game, and posters were well created and very useful; however, the laminated menus designed to help patients improve their choice in restaurants were judged to be rather unsuitable. In the unit on physical activity and daily life, the index cards

were clear and the card game and posters were often useful, even if some cards were equivocal and were therefore rejected; in addition, more cards concerning daily physical activities were needed. In the unit on medical treatment, the index cards were judged to be practical and complete, although a certain degree of complexity was noted at times.

Discussion

The I-CARE programme has facilitated the rapid development of therapeutic education in France and French-speaking Benelux. Unfortunately, despite specific training and appropriate tools, the setting-up of therapeutic education remains difficult, due to lack of budget, time and health professionals. Nevertheless, the value of therapeutic education performed in association with multidisciplinary management in chronic diseases has been shown [5,6], particularly in CHF [8,9,12,13,19]; the strategy reduces morbi-mortality [5,6,20,21], regardless of the different modalities used [8,19]. However, the recent coordinating study evaluating outcomes of advising and counseling in heart failure (COACH) [22] failed to show a significant reduction in morbi-mortality secondary to intensive support by a CHF nurse. There was a trend towards lower mortality (15.0%) in the two intervention groups compared with the control group, which was, however, accompanied by slightly more but shorter hospitalizations for CHF in both intervention groups. Two explanations for these observations can be considered. Firstly, the study was conducted in The Netherlands, where basic care is of a high level; this may explain the absence of effect between compared (control and intervention) groups [23]. Secondly, the hospitalization criterion is probably not ideal [23,24]; if the number of hospitalizations is increased but the duration of hospitalization is reduced, resulting in more days spent at home, the overall outcome is positive for the patient and society.

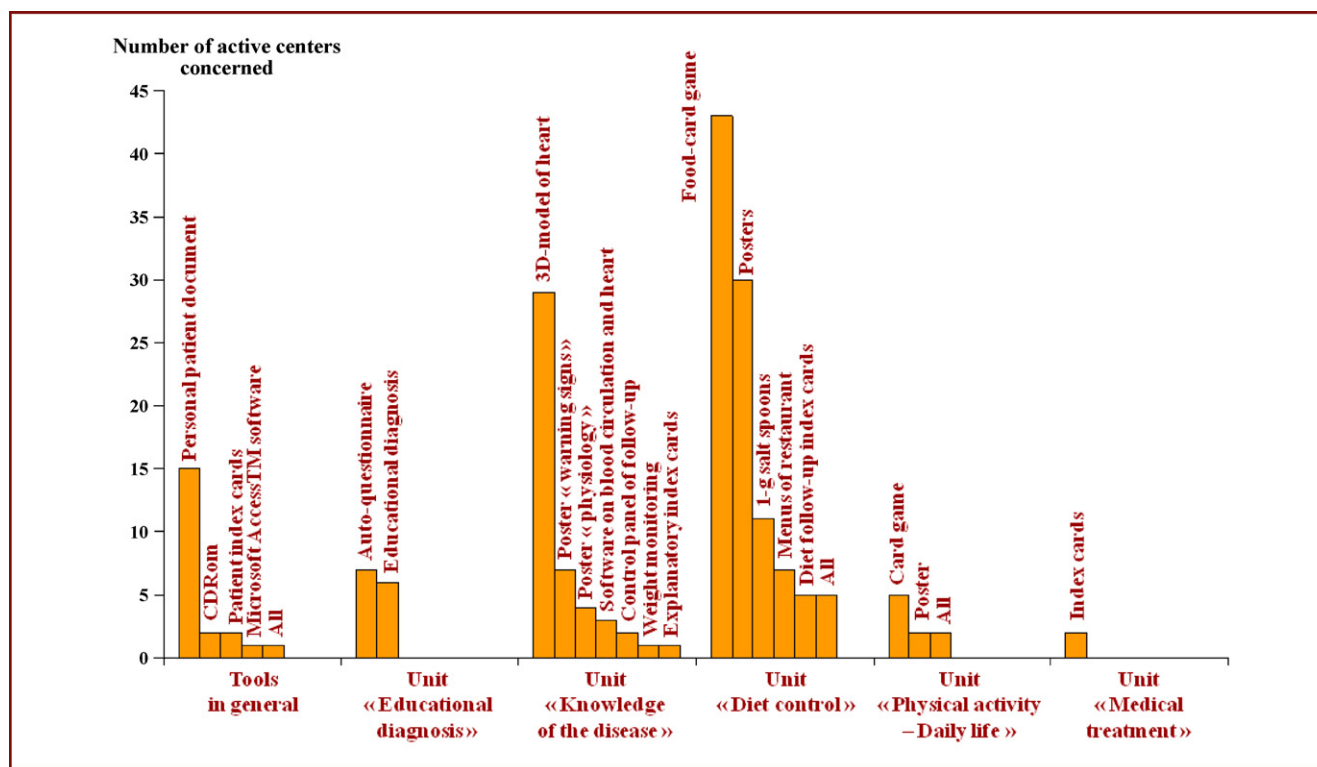


Figure 5. Appreciation of the chronic heart failure-specific educational tools [18] in the 74 active centres.

The I-CARE programme participates in the improvement of basic care in France in association with networks or CHF clinics. Creation of a therapeutic education unit might be an interesting alternative for centres that cannot participate in a network. For this reason, therapeutic education units were created in CHF clinics, CHF networks, and clinical cardiology departments via the I-CARE programme, on the basis of a voluntary approach by the centre.

In France, national guidelines for chronic disease management have existed since 2007 [16]. According to these guidelines, therapeutic education is complementary to and inseparable from the care, treatment and prevention of complications, and plays a role in improving patient health and quality of life for patients and their relatives. The objectives of therapeutic education are to achieve and maintain patient competency in terms of self-care and adaptability. Therapeutic education should be proposed by all types of professionals to all types of CHF patients and should be planned in four stages [16], as illustrated by the I-CARE programme [17,18].

Our study has shown that a complete education programme for a patient comprised around four sessions for a median total duration of 6h. Collective or one-to-one sessions lasted for about 1.5h and educational diagnosis needed about 1h. Training evaluation was done by most of the centres. The profile of this education programme is in agreement with the recommendations made by specialists in therapeutic education [25,26] and by national guidelines [16]. The I-CARE programme fights against inertia related to workload and difficulties associated with the creation of a therapeutic education unit. Nevertheless, the programme cannot overcome the crucial problems of lack of budget

and shortage of health professionals dedicated specifically to therapeutic education, despite the demonstration of the major role that an education-specialized nurse can play in CHF management [8,27].

In order to counteract the lack of knowledge of the disease among patients and their families, and the frequent non-compliance with diet recommendations and treatment guidelines, specific dedicated educational tools have been created [18]. These tools were generally well perceived by active centres, although they were regarded at times as being slightly complicated; this complexity may reflect the fact that the tools were designed to meet a wide range of requirements. The centres were instructed to adapt the tools to meet their own needs, which they often did, and although the tools were not always considered to be useful, they were provided only as an optional resource to be used if required.

Conclusion

The I-CARE programme is underway in France and French-speaking Benelux. This first evaluation of the setting-up of the units has yielded promising results, despite expected difficulties. The effects of therapeutic education on the behaviour of heart failure patients remain to be determined, and should be carried out by analysing the vast Observatoire de l'insuffisance cardiaque (ODIN) registry created by the French Society of Cardiology from the I-CARE centres. Moreover, a global evaluation of all centres is planned to determine how therapeutic education is performed in routine clinical practice.

Funding

The I-CARE programme was supported financially by AstraZeneca France.

Conflict of interests

None.

Appendix

Investigators and institutions participating in this first evaluation of the I-CARE programme are listed below.

I-CARE board: Y. Juillièrè, chairman, CHU Brabois, Nancy; G. Jondeau, CHU Bichat, Paris; P. Jourdain, centre hospitalier (CH) R.-Dubos, Pontoise; J. Roncalli, CHU Ranguéil, Toulouse; J.-N. Trochu, CHU Laennec, Nantes; A. Boireau, CH R.-Dubos, Pontoise; E. Gravouille, CHU Laennec, Nantes; H. Lambert, CHU Laennec, Nantes; H. Guibert, CHU Laennec, Nantes; L. Spinazze, CHU Ranguéil, Toulouse.

Other participating centres: C. Ache-Papillon, CH, Oloron-Sainte-Marie; P. Admant, CH J.-Monnet, Épinal; J.C. Aisenfarb, CH, Dunkerque; S. Allam, CH Saint-Nicolas, Verdun; M. Ammor, cabinet de cardiologie, Albi; N. Amri, CH, Saint-Quentin; A. Atallah, CH, Basse-Terre, Guadeloupe; G. Bacque, CMC, Cambo-les-Bains; N. Baille, CH Sainte-Blandine, Metz; S. Baleynaud, CH Bretagne-Sud, Lorient; F. Bauer, CHU C.-Nicolle, Rouen; T. Béard, clinique de l'Ormeau, Tarbes; F. Beauvais, CHU Lariboisière, Paris; A. Belin, CH, Trouville-sur-Mer; F. Ben Ahmed, CHR Bonsecours, Metz; V. Berder, clinique Saint-Yves, Rennes; C. Bergerot, CHU Louis-Pradel (cardio D), Bron; L. Bories, CHI Val-d'Ariège, Saint-Jean de Verges; J.-L. Bourdon, CH Saint-Charles, Saint-Dié-des-Vosges; M. Bouria, clinique Saint-Hilaire, Rouen; E. Bovier, CH A.-Charial, Francheville; N. Brichler, clinique C.-Bernard, Metz; G. Calvayrac, centre médical Le Guilhem, Clermont-l'Hérault; M. Canac, cabinet de cardiologie, Lodève; P. Cantié, CH, Castres; P. Cazenave, CH, Guingamp; P. Colin, CH A.-Béclère, Clamart; P. Coulon, CH Saint-Nicolas, Sarrebourg; F. Dany, ICARLIM, Limoges; J.-P. Darracq, CH S.-Pozzi, Bergerac; L. DeNadai Guillevic, CH Saint-Louis, Saint-Jean d'Angely; M.-F. Deforêt, CH, Montbéliard; F. Delahaye, CHU Louis-Pradel (cardio A), Bron; A. Dellinger, CH William-Morey, Chalon-sur-Saône; P. Delmas, CH R.-Bisson, Lisieux; J. Denis, CH Moulin-du-Pé, Saint-Nazaire; L. Desprets, CH, Valenciennes; M. Diallo, CH, Saint-Lô; J.-P. Doazan, CH, Montauban; P. Dominguez Dos Santos, CHU, Pessac; C. Dossetto, réadaptation, Trouville-sur-Mer; P. Dubiez, CHU Saint-André, Bordeaux; J.-C. Eicher, CHU Bocage, Dijon; A. Fassissi, CH V.-Dupouy, Argenteuil; M. Fauvel, clinique des Cèdres, Cornebarrieu; J.-P. Favier, CH, Le Havre; M. Ferrière, CHU A.-Villeneuve, Montpellier; B. Ferron, CH, Sens; O. Ferry, CH, Lunéville; P. Fromagé, CHI Annemasse-Bonneville, Ambilly; A. Gabriel, CH, Freyming-Merlebach; M. Gabrovescu, CH E.-Rain, Gonesse; K. Gacem, CH, Cholet; G. Gentile, ICARES, Aix-en-Provence; C. Gérard, Hôtel-Dieu, Le Creusot; N. Ghanem, CH S.-Veil, Eaubonne; J.-P. Godenir, CH Marie-Madeleine, Forbach; G. Gosselin, CH P.-Le-Damany, Lannion; P. Graux, CH Saint-Philibert, Lomme; A. Grosdemouge-Tounadre,

réadaptation, Villeneuve-Saint-Denis; O. Guiraudet, HIA Bégin, Saint-Mandé; S. Hackenberger, CH, Évreux; L. Hassairi, CH J.-Rougier, Cahors; P.-Henry, CHU Lariboisière, Paris; L. Hittinger, CHU H.-Mondor, Créteil; S. Huez, ULB—Erasmus University, Brussels, Belgium; P. Joly, CH, Douai; J. Jordant, Klinik Saint-Josef, Saint-Vith, Belgium; D. Kenizou, CH E.-Muller, Mulhouse; C. Khattar, réadaptation Kerpape, Ploemeur; J.-P. Labarre, clinique château de Vernhes, Bondigoux; C. Labarrère, centre Grancher-Cyrano, Cambo-les-Bains; S. Lasserre-Remy, CRF Val-Rosay, Saint-Didier-au-Mont-d'Or; P. Lauribe, CH Saint-Louis, Saintes; J.-P. Le Roux, CH, Auch; C. Leclercq, CHU Pontchaillou, Rennes; F. Ledru, HEGP, Paris; J.-F. Lefort, CH, Meaux; F. Levy, CHU, Amiens-Salouel; J.-J. Maillet, CH J.-Leclaire, Sarlat-la-Caneda; B. Maitre, CH Chanaux, Mâcon; L. Mankoubi, CH L.-Pasteur, Le Coudray; M. Mantia, CHIREC, Braine-l'Alleud, Belgium; S. Marlière, CHU A.-Michalon, La Tronche; J.-P. Maroni, CH R.-Ballanger, Aulnay-sous-Bois; M.-H. Métivier, CHU R.-Debré, Reims; C. Mimran, CH Sud-Réunion, Terre Sainte, Réunion; P. Minsart, CH, Pointe-à-Pitre, Guadeloupe; C. Moreau, CH Saint-Louis, La Rochelle; G. Mougeot, CH, Senlis; C. Mouly-Bertin, CH La Croix-Rousse, Lyon; E. Nellessen, CHU Sart-Tilman, Liège, Belgium; M. Ostoréro, CH, Martignes; B. Ouattara, CH Broussais, Saint-Malo; F. Ould Slimane, CH Jeanne-d'Arc, Bar-le-Duc; B. Pavy, CHI Loire-Vendée-Océan, Machecoul; M. Peltier-Iannetta, CH, Abbeville; B. Pierre, réadaptation IRIS, Marcy-l'Étoile; G. Pierre-Gustin, CHU Milétrie, Poitiers; A. Pinzani, CH, Sète; F. Pousset, CHU Pitié-Salpêtrière, Paris; A. Proton, CH, Antibes; A. Racine-Morel, CH, Autun; G. Rebuffat, CH, Montélimar; C. Rocca, réadaptation, Saint-Hilaire-du-Touvet; C. Roche, clinique Saint-Augustin, Bordeaux; F. Rodriguez, CH Saint-Esprit, Agen; M. Ross, réadaptation Saint-Luc, Abreschviller; G. Roul, CHU Haute-pierre, Strasbourg; A. Saadouni, CH, Saint-Omer; C. Schlick, centre L.-Bellan, Tracy-le-Mont; M.-F. Seronde, CHU J.-Minjot, Besançon; F. Sidney-Hetmaniak, réadaptation, Montpellier; J.-P. Smeets, clinique Saint-Joseph, Liège, Belgium; D. Souris, centre F.-Maréchal, Metz; C. Stenger-Weber, CH Alpha-Santé, Hayange; B. Taleb, CH du Parc, Sarreguemines; S. Tapiéro, CHI Elbeuf, Saint-Aubin-les-Elbeuf; C. Tardy, centre Arago, Perpignan; M.-J. Taudou-Martinel, cabinet de cardiologie, Blagnac; J.-M. Taupin, pôle prévention et éducation du patient, Soissons; C. Ter Schiphorst, EPICARD, Saint-Jean-de-Vedas; E. Thiébot, CH L.-Pasteur, Dole; T. Tibi, CH Broussailles, Cannes; F. Toumi, clinique Allera-Labrouste, Paris; P. Troisfontaine, CHR Citadelle, Liège, Belgium; A. Tuambilangana, CH L.-Pasteur, Cherbourg-Octeville; J.-M. Vailloud, CHU Timone, Marseille; P. Vernochet, réadaptation Bois-Gibert, Ballan-Mire; P. Viro, CHU Dupuytren, Limoges; P. Webert, CH Lemire, Saint-Avold.

References

- [1] Bonneux L, Barendregt JJ, Meeter K, Bonsel GJ, van der Maas PJ. Estimating clinical morbidity due to ischemic heart disease and congestive heart failure: the future rise of heart failure. *Am J Public Health* 1994;84:20–8.
- [2] Eriksson H. Heart failure: a growing public health problem. *J Intern Med* 1995;237:135–41.

- [3] Mehra MR, Uber PA, Francis GS. Heart failure therapy at a crossroad: are there limits to the neurohormonal model? *J Am Coll Cardiol* 2003;41:1606–10.
- [4] Dickstein K, Jaarsma T. Heart failure management programmes: delivering the message. *Eur J Heart Fail* 2005;7:291–3.
- [5] Cooper H, Booth K, Fear S, Gill G. Chronic disease patient education: lessons from meta-analyses. *Patient Educ Couns* 2001;44:107–17.
- [6] Groves T, Wagner EH. High quality care for people with chronic diseases. *BMJ* 2005;330:609–10.
- [7] Dracup K, Baker DW, Dunbar SB, et al. Management of heart failure. II. Counseling, education, and lifestyle modifications. *JAMA* 1994;272:1442–6.
- [8] Phillips CO, Singa RM, Rubin HR, Jaarsma T. Complexity of program and clinical outcomes of heart failure disease management incorporating specialist nurse-led heart failure clinics. A meta-regression analysis. *Eur J Heart Fail* 2005;7:333–41.
- [9] Rich MW, Beckham V, Wittenberg C, Leven CL, Freedland KE, Carney RM. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 1995;333:1190–5.
- [10] Selke B, Brunot A, Lebrun T. Economic repercussions of cardiac insufficiency in France. *Arch Mal Coeur Vaiss* 2003;96:191–6.
- [11] Stewart S. Financial aspects of heart failure programs of care. *Eur J Heart Fail* 2005;7:423–8.
- [12] Stewart S, Marley JE, Horowitz JD. Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet* 1999;354:1077–83.
- [13] Trochu JN, Baleyraud S, Mialet G, et al. Multicentre randomised trial of a multidisciplinary intervention program in heart failure patients in French medical practice. *Eur Heart J* 2003;24:484 [abstract].
- [14] Gask L. Role of specialists in common chronic diseases. *BMJ* 2005;330:651–3.
- [15] Glasziou P, Irwig L, Mant D. Monitoring in chronic disease: a rational approach. *BMJ* 2005;330:644–8.
- [16] Haute Autorité de santé. Available from: <http://www.has-sante.fr/>.
- [17] Juilliere Y, Jourdain P, Roncalli J, et al. Therapeutic education for cardiac failure patients: the I-care programme. *Arch Mal Coeur Vaiss* 2005;98:300–7.
- [18] Juillière Y, Trochu JN, Jourdain P, et al. Creation of standardized tools for therapeutic education specifically dedicated to chronic heart failure patients: the French I-CARE project. *Int J Cardiol* 2006;113:355–63.
- [19] McAlister FA, Stewart S, Ferrua S, McMurray JJ. Multidisciplinary strategies for the management of heart failure patients at high risk for admission: a systematic review of randomized trials. *J Am Coll Cardiol* 2004;44:810–9.
- [20] Cline CM, Israelsson BY, Willenheimer RB, Broms K, Erhardt LR. Cost effective management programme for heart failure reduces hospitalisation. *Heart* 1998;80:442–6.
- [21] Gonseth J, Guallar-Castillon P, Banegas JR, Rodriguez-Artalejo F. The effectiveness of disease management programmes in reducing hospital re-admission in older patients with heart failure: a systematic review and meta-analysis of published reports. *Eur Heart J* 2004;25:1570–95.
- [22] Jaarsma T, van der Wal MH, Lesman-Leegte I, et al. Effect of moderate or intensive disease management program on outcome in patients with heart failure: coordinating study evaluating outcomes of advising and counseling in heart failure (COACH). *Arch Intern Med* 2008;168:316–24.
- [23] Jaarsma T, van Veldhuisen DJ. When, how and where should we “coach” patients with heart failure: the COACH results in perspective. *Eur J Heart Fail* 2008;10:331–3.
- [24] Cleland JG, Louis AA, Rigby AS, Janssens U, Balk AH. Noninvasive home telemonitoring for patients with heart failure at high risk of recurrent admission and death: the trans-European network-home-care management system (TEN-HMS) study. *J Am Coll Cardiol* 2005;45:1654–64.
- [25] D’Ivernois JF, Gagnayre R. *Apprendre à éduquer le patient*. 2nd ed. Paris: Maloine; 2004.
- [26] Sandrin-Berthon B. *L’éducation du patient au secours de la médecine*. Paris: Presses universitaires de France; 2000.
- [27] Ekman I, Andersson B, Ehnfors M, Matejka G, Persson B, Fagerberg B. Feasibility of a nurse-monitored, outpatient-care programme for elderly patients with moderate-to-severe, chronic heart failure. *Eur Heart J* 1998;19:1254–60.