



## **Modeling Engineering of Therapeutic Education Approaches for Diabetic Patients and Quality of the Support and Human Resources Management Process : Towards a New Challenge in the Management of Public Health**

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### **Abstract**

The modeling engineering of psychotherapeutic approaches to diabetic patients has a positive impact on the quality of the support process and organizational, personal and professional development, in the sense that the education and neuro-educational training project constitutes a

powerful human resources management vector.

The research would attempt to analyze therapeutic education models and corresponding health promotion approaches, as well as the identification of methods and techniques used in health practice

As a result, the quality of the neuro-educational approaches is the guarantor of the effectiveness of the recommended support system. Adopting this imperative highlight, a new PCA patient-centered approach. This major concern therefore calls on the medical profession to question the impact and effects of collaborative support in the process of building and developing the conceptual, procedural and behavioral skills of diabetic patients which facilitate their self-knowledge, their self-determination and their awareness of the factors of therapeutic effectiveness and the promotion of their physical, moral, social and psychological well-being. It prompts us to ask ourselves how the different care teams and support actors organize and coordinate their andragogical actions, with a view to complementarity and synergy.

We proceed, through a descriptive and exploratory research approach, opting for a so-called longitudinal survey, by a semi-directive questionnaire and by an interview technique. By comparing the results of the study with the validation interviews, it emerges that appropriate attention must be paid to the support process to allow the diabetic patient to master all the components of reflective therapeutic practice and to achieve his personal and organizational development necessary for the development of a subject actor of change and innovation.

This support system engineering will define the frame of reference, including the ethical values and the basis of the required professional skills which will be applicable to any program for the development of cognitive and behavioral skills in diabetic patients.

The new vision will be built around adapted support practices, collaborative approaches, a comprehensive, harmonious and balanced therapeutic education program, personalized training courses and inclusive evaluation methods that go well beyond validation and tenure. (Towards a sick-centered vocation).

**Keywords:** Support engineering, Professionalization, New management, Quality, Therapeutic education, Patient-centered approach.

## Introduction

Diabetes is a major public health problem; its frequency is constantly increasing. It is one of the fastest growing global health emergencies of the 21st century (IDF, 2019).

It represents, by the cost of its management and its complications, an economic and social burden for diabetic patients; their loved ones, for the health system and national economies.

WHO estimates 422 million adult diabetics in 2014, against 108 million in 1980. The International Diabetes Federation (IDF) makes, in The update of its Diabetes Atlas (9th edition, 2019), an alarming point on the increasing incidence of diabetes worldwide, with a total of 463 million people (20–79 years) living with diabetes today, or 9.3% of the world's population, 4.2 million deaths / year directly due to diabetes with more women than men after the age of 60 an alarming point on the growing incidence of diabetes worldwide, with a total of 463 million people (20–79 years) living today with diabetes, or 9.3% of the world population, 4.2 million deaths / year directly attributable to diabetes, with an annual expenditure estimated at US \$ 760 billion (Serge, 2020).

Also, according to the IDF, the number of adult diabetics may increase to 700 million in 2045. More than 80% of deaths from diabetes occur in low- and middle-income countries. The WHO predicts that by 2030, diabetes will be the 7th leading cause of death in the world.

In Morocco, nearly 2.5 million Moroccans, over the age of 20, have diabetes, half of whom do not know they have this disease. This requires early detection because a subject living too long with undiagnosed diabetes will be at significant risk of diabetes complications with frequent use of health care and the resulting expense.

WHO estimates that Morocco will have around 4million diabetics by 2030? Together with the national survey on risk factors STEPWISE 2018, the prevalence of diabetes in Morocco is quite high: 10.6% of Moroccans over 20 years old have hyperglycemia and 10.4% of the population over 20 years of age have pre-diabetes (ENFRC, 2017-2018) this means that we will have a Moroccan, aged over 20 in 10, diabetic and also a Moroccan over the age of 20 20 out of 10 years, prediabetic. This finding calls for more attention to be paid to diabetes and a renewal of professional skills and strategies for the therapeutic management of diabetics.

### **The Problem Statement, Research Objectives and the Study Question**

Faced with the continuous increase in the number of diabetics, and the insufficient response to biomedical treatment, the medicine of follow-up and support is currently the subject of a major trend in work and research and represents a necessity and a challenge for caregivers and doctors.

According to (Foucart, 2008), the theme of support is spreading in our societies that we will

qualify as ultramodern". We can only observe its presence in multiple areas of social life: educational, social, health, support groups. The popularity of the word "accompaniment" seems, at first glance, to refer to what one might call the rejection of "taking charge": no longer wanting to "do in place" of the person, but allow him to do so. exercise by herself greater control over her life, support her in her efforts to find the answer to her problems and find her own path (Foucart, 2008), (Laurin, 2001), (Autès, 2008).

Support is a united social device, it simultaneously evokes an intention and a practice. The Latin roots of this word (ad - cum - panis, vers - avec - pain) refer to the idea of comfort and / or guide (ad) as well as to that of relationship (cum). This is why support is generally defined by the need to help a person facing intense and significant trials, such as illness and death, present or future. At the same time, it refers to the need to support her in the meanders and hazards that these trials trace in her biographical trajectory. It is therefore in the pitfalls of their social existence that individuals can learn to be themselves, thanks to the help and support of others (Jihane et al, 2018).

The management of diabetes is therefore based on drug treatment, dietetic measures and the promotion of physical activity, it requires the participation of the patient in behavioral changes as well as in the acquisition of certain skills, the patient becoming then his own "medicine". In mirror image, the doctor, in addition to his traditional role of prescriber of medication, must accompany the patient by playing his role of "doctor remedy" (Balint, 1973); (Moreau, 2011).

Therapeutic education is the cornerstone to support the diabetic patient in his care and also in his psychological support. It is recognized as an effective self-management capacity building tool, in which patients are empowered to take an active role in the management of their conditions.

Support for diabetic patients includes a therapeutic component and an educational component consisting of approaches from neuroscience and behavioral theories, which guide the didactic and educational choice of neuro-educational conceptions, techniques and methods.

The support by and with therapeutic education aims to help diabetic patients acquire or maintain the skills they need to better manage their life with a chronic disease with which they live with their loved ones on a daily basis, in order to help them (and their families) understand their disease and their treatment, collaborate together and assume their responsibilities in their own care, in order to help them maintain and improve their quality of life. (Fonte et al. 2014) Support appears to help build the self and the network in which the individual is part.

It is a way to help individuals gain confidence in their own ability to take care of themselves, this approach aims to maximize the available resources and the responsibility of each individual to change their attitude towards promoting the improvement in health status (Roxana et al, 2017).

The four main pillars of empowerment are: 1) empowerment of individuals; 2) leadership; 3) motivation and 4) development (education and information) (Torres et al, 2013). which constitute a powerful tool for managing the difficulties that patients presented in their management of diseases in an effective manner.

Thus, the diabetic patient becomes a partner of caregivers in the management of his disease and actor by acquiring the knowledge and skills allowing him to become involved in the self-management of his disease and its treatment. "Beneficiary and actor". Beneficiary of scientific progress, beneficiary of the knowledge of the doctor, beneficiary of support for autonomy, in order not - not first - to be observant, obedient, to comply with the medical prescription, but to "adapt it to his life plan; and this relative freedom gained will result in membership 2. Beneficiary and actor of treatment adapted to their living environment, the patient will establish a virtuous - effective - relationship with the doctor and the nursing team. Effective, because the clinical inertia of doctors and the non-compliance of patients shrink from the autonomy acquired by (Raymond, 2017).

This approach of psycho-socio-therapeutic support is not only centered on the disease and the methods of treatment, its major objective is to enable the patient to be able to be, to have self-determination and to be able to fulfill himself in all his life projects. It must be based on a collaborative relationship to increase its effectiveness.

The activity of the attending physician consists in designing therapeutic and hygieno-dietetic means adapted to the condition of the diabetic patient, to listen to him and to accompany him in the management of his chronic disease, to support him. It is therefore necessary to introduce, through support, a specific social bond, achievable under the condition of shared responsibility. This is how the doctor goes from a curative medicine centered on the disease to a supportive and accompanying medicine centered on the patient.

Patient-centered approaches have been developed for the case of chronic diseases. Indeed, if acute illnesses represent a temporary break with the way of life, chronic illnesses mean a definitive loss of the previous condition (Lacroix et al, 2003), which require continuous management in order to avoid or delay the deterioration of the patient's state of health.

In addition, the search for a better quality of care requires taking into account the clinical peculiarities of each patient, as well as taking into account their specific needs and expectations. The solutions proposed must therefore take into account several dimensions relating to both the specificity of each person (socioeconomic, psychological, ethical, cultural, etc.) (Lefebvre et al, 2010). and the relationships between these elements and their health impacts. Person-centered approaches (patient-centered or client-oriented, or even family or community-centered in the sense (Koren, 2010) integrate two dimensions: the patient and the practitioner. it is a question of enabling him to make the best decisions through the acquisition of essential skills for his own

care in an autonomous and responsible manner in partnership with the professionals who accompany him. Thus the patient establishes his own objectives and determines his own needs (Rogers, 1961) (Ruland, 1999). He thus goes beyond the status of a simple beneficiary, subject, of care and with a vocation to become an actor in his care (Ham, 2010), His behaviors (lifestyle, respect for the course of treatment, medication adherence) largely determine the course of his disease. Supporting the patient and helping him to manage his disease become an essential function, , function that the doctor does not can assume within the framework of the traditional consultation (Bras, 2011). Faced with patient self-determination and major changes in operational logic, the practitioner is led to consider the patient's point of view in order to better collaborate with him and his family. His care approach will therefore be based on a systematic, continuous and integrated process. This is referred to as a systematic process since it will take into consideration the clinical, psycho-sociocultural and economic aspects, as well as the objective and subjective needs, expressed or not, by the patient.

The continuity and integration of this care process is reflected in the diversity of practices (educational, awareness-raising, information, learning and psychosocial support actions) mobilized according to the conditions, needs and expectations. of the patient. An interdependence and a reciprocal legitimation of the contribution of each one (the academic knowledge and the expertise of the intervenor and the experiential knowledge of the patient with regard to his life experience with the disease) are thus created on the basis of a relational approach renewed (Bouchard, (1988a) and (1999b). But this also means a shared responsibility in the establishment of the objectives and the choice of the strategies to be implemented within the framework of a tripartite cooperation integrating the intervening party (medical, paramedical, social or medico-social), the patient and his loved ones throughout the course of care and the life course.

The latter involves a broader view of the patient's interactions with his environment because a better understanding of the dynamics of patient-environment interactions helps to minimize and circumvent potential obstacles that may hinder the life trajectory by maximizing the chances of opting for strategies and protocols of care most appropriate and the most adapted to the patient's case (clinical, psychological and social). Compared to traditional practices, the innovation lies in a better recognition of the patient and the problems he encounters in his relationship with services (Greenhalgh et al, 2004), which will favor a refocusing on the patient, i.e. 'one of the conceptual foundations of all the new service organization models supported by the WHO (Kröger et al, 2007) and (OMS, 2000). A broader vision of the patient's needs, of his interactions with his environment and of his clinical state, therefore implies an integrative (Kodner et al, 2000a and 2008b) approach of all the actors who intervene from near and far in his treatment protocol and his life trajectory so that the management of chronic pathologies is optimal from a clinical point of view and organizational.

Faced with the demographic and epidemiological transition (the growth and aging of the population, increased urbanization, the greater incidence of obesity, sedentary lifestyle and the longer survival of diabetic patients) which leads to the increase in the number of patients with diabetes requiring comprehensive, continuous and multidimensional care, the evolution of the health system in all Western countries is marked by the spread of integrative approaches (e.g. new coordination professions (Amyot, 2006); new socio-technical devices (Couturier et al, 2011). The search for efficiency and the concentration on the needs of the patient and his satisfaction are at the heart of current approaches in terms of the quality of (Donabedian, 1980) (Kröger et al, 2007) multiprofessional and multidisciplinary collaboration and coordination services (D'Amour et al, 2005). Two principles constitute the pillars of these new approaches to care. The first is linked to the search for both managerial and praxeological efficiency (Belzile et al, 2012), itself linked to the search for optimal solutions with regard to the analysis of needs and the field. intervention. The second principle, strongly correlated with the previous one, concerns the increasing consideration of the patient's needs, which is at the center of all service integration models / devices. This logic centered on the patient (or client, client-system, or even community in the sense (Koren, 2006) therefore makes it possible to move from a strictly interventionist model to a support model and an opportunistic medicine. to more proactive medicine (Bras, 2011).

The objective of this research is to describe, understand, characterize and explain the degree of effectiveness of the support methods likely to play a role in the structuring and promotion behaviors and attitudes of diabetics "health for education and not only health training..."

The research sub-questions can be broken down according to three central concerns:

1. How satisfied are physicians with training on therapeutic support approaches for diabetic patients?
2. What are the limits and contextual constraints that hinder the use by physicians of new approaches to support diabetic patients in a context of public health promotion?
3. What are the recommendations for improving support approaches to promote the health of diabetics in its multifactorial aspects?

## Literature Review

The frame of reference that we borrow finds its origin in several scientific disciplines in this case: pedagogy, medicine, epidemiology, clinical and social psychology, social communication, sociology, coaching .... The conceptual frame of reference constructed borrows in a combined way their theoretical foundations and the working methods of these different fields, while trying to contextualize it in the field of public health.

## Methodology

According to Social Research (Lundberg, 1947) "It is not the object that makes science but the method".

The recommended methodological approach is exploratory and descriptive of the mixed type: a qualitative study, within the framework of this research, makes it possible to deepen the issue of support and to interpret the degree of impact in the development of cognitive-behavioral skills and identity construction. Together, a quantitative analysis of the data collected will allow quantification of the data from the three semi-structured questionnaires, using a variety of analytical methods, in this case, the nominal Likert scale.

This exploratory research, which has the ultimate objective "to fill a void, a gap in the writings about the object of study (Van Der Maren, 1996).

The present study aims to verify the support models used by physicians to complete the gaps in support strategies for diabetic patients in the context of professional learning and to highlight the reflection on the concept of neuroeducation strategy as an approach methodological care, promoting the emergence and optimization of the full potential of patients to achieve concrete and measurable results in terms of promoting public health.

In fact, we noticed that the support theme had not been explored very much by the doctors questioned.

- Data collection methods: We mentioned that the data collection was carried out according to a questionnaire sent to the physicians involved in the support, each responding to a specific objective of analyzing the activity of the therapeutic support.
- Data processing and analysis technique: The analysis of quantitative and qualitative data was favored in this descriptive and exploratory research. The instruments adopted therefore varied according to the actors interviewed for this research. These techniques are as follows: the use of quantitative descriptive statistics for the data from the semi-structured questionnaire and the qualitative modeling of the items of the support theme.

Analysis of the content of the interview and its comparison with the public health and scientific framework to see if the information was congruent. It should be noted that the responses obtained in the questionnaires are analyzed to constitute an inventory of the support methods developed according to the stakeholders and beneficiaries of this process.

We proceeded to a methodological approach based on a mixed type exploratory investigation approach (qualitative and quantitative) with the sample of 105 physicians (general practitioners, diabetologists, endocrinologists, Cardiologists, nephrologists, ophthalmologist, etc.) from both private and public sectors combined.



## Results and Discussion

**Question 1 :** How satisfied are you with the training on therapeutic support approaches for diabetic patients ?

Table 1. Satisfaction of support approaches for diabetic patients

Techniques and Methods	Never used		Sometimes used		Rarely used		Often used		Very often used	
	N	%	N	%	N	%	N	%	N	%
Awareness	3	3%	5	5%	4	4%	30	33%	49	53,85%
Information: Transmission of knowledge and procedures.	4	4%	7	8%	4	4%	41	46%	33	37,08%
Conferences	39	44%	19	22%	21	24%	9	10%	0	0,00%
Interactive and fun group	48	54%	11	12%	20	22%	8	9%	2	2,25%
Role games	56	64%	13	15%	14	16%	4	5%	0	0,00%
Educational support	63	72%	14	16%	8	9%	2	2%	0	0,00%
Case study and situation analysis	64	75%	5	6%	12	14%	4	5%		0,00%
Experience sharing session.	62	72%	12	14%	11	13%	0	0%	1	1,16%
Focus groups	52	61%	9	11%	15	18%	8	9%	1	1,18%
Personalized educational workshops (APP)	53	65%	10	12%	15	18%	4	5%	0	0,00%
Neuroeducational and behavioral strategy related to health	48	56%	14	16%	13	15%	10	12%	1	1,16%
Technique and method of self-management	53	65%	10	12%	16	20%	2	2%	0	0,00%
Personalized program	67	78%	6	7%	11	13%	2	2%	0	0,00%
Regular medical consultation	0	0%	0	0%		2%		23%		75%

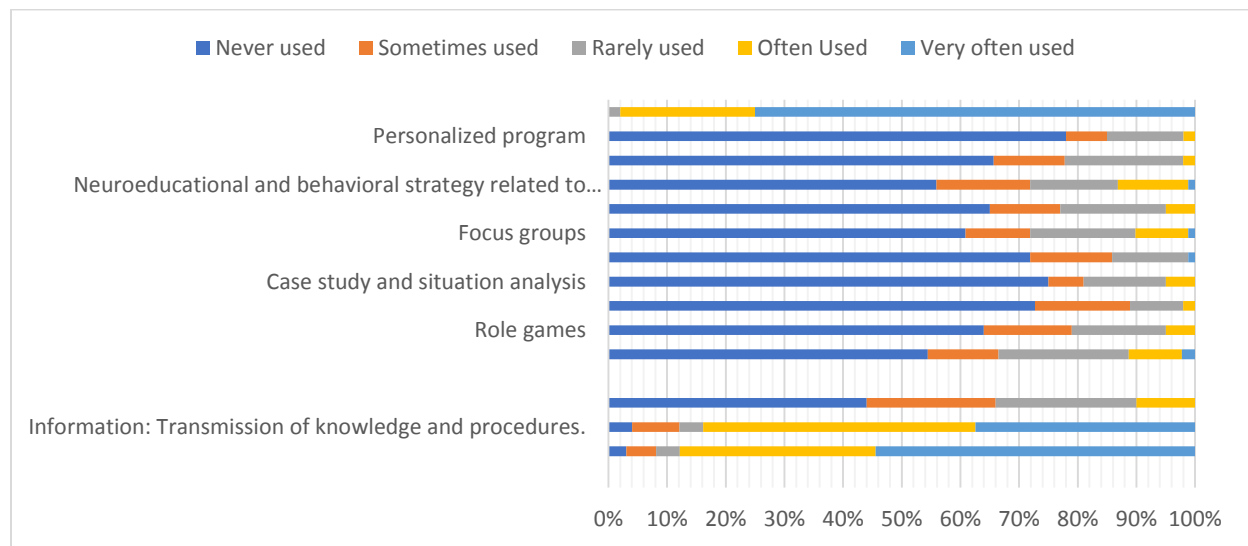


Figure 1. Satisfaction of support approaches for diabetic patients

The results obtained allow us to observe the predominance of direct educational support strategies, based on techniques and methods of transmitting knowledge and information concerning the disease and its treatment according to the "Patient object of care" paradigm. While the new personalized support activities, neuro-educational and behavioral strategies, are used less or not. The introduction of new neuro-educational and behavioral strategies reveal a very low percentage (APP personalized educational workshops, educational support, self-management techniques and methods, etc.). It is also important to underline that the weak use of active pedagogies is closely related to the gaps at the level of initial and continuing training.

From the outset, it seems interesting to note that the majority of the methods used are based on knowledge transmission techniques and care procedures in the biomedical sense. The approach will be qualified as behaviorist (Eymard et al, 2004), Which tries to model the links between education and health. The relationship between education and health, for what issues and for what training and research? Health education or health education? What are the challenges for training and for research?

In another register, we must underline that a certain number of physicians continue to proclaim the use of approaches qualified as cognitive-behavioral or neo-behaviorist, aimed at modifying prescribed behaviors in order to achieve immediate objectives. We underline the scarcity of psychosocial support strategies related to the development of a sense of competence, self-determination and self-esteem (Bandura, 1997).

In other words, the modeling of support techniques and strategies should be conceptualized and organized in a systemic manner in a collaborative educational system, to promote the effectiveness and relevance of the "" productive and constructive "support design.

**Question 2 :** Modeling of models and approaches to support diabetic patients in a public health promotion context.

Table 1. Education model to support diabetic patients

Education model	Health promotion approaches	
	Biomedical	Biopsychosocial
Teaching logic (based on teaching)	<b>Type 1:</b> Teaching of medical knowledge <b>62 %</b>	<b>Type 2:</b> Teaching of physical, mental and social health knowledge <b>20 %</b>
Learning logic (Patient Centered Approach)	<b>Type 3:</b> Learning medical knowledge <b>13%</b>	<b>Type 4:</b> Learning of physical, mental and social health knowledge <b>5%</b>

We note that there is no statistically very significant difference in the modeling of models and psychoeducational support approaches for diabetic patients.

**Type 1: teaching of medical knowledge**

The techniques and methods of support focused on the disease. This educational approach emphasizes risk prevention strategies. The education model is based on a logic of teaching medical know-how prescribed in advance by the medical profession. In this perspective, the support is based mainly on the pedagogy transmissive of knowledge and reproduction of the standardized model of treatment.

**Type 2: teaching of physical, mental and social health knowledge**

This type of therapeutic education of patients by taking into account non-medical aspects, by referring to psychosociological and social determinants integrating biophysiological techniques and personal development approaches "identity building, self-esteem and feeling of competence". Support approaches are still predetermined in advance. Therapeutic education then consists of educating healthy habits and adequate attitudes to promote health in all its aspects.

**Type 3: learning medical knowledge**

This type of support for health promotion emphasizes a collaborative approach to diabetics. Patients actively participate in the therapeutic care process. They co-define the means of treatment and the complications of the disease and choose the risk prevention strategies. The doctor is considered to be the expert model, who formalizes and personalizes the care program according to the expectations and choices of the patients.

**Type 4: learning physical, mental and social health knowledge**

The techniques and methods recommended take on a new educational approach, based on a logic of learning and training. These therapeutic methods focus more on active participation and negotiation of care programs and techniques. Patients are real agents of change and resource persons, innovating other practices and mediating the learning of others.

**Question 3 :** Data relating to the obstacles and constraints, which hinder the quality of the therapeutic support practice

The results show the limiting factors both for the accompanying persons, for the individual (patient) and within health organizations, as well as in the approach to the structuring of territories (rural and urban): Social, political, cultural, financial factors , techniques imposed by national and regional health policy and which influence the achievement of the objectives of health promotion strategies.

**For Healthcare Professionals**

Many caregivers lack the capacities and skills required to effectively support their patients in the

cognitive and behavioral domain.

- Lack of an adequate initial and continuing training program for health professionals in the field of psychosocial support for people with diabetes.
- Lack of didactic, educational and technological material (digital educational resources)
- Shortage of human resources trained in therapeutic education: lack of pedagogical support specialists focused on soft-skills.
- Lack of practical continuing training: Lack of specialized training dedicated to the ETP of diabetics, especially nurses specializing in support of diabetics.
- Lack of knowledge of new approaches and techniques of praxeological support.
- Large number of patients / per doctor.
- Difficulty in monitoring multiple pathology and personalized control. !!!!
- Therapeutic support generally punctual and decontextualized
- Insufficient collaborative psychosocial support linked to the care of the patient and his family. !!!!

### **For diabetic patients (socio-cultural factors)**

- Diversity of socioeconomic (illiteracy and poverty), cultural (intellectual level) and economic levels.
- Lack of motivation and investment of patients in support activities (focus on the biomedical protocol in the strict sense).
- Problem of collaborative communication of patients with socio-economic and personal difficulties: Non-compliance with therapy ie. a "mismatch between the patient's behavior with respect to his treatment and the recommendations recommended by his doctor"
- Lack of a self-management, self-monitoring and physical activity practice in the majority of patients: attendance and sedentary lifestyle ....

### **For health organizations**

#### 1. Health policy

- Timid political commitments in the promotion of psychosociological health
- Difficulty in operationalizing the strategic vision of empowerment, mediation and support for the engagement of all stakeholders (Doctors, decision-makers, researchers, partners, patients and regions).
- Insufficient motivation within institutions and political leaders to promote the continuing education of general practitioners and healthcare employers.

#### 2. Structural aspect

- Difficulty in coordinating individual and collective actions between stakeholders and partners (insufficient teamwork) in the promotion of public health.
- Lack of a device for evaluating the impact and effects of the quality of therapeutic education in

diabetic patients.

- Lack of an organizational structure at the hospital level and difficulty of support / qualitative consultation of each patient (construction of a personalized therapeutic education program)

### 3. Functional aspect

- Lack of financial resources.
- Difficulty of regional and national exchange of successful experiences on therapeutic support in diabetic patients to highlight appropriate, relevant and effective andragogical and educational approaches relating to therapeutic education. Lack of an action research structure in therapeutic patient education; to promote national health and education policies in accordance with the principles of therapeutic patient education.

## **Technical and financial factors (budgeting)**

- Lack of psychosocial diagnostic techniques and methods in public hospitals: Lack of qualified personnel.
- Insufficient financial resources for the implementation of a collaborative patient support and education system.
- Lack of financial support from institutions involved in the therapeutic education process.
- Lack of a mechanism for evaluating the impact and effects of therapeutic education on improving the quality of life.

**Question 4 :** Recommendations for improving support approaches in a public health context.

### 1. Health professionals:

- Concile the bio-physio-psycho-medical project and the patient's real life project
- Patients empowerment to transpose the acquired approaches in their life contexts.
- Set up scripting kits for support activities. Facteurs socioculturels économiques et psychologiques des patients diabétiques :
- Adopt a PCA patient-centered approach taking into account all the elements that affect the quality of health.

### 2. Organisations sanitaires :

- Set up an organizational and coordination framework between interveners in the health field and the care unit
- Geographic equity
- Involve experienced patients (resource patients) in mentoring novice patients with sharing of successful experiences (peer learning)
- Creation of a collaborative public / private patient support unit within hospitals (paying for patients who have the means) Financiers (budgétisation).

### 3. Program reference and therapeutic support activities !!!!

- Global and integrated approach to medical care and psychosocial education to set up a collaborative care plan and identity building.

**Question 5 :** How satisfied are you with the training on therapeutic support approaches for diabetic patients?

Table 2. Satisfaction of training on therapeutic support approaches

	Very unsatisfied		Rather dissatisfied		Neither satisfied nor dissatisfied		Rather satisfied		Very satisfied	
	N	%	N	%	N	%	N	%	N	%
Initial training	17	19,54%	19	21,84%	22	25,29%	20	22,99%	9	10,34%
Institutional continuing training	19	23,17%	15	18,29%	21	25,61%	22	26,83%	5	6,10%
Private continuing training	11	<b>13,58%</b>	12	<b>14,81%</b>	20	<b>24,69%</b>	22	27,16%	6	19,75%
Self-training	7	<b>8,24%</b>	8	<b>9,41%</b>	21	<b>24,71%</b>	30	35,29%	9	22,35%

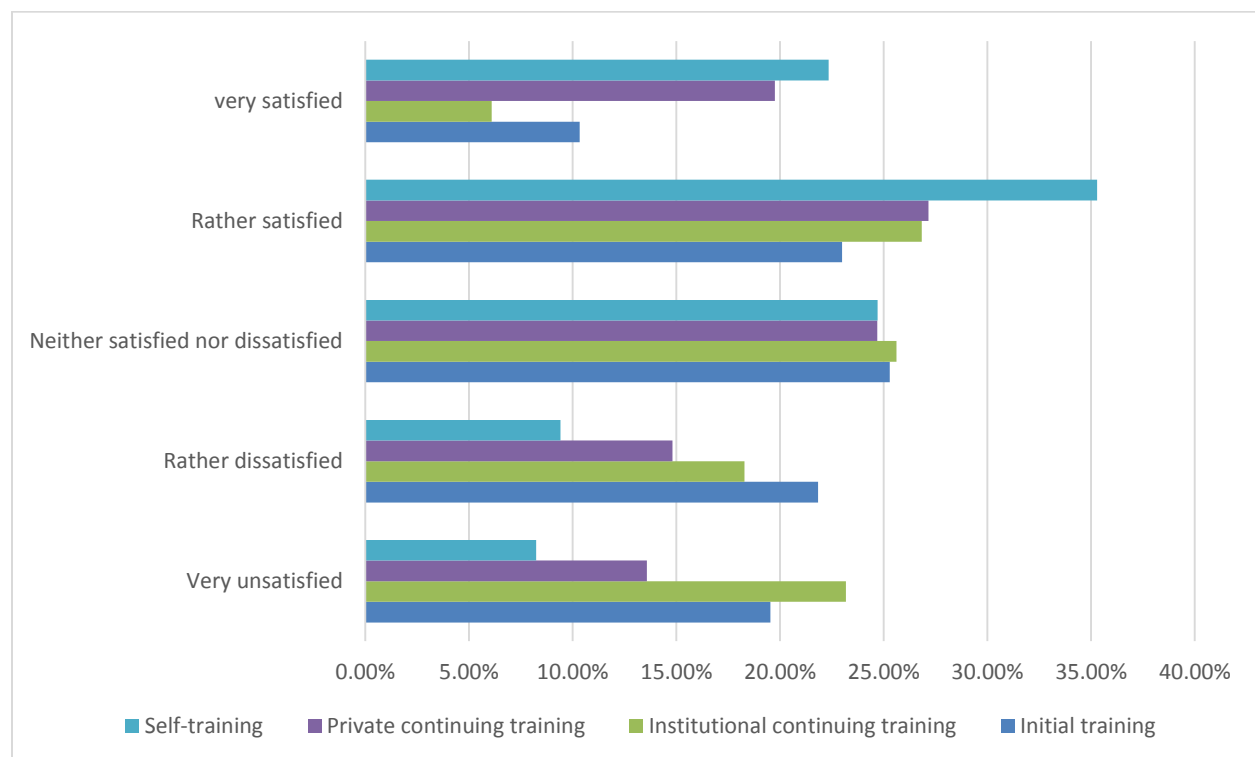


Figure 2. Degree of satisfaction with the various training programs on therapeutic support for diabetic patients

### Commentary

At first glance, we observe a very significant difference in the degree of satisfaction of the accompanying physicians in the practice of the management of diabetic patients. The analysis of the data relating to the therapeutic support strategies recommended by the accompanying physicians, indicate the dominance of the health education process. The results of the analysis of the satisfaction rate assessment show that the vast majority of doctors (66.67%) are not satisfied with the service provided by the various training spaces and devices. Indeed, only satisfactory

results in terms of training content lie in the process of self-training for the development of personal skills required for therapeutic education. As a result, it would be necessary to innovate and renovate the initial and continuing training programs for the implementation of new "active support pedagogies in its patient-centered multi-factional aspects. This bio-psychosociological educational orientation, which would have a triple aim: the biomedical dimensions, the dimensions of social interaction, which aim to ensure a relationship of protection, compassion, empathy and congruence with others in a climate of trust, sincerity and intelligent tutoring, guidance and scaffolding, just like tutoring as described by M. Paul, is based on scaffolding in the sense defined by JS Bruner in his modeling of tutorship interaction (Bruner, 1987) and the dimensions of constructive support with a psychological aim, which consists in energizing this person in the process of empowerment (with an emancipatory aim rather than a "legal" autonomy, with an empowering aim according to (Paul, 2012) "Support, as a specific professional posture, of his updated personal action plan, via a process of setting objectives and the means to be implemented to achieve them.

## Conclusion

Our first results show that there is an arsenal of support techniques for diabetic patients with limitation to classical biomedical behavioral approaches based essentially on behavioral information and awareness, and confirms the role of psych-affective dependence in adherence to therapeutic care. The second results show the heavy constraints, which hinder the integration of new therapeutic education approaches, which help patients to become real actors in their own changes, responsible subjects, capable of leading and managing their personal PPS health project. These results highlight the influence of certain variables such as the financial budget, lack of adequate continuing training and insufficient human and material resources. This study validates our research hypothesis: the relevance and quality of supportive approaches play a major role in the development of diabetic patients.

At the end of this research work, we should certainly make proposals to improve the impact of support in the personal and professional development of diabetic patients, but we should above all point the finger at the influence of personal factors, related to the patients themselves. We should also make those involved in initial and continuing training aware of the importance of neuro-educational strategies in the development of professional skills in order to better manage public health problems. Finally, our most important action is to campaign for the integration of the teaching of support strategies, at all levels, as well as the teaching of the contents of disciplinary modules.

From then on, the different postures of the guide appear particularly like a navigation between professional and personal poles, thus mobilizing several registers: the relationship, the action and the support system. The expected support becomes a posture: "The posture of reflexivity is central both for the guide and for the support" write (Biémar et al, 2008).

Finally, the support process would be modeled and articulated around four loops: relationship, negotiation, realization and empowerment (Charlier et al, 2012).

We also hope that the results of this work will be widely disseminated to alleviate the ardor of failure and abandonment in academia. To base the student's profession on a rational foundation, a guarantee of lifelong, transferable and useful learning.

Finally, we aim to rethink pedagogy to move from the "teaching" paradigm to that of "learning" by not only thinking about what the student should learn but also how he should do it.

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