Scale of therapeutic behavior of type 2 diabetic patients. Hierarchical analysis of a questionnaire

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SUMMARY

Objectives: Patient’s therapeutic behavior determines the quality of self care in diabetes. The sociological approach can contribute to a better understanding of the internal logic of patient’s behavior. The objective of our work is to study patients representations of their illness and its treatment in Moroccan type 2 diabetic patients. Our study concerns 307 type 2 diabetic patients.

Method: The collection of data has been achieved by means of a questionnaire by investigators with sociological training. The study consists of hierarchical analysis of a questionnaire on representations, attitudes and behavior of patients with the help of Loevinger’s coefficient.

Results: Test of several groups of hierarchized-answer questions allows to identify a 5 questions scale (scale whose coefficient value is 0.47). Otherwise, different social, psychological and therapeutic variables influence the integration of patients in the scale of therapeutic behavior.

Conclusion: It is possible to recognize a scale of therapeutic behavior in type 2 diabetes. The use of several other sociological qualitative or quantitative methods, by different authors and in different contexts enables to approach the logic of the therapeutic behavior. Its understanding can allows us to adapt the education, the treatment and the follow-up to every patient.

Key-words: Type 2 diabetes · Therapeutic behavior · Representations · Scale · Questionnary.

RÉSUMÉ

Objectif: Le comportement thérapeutique du patient détermine la qualité de la prise en charge dans le diabète. L’approche sociologique peut contribuer à comprendre la logique interne de ce comportement. L’objectif de notre travail est d’étudier les représentations, attitudes et comportement qu’ont les patients diabétiques de type 2 marocains vis-à-vis du diabète et de son traitement. Notre étude porte sur 307 patients diabétiques de type 2.

Méthode: La collecte des données a été réalisée au moyen d’un questionnaire réalisé par des enquêteurs de formation sociologique. Elle consiste en l’analyse hiérarchique d’un questionnaire portant sur les représentations, les attitudes et les comportements des patients à l’aide du coefficient de Loevinger.

Résultats: Le test de plusieurs groupes de réponses à des questions à réponse hiérarchisée a permis de retenir une échelle composée de 5 questions (échelle dont la valeur du coefficient est de 0,47.) Par ailleurs, différentes variables socio-psychologiques et thérapeutiques influencent l’intégration des patients dans l’échelle du comportement thérapeutique.

Conclusion: Il est possible de reconnaitre une échelle du comportement thérapeutique dans le diabète de type 2. L’utilisation de nombreuses autres méthodes sociologiques: qualitatives ou quantitatives par différents auteurs et dans différents contextes permet d’approcher la logique du comportement thérapeutique. Sa compréhension peut permettre d’adapter à chaque patient l’éducation, le traitement et la surveillance.

Mots-clés : Diabète de type 2 · Comportement thérapeutique · Représentations sociales · Échelle · Questionnaire.
Self care by patient is an essential part of treatment and long term follow-up of diabetes. The patient’s therapeutic behavior determines the quality of self care.

Diabetes is a model of global bio-technical, medical, psychological and social chronic disease. Many psychological and sociological factors influence the patient’s attitude and the therapeutic behavior. The process of psychological acceptance interfere with the patient’s attitude towards long term care and with therapeutic behavior [1].

The sociological approach can also contribute to a better understanding of the “internal logic” of the patient’s behavior: the interpretations that patients give to their illness and it’s treatment [2]. Health care providers must recognize these psychological and sociological factors because they can develop negative counter attitudes that can interfere with patient’s behaviour and treatment effectiveness.

The objective of our work is to study, through hierarchical analysis of a patient questionnaire, representations, attitudes and behavior of Moroccan type 2 diabetic patients concerning the disease and its treatment.

Patients

Our survey concerns 307 type 2 diabetic out-patients attending medical consultation at hospitals, clinics and in private practice in the cities of Casablanca, Meknès and Fès. The choice of the population is made by sampling. All voluntary patients present at consultation have been interviewed. Informed consent has been obtained from patients. The patients’ features and diabetes duration are shown in (Tab I).

Table I
Patients (number: 307; Sex: F: 212; M: 95) and diabetes duration.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>&lt; 35: 30</th>
<th>35-44: 39</th>
<th>45-54: 72</th>
<th>55-65: 101</th>
<th>&gt; 65: 64</th>
<th>No answer: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmarried</td>
<td>20</td>
<td>196</td>
<td>11</td>
<td>76</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Married</td>
<td>11</td>
<td>22</td>
<td>33</td>
<td>25</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Widowed</td>
<td>11</td>
<td>22</td>
<td>33</td>
<td>25</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Method

Questionnaire

— The collection of data has been carried out by means of a questionnaire on the representations, the attitudes and the behavior of patients. The conception of the questionnaire has been realised by the team responsible for the project. A preliminary questionnaire has been used to test understanding of questions and answers in 20 patients and has been modified according to the test’s results.

The questionnaire is composed of 60 questions out of which 24 questions have a hierarchized answer. Several groups of the 24 questions with hierarchized answers have been explored by hierarchical analysis. The test permits to identify a 5 questions-based scale.

Themes of the questionnaire are: 1 — Identity of the patient 2 — Reactions in the beginning of the illness 3 — Treatment and cost 4 — Behavior of patient in relation to illness 5 — Diet and physical activity 6 — Life of patient in relation to illness 7 — Modern/traditional treatment 8 — Patient’s beliefs and knowledge on diabetes 9 — Education and diabetes.

— The investigators are 5 students preparing a sociology doctorate and 2 sociologists. Their training has been carried out by the team responsible for the project.

Data analysis

The questionnaire data have been explored by two methods.

— Hierarchical analysis of the set of the questions has been made with the help of coefficient of homogeneity of Loevinger h. This coefficient measures the homogeneity of a scale and determine its validity. The levels to admit validity must vary between 0.30 (minimum) and 1 (maximum). A value of h more than 0.4 corresponds to a scale with good correlation between items.

— Chi2 test has been used to study the inter-relationship between some sociological and therapeutic variables and the scale of therapeutic behavior.

Results

— The test of several groups of questions with hierarchized answers permits to identify a scale based on 5 questions concerning physical activity, follow-up of diet, physician visit, practice of analysis for diabetes, health status (Tab II).

A homogeneity exists between all the items of the therapeutic behavior of patients. Together, these items constitute a scale whose coefficient value is 0.47.

In other words positive answers to the 5 questions are linked: the patients practising a physical activity regularly and following diet regularly or very regularly, practice the
analyses and visit the physician in a regular or very regular way and think that health condition is normal.

— The crossing of each of the items belonging to the scale, to the scale itself, give significant correlation except for the question on physician’s visit (Tab III).

— The crossing between different socio-psychological and therapeutic variables and the scale of therapeutic behavior allows to study the level of patient’s integration in the scale (Tab IV).

Age, sex, family status and socio-economic situation variables don’t exert a meaningful influence on the integration of patients in the scale. Only, the level of instruction has a meaningful influence of variable importance on the integration of patients in the scale.

The integration of patients in the scale of the therapeutic behavior is more important when the psychological shock level at the beginning of the illness is weaker and among the patients following a modern medical treatment (diet, medicines) more than among the patients following a traditional or associating modern and traditional treatment. Confidence in the efficacy of the physician’s advice and of modern medical treatment and belief in the non possibility of recovery, increase the integration of patients in the scale.

Discussion

The objective of our study is to recognize the logic of therapeutic behavior of type 2 diabetic patients in our country. Hierarchical analysis of a questionnaire identifies a scale of therapeutic behavior. It proves homogeneity and hierarchy of this therapeutic behavior. Otherwise, different social, psycho-

<table>
<thead>
<tr>
<th>Questions</th>
<th>%</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you practice a physical activity?</td>
<td>5.3</td>
<td>0.49</td>
</tr>
<tr>
<td>+ very regularly, - regularly, rarely, not at all, no answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What do you think of your present health state?</td>
<td>38.6</td>
<td>0.68</td>
</tr>
<tr>
<td>+ Very normal, normal, - I always feel sick, my health deteriorate, other, no answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Do you follow the diet?</td>
<td>79.5</td>
<td>0.61</td>
</tr>
<tr>
<td>+ Very regularly, regularly, sometimes, - Rarely, not at all, no answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Do you make your analyses for diabetes?</td>
<td>86.1</td>
<td>0.58</td>
</tr>
<tr>
<td>+ Very regularly, regularly, from time to time, - Rarely, not at all, no answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you visit your physician?</td>
<td>89.4</td>
<td>0.88</td>
</tr>
<tr>
<td>+ Very regularly, regularly, sometimes, - Rarely, not at all, other, no answer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each item, the sign (+) indicates the positive answers taken in account in relation to the orientation of the scale, the sign (-) indicates the negative answers. %: percentage of the positive answers to different items, h: coefficient of homogeneity of every question/all questions of the scale.
The survey, by means of a questionnaire, of relationships between the cognitive representations of diabetes, the diabetes-specific behavior and the quality of life, shows that certain cognitive representations are related to effective therapeutic behavior and a better quality of life [7].

The analysis of a multidimensional questionnaire allows the development of a psychosocial taxonomy of diabetic patients that can have significant implications on the management of patients [8].

The measure of psycho-social personal efficacy can be achieved with the help of Diabetes Empowerment Scale. D.E.S. is a valid and reliable measure. It is divided in 3 subscales: managing psycho-social aspects of diabetes, assessing dissatisfaction and readiness to change, setting and achieving diabetes goals [9]. The use of standardized questionnaires such as D.E.S. seems maladjusted to our socio-cultural context. Some authors notice that this kind of questionnaire is only adapted to patients of middle-classes in western countries.

The questionnaires adapted to socio-cultural contexts have the advantage to improve the knowledge and the therapeutic behavior in a particular context but it is difficult to compare results of different surveys because studied notions are different and the formulation of questions is variable.

For convenient reasons, our study took place only in medical centers. This can influence answers to some questions about treatment and follow-up. In the future, it will be necessary to choose other places for survey. In our context, it would be also useful to involve other items concerning, notably, traditional therapies and ramadan fasting into the survey.

The recognition of patient’s representations of their illness and the knowledge of demographic and socio-psychological characteristics can help to adapt the education, the treatment and the follow-up to every patient. On the other hand, comparing patients and health care providers representations and attitudes help to understand the relation between patients and health care providers and patient’s difficulties to follow the treatment. Different psycho-social approaches can be used to improve therapeutic behavior and treatment effectiveness.
List of participating centers:
Fès:
Private Practice: Dr Belyasid, Dr Benadada, Dr Badidi, Dr Douiri, Dr Raïs.
Ibn Khatib Hospital: Dr Kazbani.
Mohammed V Hospital, Sefrou: Dr Belhadi
Medical centers: Bab Boujate (name of center): Dr Mehraz, Doukarate: Dr Berrada, Al Adarissa: Dr Assouli, Narjiss: Dr Belmekhlouf, Oued Fès: Dr Fadlallah, Ben Slimane: Dr Hajoui and Dr Baroudi, Ain Kadous: Dr Benchekroun, Ain Haroun: Dr Aichour
Meknès:
Hospital and Diabetic Association: Dr Baji and Dr El Alaoui
Casablanca:
Ibn Rochd Hospital: Dr Tounsii
Diabetes center: Dr Cherkaou, Mmes Akhchoumi et Moudden (diabetic nurses)
Centre Mutualiste du Port Casablanca: Dr Dihi
Medical Centers Casablanca: Anfa (name of center): Dr Gharbi, Hay Hassani: Dr Guessous.

This study has been sustained by “MERC Concours de Recherche pour le Moyen Orient” Beyrouth Lebanon

References