

## **Psychosociological Study of Diabetes : Representation of the Disease, Level of Compliance with Treatment and Medical Management of Patients at the INSP in Adjamé (Côte d'Ivoire)**



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**ABSTRACT:** Diabetes is a chronic disease that constitutes a public health problem in Côte d'Ivoire. Its medical management is experiencing difficulties despite the sustained efforts of doctors and health personnel. In order to find answers to these difficulties, a psychosociological study relating the representation of the disease, the level of compliance with treatment and medical management was carried out among diabetic patients at the INSP of Adjamé. A sample of 131 adult patients, aged 30 to 73 years, with more than 2 years of disease experience was selected. These participants had an irrational representation (68) and a rational representation (63) of diabetes and were administered a battery of questionnaires on the representation of diabetes, treatment compliance and medical management. The results show that the representation of diabetes significantly influences the level of compliance with treatment and medical management. These results, which confirm the hypotheses put forward and are in line with previous work, may help practitioners to improve the prospects for the management of diabetic patients in Côte d'Ivoire and in Africa.

**KEYWORDS:** disease, diabetes, disease representation, level of compliance with medical treatment, medical management.

### **I. INTRODUCTION**

Diabetes, a chronic disease, is a disorder of the assimilation, use and storage of sugars brought by food. It results in high blood glucose levels (also called blood sugar). Diabetes occurs when the pancreas does not produce enough insulin or when the body is unable to effectively use the insulin it produces (WHO, 2022). It is also defined as "a metabolic condition characterized by chronic hyperglycemia related to a deficiency in either insulin secretion, insulin action, or both" (Koudou, 2017, p. 5).

Like all lifestyle diseases, diabetes is generally due to prolonged exposure to certain daily risk behaviors such as smoking, unbalanced diet, physical inactivity. Considered a public health problem, the World Health Organization (WHO), in 2005, estimated that 61% of all deaths, or 35 millions, and 49% of the global burden of disease were caused by chronic diseases. This rate will increase by 2030 to 70% of all deaths worldwide. Complications affecting the heart, blood vessels, eyes, kidneys and nerves. There is no cure for this disease, but it can be treated and controlled. Like all people, diabetics aspire to be better and to achieve this, they must receive medical care from specialists.

Medical management of diabetes refers to the treatment of diabetes, which is based mainly on the administration of oral or injectable antidiabetic drugs to normalize blood glucose levels (Khammassi, Haykel & Cherif, 2012). The goal is to maintain blood sugar levels within normal range, prevent complications and maintain a reasonable weight. For a better follow-up of the treatment and a better control of blood sugar in the long term, it is essential that psychological support be provided when needed (Orsatelli & Pheulpin, 2016). For these authors, being able to talk about one's difficulties or feelings of frustration helps to reduce stress, which seems to have negative effects on glycemic control.

In Africa and particularly in Côte d'Ivoire, the number of people with diabetes is increasing year after year. Thus, estimated at 5.7% in 1979, the prevalence rate of diabetes rose to 9.6% in 2010 (Koudou, 2017) and then to 6.2% according to the PREVADIA 2017 survey. Despite the efforts made by public authorities and health personnel (doctors, nurses), the results of the management of these patients seem to date to fall short of the expectations of the population. This situation is even more difficult in view of the resistance of this disease despite the evolution of modern medicine. This reality raises several questions about the causes of this resistance, including the level of involvement of the patient in the follow-up of his treatment (respect of prescriptions and proscriptions).

According to Tarquinio and Tarquinio (2007), compliance with medical treatment is the way a patient cooperates with a treatment. For these same authors, therapeutic compliance is also defined as the patient's capacities (physical, intellectual, social, psychological) to mobilize themselves to improve their health and well-being. For Ninot (2014), adherence is the extent to which a

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person's behaviors, having to take a medication, follow a diet and/or change lifestyle, correspond to the recommendations agreed upon with a health professional. Thus, patient compliance with treatment may vary or present different levels. The level of compliance with medical treatment is, according to Baudrant-Boga (2010), the degree of ownership and commitment of the patient in the optimal management of his long-term medication. It is the degree of correspondence existing between a person's behavior and the prescriptions concerning a given treatment. Under these conditions, given that behavior differs from one individual to another, according to Huteau (2013), the patient's level of compliance could be influenced by different individual factors such as personality and representation of the disease.

According to Osgood (1953), the notion of representation is linked to a set of reactionary processes. It designates the mental image, the perception whose content relates to an object, a situation, a scene, a disease of the world in which the subject lives. According to Abric (2003), the illness representation designates an organized set of information, constructed by a person to make sense of the illness. It is developed from the lived or observed experience of the illness, marked by social values such as honour and respect for tradition, which vary according to beliefs and cultures. We can therefore deduce that these representations can influence the patient's compliance levels. Robin-Quach (2009) emphasizes that a person's representations are characterized by his or her knowledge, explanations and the meaning he or she gives to what happens to him or her. For this author, the representations that the patient has of his or her illness make it possible to define an appropriate support program with the patient. Peze, Lumediluna, Thill, Sarde & Dany (2017) have shown that the representations that patients associate with the experience of their illness and with therapeutic education are closely linked and would therefore determine the perspective of medical management.

In sum, we could establish a relationship between the representation of the disease, the level of compliance with treatment and the therapeutic management of diabetic patients. In this perspective, most of the reviewed works deal with the adherence to the medical treatment of diabetic patients in relation to various psychosociological factors such as representations of the diabetes disease, gender, age, material and emotional social support, social status, mental and physical abilities (Abodo & al., 2013; Baudrant- Boga, 2010; Guénette & al., 2013; Guénette & al., 2011; LeClair, 2009; Mabika, 2016; N'goran, 2018; Peze & al., 2017; Reach, 2013; Reach & al., 2011; Robin-Quach, 2009; St-Jean, 2007). Overall, these works indicate that the relationships between the representation of the disease, the level of compliance with medical treatment and the therapeutic management of the diabetic patient have been studied separately. They show diverse representations and difficulties in adherence to treatment and therapeutic management of diabetic patients.

But why don't people with diabetes always do this? Are they lacking knowledge or information about their disease? Do they know that only strict adherence to medical treatment can improve their health and well-being? What are the factors that influence the behavior of diabetics towards the treatments prescribed by the doctors? Aren't their attitudes towards medical treatment a determining factor in the prospects of management? In order to find answers to these questions, we plan to conduct a psychosociological study of the relationship between the representation of the disease, the level of compliance with medical treatment and the perspective of therapeutic management among diabetic patients at the National Institute of Public Health (INSP) in Abidjan.

A joint study of the three variables would make it possible, on the theoretical level, to obtain new information concerning the patient's experience and perception of his or her illness and overall management. From a social point of view, it could help to open up avenues for improving therapeutic follow-up in the light of the results observed. To do this, methods and procedures should be developed to systematically promote adherence to treatment in patients, by introducing a combination of medical prescription and psychological follow-up. But it is also necessary to combine beliefs and care in order to improve the therapeutic follow-up that will lead to the well-being of the diabetic patient.

The present study, conducted from a psychosociological perspective, examines the perspectives of therapeutic management according to the level of compliance with treatment and the representation of the disease among diabetic patients at the INSP in Adjamé. This objective gives rise to the following hypotheses :

- The number of diabetic patients who have a rational representation of the disease and a high level of compliance with treatment is higher than that of their peers who have an irrational representation of the disease and a high level of compliance with treatment ;
- The number of diabetic patients with low adherence and requiring therapeutic management is greater than their counterparts with low adherence and medication management ;
- The number of diabetic patients with a rational representation of the disease, a high level of adherence to treatment and therapeutic management is lower than those of their peers with an irrational representation and low level of adherence to treatment.

## **II. METHODOLOGY**

The objective of this work is to conduct a psychosociological study of diabetes among patients at the INSP in Adjamé. To achieve this, we adopt a method that presents the variables under study, the participants, the material and the procedure used.

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## A. Presentation of Variables

Examination of the relationship between disease representation, medication adherence, and patient management for diabetes patients involves three variables : disease representation, the independent variable ; level of medication adherence, an intermediate variable ; and patient management perspective, the dependent variable.

**1. Representation of the Disease:** Representation refers to the mental representation of the external world by associating a perception with an idea, a category of facts, a mental image, a symbol or an explanatory model (Moscovici, 1984). The illness representation constitutes a cognitive and emotional information grid used to make sense of the illness and to react to it (Abric, 2003). The interpretation one gives to an ordeal greatly affects the way one copes with it and the possible solutions. According to Apostolidis (2006), Apostolidis, Duveen & Kalampalikis (2002), Herzlich (2001) and N'goran (2018), one's representation of the illness is either rational or irrational.

It is rational when the subject attributes his or her condition to a dysfunction of the immune system that must be treated. Indeed, the immune system is our defense tower. In addition to its protective role against external aggressions, it plays a primordial role in the internal balance of the body. Unfortunately, it happens that this system makes a mistake and attacks the pancreas, preventing it from eliminating the amount of sugar present in the body and causing it to accumulate. For example, in diabetes mellitus, the body does not produce enough insulin or does not respond normally to it, resulting in abnormally high blood sugar (glucose) levels.

It is irrational when the patient attributes the sources of his illness to chance or to the powers of outsiders (mystical, non-natural origin) and does not require medical treatment. In this case and according to Yao & al. (2009), the disease is perceived from the traditional African perspective. In fact, diabetes can be experienced as a transgression of family, tribal or divine prohibitions : one is ill because the prohibition has not been respected; or as the aggression of a third party: the patient is the victim of the malice of others (witchcraft, envy) generally evoked in African circles.

In short, representation as an organized set of information, values, and beliefs about a given object, notably the disease, is a qualitative variable with two modalities obtained from a questionnaire administered to subjects. These modalities are the rational representation and the irrational representation that the patient has of his or her illness. As such, the representation is a variable capable of influencing the level of compliance in diabetic patients based on these different modalities.

**2. Level of Compliance with Medical Treatment :** Adherence is defined as the ability to take one's medication correctly, as prescribed by the physician. Therefore, Haynes, Taylor and Sackett (1979) define the level of compliance as the degree of respect or adherence to a treatment. Sackett (1979) define the level of compliance as the degree of respect or deviation between the prescriptions and the patient's health practices. Morris and Schultz (1992) define compliance as the degree to which a patient follows medical prescriptions regarding diet, exercise or medication. Compliance is therefore a behaviour, i.e. the act of following the treatment prescribed by a specialist, and the degree to which this behaviour is manifested could be high or low (Corruble & Hardy, 2003).

High or good adherence is defined as the high degree of adherence to treatment or compliance, the adequacy of the patient's behaviour with the doctor's recommendations in terms of taking medication, clinical and biological monitoring, adherence to the diet or change of lifestyle and the medical prescription, both in terms of duration and dosage. It is a matter of rigorous taking of the prescribed medication and adopting the suggested behavioral guidelines to accompany the treatment in order to make it effective.

Low or poor adherence is defined as the low degree of adherence to treatment or compliance, the mismatch between the this is the case when the patient does not comply with the doctor's recommendations in terms of taking medication, clinical and biological monitoring, respecting the diet or changing lifestyle and the medical prescription, both in terms of duration and dosage. It is a matter of non-compliance with the rigorous taking of prescribed medication, or of taking medication in a whimsical manner, characterized by non-adherence, under-adherence, over-adherence or variable adherence.

In summary, the level of compliance is a qualitative variable that can be assessed using a questionnaire. This questionnaire makes it possible to identify two modalities, namely the high or good level of compliance and the low or poor level of compliance. These are therefore modalities that could influence or guide the therapeutic management of the diabetes disease.

**3. Perspective of Medical Care :** Medical management is the act of providing care to a person with symptoms due to an illness or accident. Therapeutic management of diabetes refers to the care of a patient with diabetes. This includes treatment to relieve physical pain and counseling to adopt healthy lifestyle behaviors for the diabetic patient. This care can essentially take two forms: a medicinal form and a therapeutic form.

The drug form or medical treatment refers to the biological, chemical treatment of the disease, which involves taking products to try to restore the constant sugar level in the body. It takes the form of oral or injectable "anti-diabetic" drugs. The latter can have different objectives depending on the case. They can stimulate insulin secretion, slow down the absorption of carbohydrates, provide insulin, but also help insulin to fulfill its role. Thus, the medical treatment of diabetes is based on the need to make the body's cells

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assimilate sugar and to provide the body with the necessary amount of insulin. This form is therefore mandatory, indispensable in the management.

The therapeutic form or therapeutic management or medical-psychological treatment that follows concerns the follow-up of the patient by a specialist to enable him/her to adopt adapted behaviors, including the follow-up of the medical treatment in order to improve his/her sugar level and to experience a relative well-being. It is the accompaniment of the patient by a doctor, a psychologist, a social worker, a specialized educator in order to allow him to understand the objective of the treatment and to be able to adhere. Thus, this psychological support which will help the patient to overcome his fears, his anxieties, his stress, his fears is necessary but not essential.

In summary, the perspective of medical management is a qualitative variable that can be apprehended from a questionnaire. It allows the identification of two modalities, namely the perspective of medication management and the perspective of therapeutic management. Thus, therapeutic management would be desired, advised, recommended for compliant patients and required, compulsory for non-observant patients living with the disease with fear and despair.

Finally, the description of the variables suggests that the emotional representation of the disease would play a mediating role between the cognitive dimensions of the disease and psychological well-being. Thus, a rational representation would be associated with a high degree of adherence to medical treatment, whereas an irrational representation would be linked to a low degree of adherence to medical treatment. An individual will put forward different coping strategies and these strategies will have an impact on adherence to care. In addition, good adherence to medical treatment would make drug management effective and therapeutic management important but not essential. In contrast, poor adherence to medical treatment would make drug management ineffective and therapeutic management essential. In fact, it is expected that the more rational the representation, the higher the therapeutic adherence and the same for the psychological, whereas the more irrational the representation, the lower the therapeutic adherence, leading to a low psychological state as well, hence the need for support.

### **B. Participants**

The study of adherence to treatment by diabetics at the Adjamé INSP limits the study population to diabetics at this institute, where the selection of participants is based on an empirical method: the purposive sampling technique. The INSP is located in the commune of Adjamé, on the edge of the commune of Plateau. When it was created in 1970, the INSP diabetes center had 600 patients. Today, it registers about 49262 patients with a daily flow estimated at 60. This center receives all categories of diabetics from all over the Ivory Coast and even from neighboring countries. The patients are of both sexes and of all ages from all socio-economic backgrounds and have had various years of illness.

The INSP has two diabetes centers : the pediatric center and the adult center. The examination of the therapeutic compliance, the perspective of management and the representation of the disease of diabetics requires a capacity of communication on the representation of the disease. This is only possible with adolescent and adult subjects. This communication requires a relatively long experience and social background. Adolescents do not have this experience. Therefore, it is more objective to direct us to the adult center to have a more precise representation of the disease of diabetes. The patients of the Adult Diabetes Center (CADA) are between 30 and 73 years old. The patients seen in this study have a diabetes experience ranging from 3 to 30 years. We received a total of 131 diabetic patients (men and women), 68 of whom had an irrational representation and 63 had a rational representation.

### **C. Material and Procedure**

In the search for material adapted to the objective of this study, we are considering a questionnaire that can provide information on the identity of the patient and assess the representation of the diabetes disease and the level of therapeutic compliance.

The Illness Perception Questionnaire-Revised (IPQ-R) is a self-report questionnaire developed by Moss-Morris & al. (2002). The objective of this tool is to measure the representation of the disease of diabetes on the patient's adherence to treatment. Presented in the form of a Likert-type scale, the scoring of this questionnaire is done in five (5) points, ranging from "not at all agree" to "completely agree", except for the "identity" subscale in which patients must answer "yes" or "no" to the different questions. This questionnaire initially has nine (9) subscales. But for this study, we use the first eight (8) where each item is scored from 1 to 5. The score is calculated for each subscale separately by adding the points obtained. However, to meet the needs of the study, we calculated a global score by adding the scores of the subscales. This allows us to obtain, according to the median technique, two groups of subjects with negative or irrational representation (135-161) and positive or rational representation (162-190).

Two measures are particularly used by practitioners to assess the level of compliance with treatment: consultation of the pharmacological record and discussion with the patient (Guénette, Moisan & Guillaumie, 2011). The latter, which is better adapted to the objective, consists of taking advantage of regular meetings with the patient to ask questions about his or her treatment. The best known questionnaire in this context is that of Morisky and colleagues (Morisky, Green & Levine, 1986). The most recent version has eight closed-ended questions where the patient must answer yes (0) or "no" (1), with the exception of question 8, where the responses are in the form of a Likert-type scale (never/rarely = 1, occasionally = 0.75, sometimes = 0.5, regularly = 0.25, all the time = 0). Thus, the level of compliance is considered high or good for a score of 8, average for a score of 6 or 7, and low or poor

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for a score of less than 6. However, we believe that the scores for average compliance can be distributed over those for good and poor compliance. Thus, we only consider individuals to have either high or good compliance (scores of 8 to 7) or low or poor compliance (scores of 6 to 0).

Ultimately, three questionnaires are used: the identification, diabetes representation and medical treatment compliance questionnaire. To avoid testing subjects already worn out by the disease, all these instruments were presented only once to the subject in a well-structured inclusive set. Thus, with the agreement of the officials, we went every morning for a month and a half, from September 07, 2021 to October 29, 2021, to the CADA to interview patients sitting in the lobby waiting to be seen by the doctor. It is through the articulation of these instruments that we collected the data that are analyzed with the nonparametric of khi square test of Pearson.

### III. RESULTS

Examining the relationship between disease representation, level of adherence to treatment and perspectives on medical management raises several concerns. These concerns relate first to the relationship between the representation of the disease and the level of compliance with treatment. Secondly, it concerns the relationship between the level of compliance with treatment and the prospects for medical management. Finally, it concerns the relationship between the representation of the disease, the level of compliance with treatment and the prospects for medical management.

#### A. Representation of the Disease and Level of Compliance

We examine levels of adherence according to whether the subjects' representation of diabetes is rational or irrational (see table I).

**Table I. REPRESENTATION OF THE DISEASE AND LEVEL OF COMPLIANCE WITH TREATMENT**

|                               |            | Level of Compliance with Treatment |      | Total |
|-------------------------------|------------|------------------------------------|------|-------|
|                               |            | Low                                | High |       |
| Representation of the Disease | Rational   | 15                                 | 48   | 63    |
|                               | Irrational | 31                                 | 37   | 68    |
| Total                         |            | 46                                 | 85   | 131   |

Table I shows the frequencies of subjects with low and high levels of compliance according to whether they have a rational or irrational representation. Analysis of the data shows that the frequency of diabetic patients with high levels of compliance with medical treatment and a rational representation of the disease is significantly higher than that of their peers who have an irrational representation of the disease,  $X^2(1) = 6.8, P < .01, (X^2_{th} = 6.64)$ . Thus, the hypothesis from this perspective is confirmed. It can therefore be said that the level of compliance with medical treatment is influenced by the representation of the disease.

#### B. Level of Treatment Compliance and Medical Management

Medical management performed according to levels of adherence to treatment are presented in table II.

**Table II. LEVEL OF TREATMENT COMPLIANCE AND MEDICAL MANAGEMENT**

|                                      |      | Medical Care |         |       |
|--------------------------------------|------|--------------|---------|-------|
|                                      |      | Drug         | Therapy | Total |
| Level of Compliance of the Treatment | Low  | 03           | 43      | 46    |
|                                      | High | 49           | 36      | 85    |
| Total                                |      | 52           | 79      | 131   |

Analysis of the data in table II shows that the frequency of diabetic patients with a high level of medical adherence and predominantly drug management is significantly higher than that of their peers with low levels of medication adherence,  $X^2(1) = 32.58, P < .01, (X^2_{th} = 6.64)$ . The hypothesis in this perspective is therefore confirmed. It can therefore be said that the adoption of therapeutic management of diabetics is guided by the level of compliance with medical treatment observed.

#### C. Representation of the Disease, Level of Compliance with Treatment and Medical Management

What perspective of medical management for diabetic patients according to their levels of compliance with treatment and their representations of the disease (table III).



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**Table III. REPRESENTATION OF THE DISEASE, LEVEL OF COMPLIANCE WITH TREATMENT AND MEDICAL MANAGEMENT**

|                      | Medical Care |         |       |
|----------------------|--------------|---------|-------|
|                      | Drug         | Therapy | Total |
| R Irrational*NO High | 06           | 31      | 37    |
| R Rational*NO High   | 31           | 00      | 31    |
| R Irrational*NO Low  | 00           | 48      | 48    |
| R Rational*NO Low    | 15           | 00      | 15    |
| Total                | 52           | 79      | 131   |

In response to this question, analysis of the data in table III shows that the interaction between the representation of diabetes and the level of adherence to treatment (Representation of diabetes\*Level of adherence to treatment) on medical management is significant at 3 ddl and at the .01 probability level ( $X^2 = 109.99$  versus  $X^2_{th} = 11.34$ ). This result suggests that patients with a rational representation of diabetes and a high level of compliance with medical treatment have a predominantly medicinal management while their peers who have an irrational representation of diabetes and a low level of compliance with medical treatment require both medicinal and therapeutic management.

We can therefore say that the adoption of a therapeutic management of diabetes is oriented by the level of compliance with the medical treatment observed, which is itself determined by the patient's representation of diabetes.

## IV. DISCUSSION

The realities of management of chronic diseases, particularly diabetes, among patients at the Adjamé INSP prompted an examination of the representation of the disease and the level of compliance as determining factors in this disease. Overall, the results obtained show that the patient's representation of diabetes determines his or her level of compliance with treatment, which in turn determines the perspective of medical management. These results, which confirm the hypotheses formulated overall, can be explained on the basis of Moscovici's (1984) theories of social representation and Rotter's (1954) "locus of control".

According to Moscovici (1984), social representation as a phenomenon of interaction is based on the postulate that all reality is represented, i.e. appropriated by the individual or the group, reconstructed by its cognitive system, integrated into its value system, which is itself dependent on its history and the social and ideological context that surrounds it. Thus, for Moscovici, the patient's representation of the illness integrates this reality and is presented in rational or irrational form.

Patients who have a rational representation of the disease accept that the human organism sometimes experiences dysfunctions. Therefore, these subjects conceive the disease as a reality which, when properly treated, leads to improvement or cure. They have an objective perception of the disease: of its origins and its manifestation. This objectification according to Moscovici (1984) takes into account the information about the disease and its functioning, which allows the patient to think positively about the disease and to accept any treatment. Following the selected information which is a function of his way of thinking, of his culture, of values and norms, the patient will make a significant schema according to his representation of the disease, of his conception of the world. And this schematization will replace the reality of the disease itself. This is possible because the representation is coherent and concrete. The thoughts materialize in an obvious way and become objective thoughts about the realities of the disease and its management process. An incorporation or anchoring of these elements in the subject's system of knowledge and values will lead to a rigorous follow-up of the therapeutic indications. This will lead to good compliance with the medical treatment and thus to sufficient medication.

Whereas patients with an irrational representation of the disease have a subjective understanding of diabetes. They attribute it to external invincible elements, hence its inability to be cured. They believe that the disease occurred as a result of a spell, an invisible hand, a divorce or family abandonment. This is the case, for example, of respondent G.J.C: "*My illness appeared after one of my jealous neighbors turned into a snake and bit me in my field*". This conception of the disease makes the patient hostile to any treatment or follow-up, because for him, the treatments will not be able to do anything since the origin of the disease is external. The irrational representation of the disease attributes the origin of the illness to an external source and therefore leads to a low level of compliance as observed, leading to a need for medical follow-up or psychological support.

The involvement of the patient in his or her treatment in order to evaluate his or her level of compliance is also explained by the "locus of control" theory of Rotter (1954), who notes that patients act according to the degree of control they believe they have over what happens to them. According to Rotter (1954), individuals tend to consider that the events that affect them are the result of intrinsic factors, their own actions, abilities or characteristics, or the impression that they control the environment, or, on the contrary, that they are the result of external factors over which they have little influence.

An individual with an internal locus of control believes that he or she can influence the course of the disease and treatment outcomes through his or her own actions. A diabetic patient who believes that his or her actions in the face of his or her disease could limit

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long-term complications is more inclined to test his or her blood sugar regularly and to monitor his or her diabetes more closely. A patient with an external locus of control believes that he or she has little control over the course of events; that his or her state of health is determined by fate, bad luck, a powerful hand or influential people around him or her. Thus, he believes that what must happen will happen anyway. He is therefore less motivated to manage his diabetes because he believes that his behaviour, i.e. taking medication, would not change the therapeutic outcome. Its cognitive aspect and its affective and cultural implications correspond to the field of representations or conceptions of health, disease and treatment. This explains the fact that we have a lower level of compliance with patients with an external locus of control and an irrational representation which necessarily leads to psychological support.

In light of Moscovici's (1984) theories of social representation and Rotter's (1954) "locus of control", the results of the present study show that culture, norms and values influence the representation of the disease. In other words, the culture or education imprints a different perception on individuals during the events they experience. Therefore, this perception of the patient would also vary his or her level of therapeutic compliance. Also, the "locus of control" using the involvement of the patient to evaluate his level of compliance shows the fact that patients with an internal locus of control have a higher level of compliance, because they attribute their condition to an objective reality like patients with a rational representation of the disease. However, patients with an irrational representation, i.e. an external locus of control, have a low level of compliance, requiring psychological support for better management.

After this interpretation of the results of the analysis from the data collected in this study, we can now see how these results are presented with other works carried out in the paradigm of the studies carried out on the perspective of management of the diabetes disease, its representation by the patient and the compliance of the medical treatment. Thus, in a certain rapprochement, Fonga (2014) conducted a study with the aim of exploring the representations of patients on their ability to comply with treatment in a chronic disease. In this respect, the convergence comes from the fact that the study related the representation and the therapeutic observance in a chronic pathology and the results show that there is an influence of the representation of the disease on the therapeutic observance. However, for having made a qualitative study on the arterial hypertension, the work of Fonga (op.cit.) know divergences with ours that is quantitative and realized in the case of the diabetes.

The results of St-Jean's study (2007) examining illness representations in men and women suffering from loss of consciousness are similar to those of the present study, which deals with the relationship between illness representation, compliance with medical treatment and management in diabetic patients. However, many discrepancies appear between these two studies. Indeed, the work of St-Jean (op. cit.) does not deal with diabetes and the results obtained are not significant. In other words, they show that the representation of the disease does not influence therapeutic compliance and management, whereas ours shows a significant link between the variables studied.

The work of Mabika (2016) that addressed the influence of beliefs and representations of diabetes on treatment adherence in women is also in agreement with the present study. Indeed, in both a quantitative and qualitative study, he finds that perceptions related to the disease and treatment influence. There is also disagreement insofar as in the work of Mabika (op. cit.) the sample is composed only of women. However, there are also disagreements in that in the work of Mabika (op. cit.) the sample is composed only of women, which is not the case in our study which has a mixed sample.

A study N'goran (2018) examined the relationship between disease representation and medical treatment adherence among diabetic patients in the INSP. The results obtained show that disease representation influences the level of medical treatment adherence. Such results are in line with the results obtained in the present work. However, divergences are observed insofar as N'goran (op. cit.) makes a psychological study of the observance of the treatment according to the sex and the representation whereas the present study makes a psychosociological study of the perspectives of management according to the representation of the diabetes and the level of the observance of the treatment taken as intermediate variable.

Similarities are also observed in Peze & al. (2017) who conducted a study with the objective of understanding the representations that diabetic patients associate with the experience of their disease and therapeutic education (TVE) by relating them to their socioeconomic characteristics (level of study, professional activity, income) and to their participation in a Therapeutic Education Program (TEP). The results show that socioeconomic characteristics are significantly associated with discourses on the disease and TPE. In contrast, the variable

"Program participation" is not associated with any of the classes. The way patients think about illness and TVE is closely linked to the social context in which they are enrolled. Like these authors, Robin-Quach (2009) carried out a study to find out the representations that patients have of their illness and health in order to define an appropriate support program with them and reduce the risk of ineffective management of their therapeutic program. The results show that the representation, a function of the social context, influences therapeutic compliance. Optimal educational management of the patient can only be achieved on an individual basis, in a collaborative relationship between health professionals and patients. Lastly, it must be carried out largely outside the hospital. These objectives and results are consistent with those of the present study. However, the discrepancies arise from the fact that these authors used. The research was carried out in a qualitative context, whereas ours was carried out in a quantitative context.

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Ultimately, despite the similarities between the results of the studies reviewed and our own, none of the studies examined the representation of diabetes, the level of adherence to treatment, and the management of treatment from a psychosociological perspective. In these circumstances, the present study remains unique from the other work reviewed in focusing on variables that guide the management of patients with diabetes.

### V. CONCLUSION

The psychosociological study of diabetes raised questions about the link between the representation of the disease, the level of compliance with treatment and the medical management of diabetic patients at the INSP of Adjamé. The method used to answer these questions made it possible to show that the rational or irrational representation of the disease determines the level of compliance with the patient's medical treatment, which in turn guides the medical management of the diabetic patient. We can therefore say that the perspective of medical management is determined by the representation of the disease through the compliance of the medical treatment. The representation of the disease is subordinated by the culture and education, the beliefs and the way of conceiving the present reality. These results which confirm the emitted hypotheses and answer the questions of departure reinforce the level of comprehension and the conviction that the perspectives of management are directed by the culture and the perception of each patient. To be effective, diabetes management must take into account the patient's representation; his or her thinking about diabetes and his or her level of compliance matter.

Since the treatment of diabetes is lifelong, this study adds to the understanding of the level of compliance of patients with their medical treatment. Better yet, it may enable health care providers to improve the quality of care. Given that medical prescription is not sufficient to eradicate or improve the condition of patients, they can rely on the perception that patients have of the disease according to their gender to consider opening up a therapeutic follow-up pathway, i.e. introducing the medical prescription-psychologist follow-up relationship. Thus, the medical care of the patient is much broader than the simple health framework. Consequently, in addition to a compulsory multi-professional and interdisciplinary team work, it requires To show creativity and open-mindedness to the confrontation of different points of view, in order to modify the representations of the disease, of health and to improve the treatment or the perspectives of taking care of diabetes in Ivory Coast and in Africa.

### REFERENCES

- 1) Abodo, J., Oka, F. N., Ankotché, A., Yao N'dri, A., Nibaud, A., Koffi-Dago, A., Binan, A., Ablé, E. A., Kouassi, F., Kouamé, V., Lokossué, A., Hué, A. et Lokrou, A. 2013. Mesure de l'observance thérapeutique chez les patients diabétiques suivis à l'hôpital militaire d'Abidjan. *Guinée Médicale*, 81, 45-57.
- 2) Abric, J.-C. 2003. *Méthodes d'étude des représentations sociales*. Toulouse : Erès.
- 3) Apostolidis, T. 2006. Représentations Sociales et Triangulation : Une Application en Psychologie Sociale de la Santé. *Psicologia : Teoria e Pesquisa*, 22(2), 211-226.
- 4) Apostolidis, T., Duveen, G., Kalampalikis, N. 2002. Représentations et croyances. *Psychologie & Société*, 5, 7-11.
- 5) Baudrant-Boga, M. 2010. *Penser autrement le comportement d'adhésion du patient au traitement médicamenteux : modélisation d'une intervention éducative ciblant le patient et ses médicaments dans le but de développer des compétences mobilisables au quotidien. Application aux patients diabétiques de type 2*. Thèse de doctorat de l'Université Joseph Fourier, Grenoble 1.
- 6) Corruble, E. et Hardy, P. 2003. Observance du traitement en psychiatrie. *Encycl Méd Chir, Psychiatrie*, 37, 860-865.
- 7) Fonga, S. 2014. *Les représentations de la maladie chez des patients hypertendus originaires d'Afrique noire ayant migré en France*. Thèse de doctorat en médecine générale. Université Pierre et Marie Curie, Paris 6.
- 8) Guénette, L., Moisan, J. & Guillaumie, L. 2011. L'adhésion au traitement médicamenteux : concepts et moyens pour la maintenir ou l'améliorer. *Cahier de Formation Continue de l'actualité pharmaceutique*, 12, 1-4.
- 9) Guénette, L., Moisan, J., Breton, M.-C., Sirois, C. et Grégoire, J.-P. 2013. Difficulty adhering to antidiabetic treatment : Factors associated with persistence and compliance. *Diabetes and Metabolism*, 39, 250-257.
- 10) Haynes, B., Taylor, W. et Sackett, D. 1979. *Compliance in Health Care*. Baltimore : Johns Hopkins University Press.
- 11) Herzlich, C. 2001. Les représentations sociales de la santé et la santé en mutation : un regard rétrospectif et prospectif sur la fécondité d'un concept. In F. Buschini & N. Kalampalikis (Orgs.), *Penser la vie, le social, la nature. Mélanges en l'honneur de S. Moscovici* (pp. 189-200). Paris : Editions de la MSH.
- 12) Huteau, M. 2013. *Psychologie différentielle - Cours, exercices et QCM*. Paris : Dunod.
- 13) Khammassi, N., Haykel, A., Cherif, O. (2012). Règles générales de la prise en charge du diabète avec troubles psychiatriques. *La Tunisie Médicale*, 90(04), 275-277.
- 14) Koudou, G. H. P. 2017. *Facteurs de risque du diabète dans la population non diabétique de la région du Sud-Comoé (Côte d'Ivoire) : cas des villes d'Aboisso et de Bonoua*. Diplôme d'Etat de Docteur en Pharmacie, UFR Sciences Pharmaceutiques et Biologiques, Université Félix Houphouët-Boigny Abidjan.



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- 15) LeClair, C.-A. 2009. *Représentations sociales du diabète chez des jeunes francophones en milieu scolaire au Nouveau-Brunswick*. Philosophiae Doctor (Ph.D.) en nutrition. Université de Montréal.
- 16) Mabika, L. C. 2016. *Influence des croyances et des représentations du diabète sur l'observance au traitement chez des femmes enceintes : étude comparative*. Thèse de doctorat en Psychologie. Université de Lorraine, France.
- 17) Morisky, D., Green, L. & Levine, D. 1986. Concurrent and predictive validity of a self-reported measure of medication adherence. *Med Care*, 24, 67-74.
- 18) Morris, S. et Schulz, R. 1992. Patient compliance - an overview. *Journal of Clinical Pharmacy and Therapeutics*, 17, 283-29.
- 19) Moscovici Serge 1984. *Psychologie sociale*. Paris : PUF.
- 20) Moss-Morris, R., Weinman, J., Petrie, K. J., Horne, R., Cameron, L. D., & Buick, D. 2002. The Revised Illness Perception Questionnaire (IPQ-R). *Psychology and Health*, 17(1), 1-16.
- 21) N'goran, R. A. 2018. *Sexe, représentation de la maladie et niveau d'observance du traitement médical chez des patients diabétiques à l'Institut National de la Santé Publique (INSP) à Abidjan*. Mémoire de Master en Psychologie Génétique Différentielle, Département de Psychologie, Université Félix Houphouët-Boigny Abidjan-Cocody.
- 22) Ninot, G. 2014. Définir la notion d'observance thérapeutique. *Blog en Santé*, 24, 13-15.
- 23) OMS, Organisation Mondiale de la Santé. 2005. *Prévention sur le diabète*. Organisation Mondiale de la Santé.
- 24) OMS, Organisation Mondiale de la Santé. 2022. *Rapport mondial sur le diabète*. Organisation Mondiale de la Santé.
- 25) Orsatelli, B. et Pheulpin, M.-C. 2016. *Nous, diabétiques dans la vraie vie*. Lyon : Editions Josette.
- 26) Osgood, C. E. 1953. *Théorie méditationnelle : l'expression et la représentation*. Paris : Harmattan.
- 27) Peze, V., Lumediluna, M. L., Thill, J.-C., Sarde, E. & Dany, L. 2017. Représentations et vécus associés au diabète et à l'éducation thérapeutique : étude qualitative. *Education thérapeutique du patient, EDP Sciences*, 9 (1), 1-36.
- 28) Reach, G. 2013. Non-observance dans le diabète de type 2. *La presse médicale*, 42(5), 886-892.
- 29) Reach, G., Michault, A., Bihan, H., Paulino, C., Cohen, R., et Le Clésiau, H. 2011. Patients' impatience is an independent determinant of poor diabetes control. *Diabetes and Metabolism*, 37,497-504.
- 30) Robin-Quach, P. 2009. Connaître les représentations du patient pour optimiser le projet éducatif. *Recherche en soins infirmier*, 98, 36-68.
- 31) Rotter, J. 1954. *Social learning and clinical psychology*. Englewood Cliffs (New Jersey): Prentice Hall.
- 32) St-Jean, K. 2007. *Syncope récurrentes : qualité de vie et influences des représentations de la maladie, du sexe et du type de syncope*. Thèse de doctorat en Psychologie. Université du Québec, Montréal.
- 33) Tarquinio, C. & Tarquinio, M.-P. 2007. L'observance thérapeutique : déterminants et modèles théoriques. *Pratiques psychologiques*, 13, 1-19.
- 34) Yao, Y. P., Yeo-Tenena, Y. J.-M., Assi-Sedji, C., Tetchi, E. O., Ngongi, K. P. P., Delafosse, R. C. J. 2009. Itinéraires thérapeutiques des schizophrènes à Abidjan. *L'information psychiatrique*, 5(85), 461-469.



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