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Diabetes Related Distress in Transitional Age Evaluated By "Problem Areas In Diabetes" In Type 1 Diabetic Patients from Marrakech

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***Abstract*— Type 1 diabetes (T1D) represents 5.3% of all types on diabetes. Its incidence is increasing around the world as it is in the Middle East and North Africa Region, where the incidence is at 1/100 000. T1D touches young subjects and is then established in a growing body. Transitional period is a crucial phase with physical and emotional distress. Psychosocial difficulties are an additional challenge for these young patients.**

Aim of the study: Evaluate diabetes distress in transitional age using 'problem area in diabetes (PAID) in its Arabic transcultural adaptation.

Materials and methods: Problem area in diabetes questionnaire was self-administered in 50 type 1 diabetics that were followed up in the department of endocrinology in University medical hospital of Marrakech.

Results: Over the population evaluated; 54% were female. The median of age was 17, 54 years. 32% were younger than 15 years old and 68% were older. 84% were living in urban area. 78% of them were students. 48, 6% had duration of diabetes <5 years and 56% had an A1c above 9%. 18% of patients had a PAID score above 40, which indicates a diabetic distress. 8% had a PAID score less than 10. And it was between 10 and 40 in 74% of the patients.

Conclusion: A high prevalence of diabetes distress had been observed in our population of patients. Non-access to care, limited resources, and social problems explain this result. This kind of studies allows a better understanding and support of those patients and should lead toward an improvement of transitional care in diabetes.

***Index Terms*—Diabetes Distress, Quality of Life, Type 1 Diabetes, Transition.**

I. INTRODUCTION

Type 1 diabetes (T1D) represents 5.3% of all types of diabetes. It affects children and young adults. World Health Organization announced a worldwide prevalence of T1D of 18.1 million in 2000 and 23.7 million in 2010 [1]. Its incidence is increasing and is about 3 to 5% per year. The EURODIAB announces that in 2020 [2], the number of diabetics under the age of 5will double.

By occurring in children and adolescent, T1D is taking place in a growing body who is expressing special physical, emotional, social and intellectual needs. Initiation of insulin therapy associated with a rigorous diet can put these fragile patients into higher level of physical and emotional stress. The age of transition is a crucial phase where the child whose diabetes was diagnosed in pediatrics has to face the necessity to be followed "in adult's area". The pediatric withdrawal of the child, the parents, and even the health care providers needs to be surrounded by the most appropriate conditions for a seamless transfer. Glycemic control is difficult to achieve in adolescents especially if associated with depressive symptoms. The evaluation of feelings experienced by type1 diabetics during this period is important to better understand their needs in order to better support them.

The main objective of our study is to assess diabetes distress in type 1 diabetics using the scale "problem area in diabetes" in its Arabic transcultural adaptation. This study has introduced the establishment of a transition project in diabetology at the university hospital of Marrakech to respond to that local need in a dynamic improvement of professional practices.

II. MATERIALS AND METHODS

The study was conducted in type 1 diabetic patients in transition followed in pediatric consultation or who have been hospitalized in Diabetology adult department of the University Hospital of Marrakech. A sample of 50 patients was assessed. We excluded patients with known degenerative complications of diabetes.

For each patient, anthropometric information was collected: age, sex, age diabetes, level of education and socio-professional data. As well as history of diabetes: Type insulin regimen, quality of self glucose monitoring. Self-administration of the classical arabic adaptation of the questionnaire "problem area in diabetes" was conducted in all patients (Appendix 1). Statistical analysis was conducted using SPSS version 17.0 software.

III. RESULTS

A. Socio-demographic items (Fig 1,2,3,4,5):

More than the half (54%) of the patients assessed were female. The mean age was 17.54 years, with a median age of 17.00 years and extremes of 11 and 22 years. 32% of patients were aged under than 15 years. 16% were residing in rural area. 54% of them were in primary school, 24% were in high school and 12% were in university. The majority of the patients were students (70%), 12% had full time job, 8% had part time job.

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B. Diabetes history (Fig 5,6,7,8)

48,6% of patients had diabetes for less than 5 years and 19,4% had diabetes for longer than 10 years. The last glycated hemoglobin was above 7 in 82%. All patients had multiple daily insulin injections. 64% had four daily insulin injections and 26% had three daily insulin injections and only 1% had 5 insulin injections.

C. Quality of diabetes self management and PAID scores (Fig9)

IV. DISCUSSION

In the eastern region of the Mediterranean and the Middle East, the incidence of type 1 diabetes is around 1/100000 according to the latest Atlas of the IDF [3]. A retrospective study in the Marrakech region during autumn 2012 estimated an incidence of 1.5 / 100 000 [4], with an increased incidence in winters as is the tendency worldwide. Many obstacles, such as illiteracy and limited resources make the management of type 1 diabetes in Morocco difficult.

In Morocco, we are fully into the epidemiological transition. On the other hand, we are highly concerned by diabetes in the young given the fact that one fifth of the Moroccan population is under the age of 24 years. Difficult access to health care makes tedious diabetes management in type 1 diabetic patients. The frequency of poor glycemic control directly reflects that. Indeed, one diabetic of two has already made at least one episode of diabetic ketoacidosis [5-6]. This is deeply influences patients feeling, self-esteem and their lifelong performances.

The transition period is a critical age. In addition to the biological and psychosocial changes, the diabetic child has to face additional challenges. It is a time when conflicts are increased because of a need to parents' opposition. Feelings of ambivalence (wants to separate and seek help at the same time) are very common [7]. This is a time when glycemic control is hardly achievable because of lack of compliance, the willing to feel normal, the difficulty of integrating the concept of long term complications, and the need to get off from the tutelage of parents ... and doctors.

Adolescents are at risk to forget their insulin injection, and observe the self-glucose monitoring. It may well be that a larger number can forget his injections although the questionnaire was anonymous. The high number of patients not making glucose monitoring could be also explained by the unavailability of the reader and blood glucose test strips.

The recommendations of the ISPAD (2006) indicate that adolescents should be encouraged to take responsibility for diabetes management tasks, but with the continued involvement and support of parents, and this in a mutual agreement. The transition to adult diabetes care should be discussed, negotiated and carefully planned between teenagers, their parents and the medical team long before the actual transition to adult care.

Diabetes-related distress represents all the stress, anxiety, fears and feelings of threat related to diabetes. The more diabetes distress the more difficult it is to be treated. Diabetes-related distress is common among diabetics type1 and would be at around 7.9% according to Fisher et all [8]. The risk factors associated with diabetes-related depression are: HbA1c rate, age, duration of diabetes, level of education below high school. Indeed, depression affects diabetes by increasing poor glycemic control, poor adherence to treatment, and by a factor of three the risk of complications in the long term. On the other hand, diabetes increases the risk of major depression and the risk of relapse.

Several tools are validated to assess the feelings of carrier patients with chronic diseases. The "Problem area in diabetes" questionnaire is a validated tool in diabetic and recently translated into Arabic. This is a self-administered questionnaire (classic Version: Joslin 1999) which contains 20 items: expressed negative emotions to rate on a scale of 4. A new 5-item short version has been validated [9].

In addition to all the above-described factors, the patients included in our series have an additional obstacle is the lack of resources. We found that 20% of patients feel stressed, overwhelmed and overworked in the management of their diabetes. A PAID score was higher in the age group between 15 and 22 years and in patients with diabetes lasted for over 10 years. All these patients had HbA1c beyond the objectives and all were students.

V. CONCLUSION

The age of transition is a crucial moment in the life of a young diabetic. Precariousness in our context is added to other factors explaining the high number of impaired felt in our youth with diabetes type1. The evaluation of the quality of life and the feeling is an indirect assessment practice in the field of diabetology.

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No conflict of interest to declare

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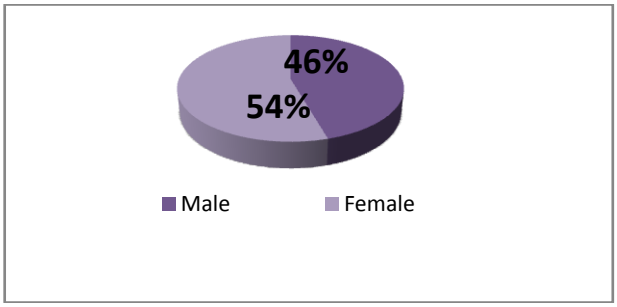

Fig1: Gender Repartition

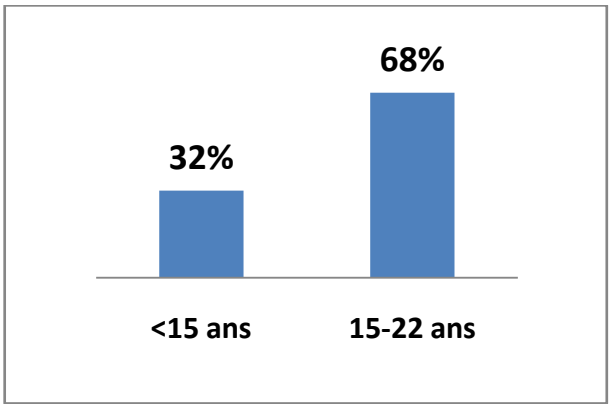

Fig2: Repartition Of Age

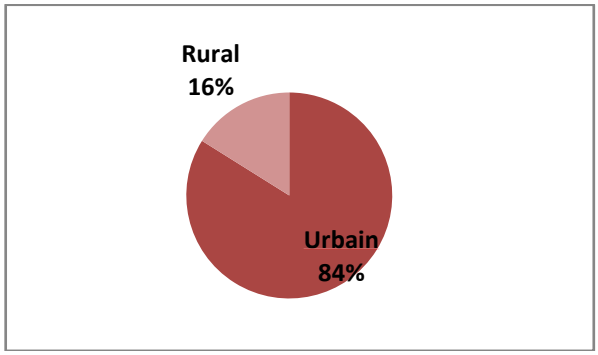

Fig3: Geographic Origin

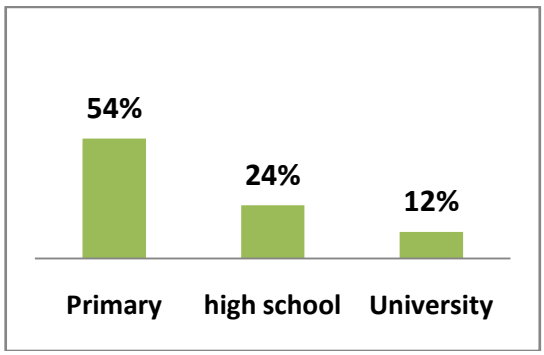

Fig4: Geographic Origin

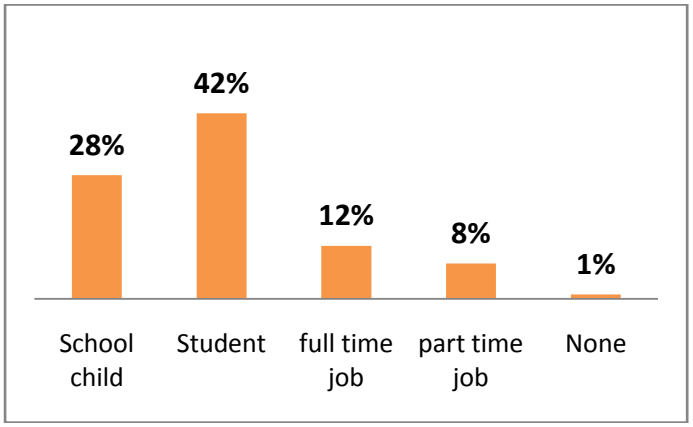

Fig5: Occupation

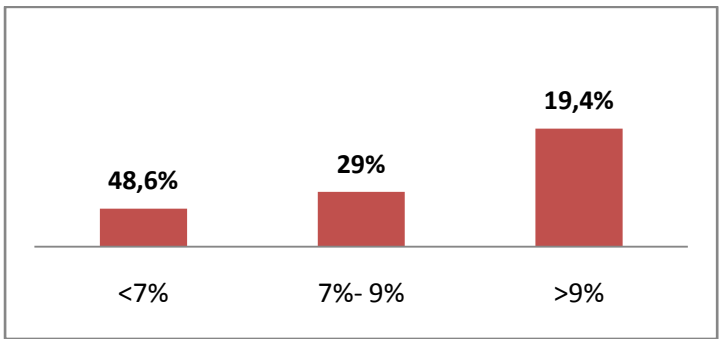

Fig 6: Age Of Diabetes

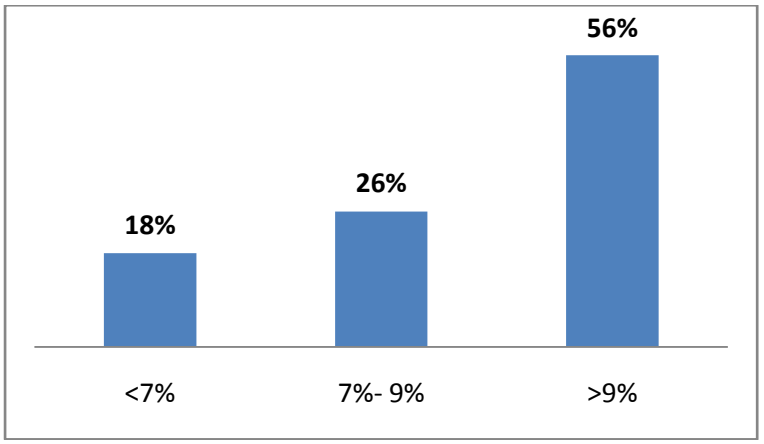

Fig7: Répartition Of The Last A1c.

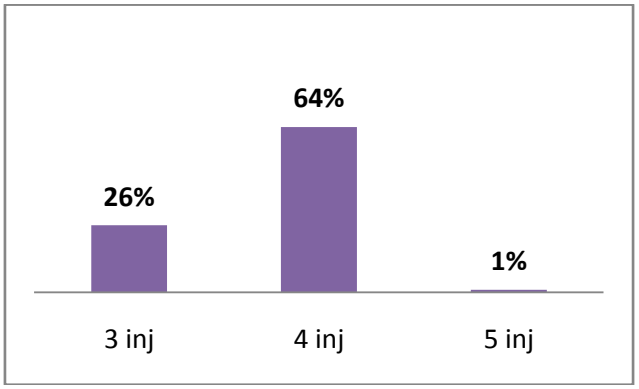

Fig 8: Number Of Insulin Injection /Day

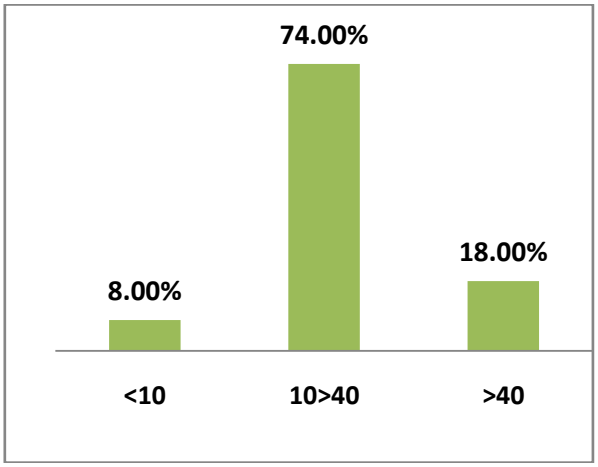

Fig9: Score PAID

	PAID Score<10	PAID score 10-40	PAID score >40	p-value
Gender Male Female	 0 (0%) 3 (100%)	 16 (43%) 21 (57%)	 ***6 (60%)*** *4 (40%)*	 *0,273*
Age <15y 15-22y	 1 (33,3%) 2 (66,6%)	 14 (37,8%) 23 (62,2%)	 *0 (0%)* ***10 (100%)***	 *0,047*
Duration of diabete <5y 5-10y >10y	 0(0%) 0 (0%) 3 (100%)	 3 (8,1%) ***20 (54%)*** 14 (37,9%)	 *0 (0%)* *3 (30%)* ***7 (70%)***	 *0,146*
HbA1c <7 7-9 >9	 0 (0%) 0 (0%) 3 (100%)	 2 (5,4%) 10 (27,0%) 25 (67,6%)	 *0 (0%)* ***7 (70%)*** *3(30%)*	 *0,085*
Origine Urbain Rural	 3 (100%) 0 (0%)	 30 (81%%) 7(1%)	 ***10 (100%)*** *0 (0%)*	 *0,439*
Profession School child Student Full time job Part time job None	 0 (0%) 3 (50%) 0 (0%) 0 (0%) 0 (0%)	 15 (40,1%) 17 (45,9%) 3 (8,1%) 0 (0%) 2 (5,4 %)	 *4(40%)* *5(50%)* *0(0%)* *0 (0%)* *1 (10%)*	 *0,694*

Fig10: Paid Score Distribution