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## RESEARCH ARTICLE

### ANXIETY AND DEPRESSION IN MALAGASY DIABETIC PATIENTS: EPIDEMIOCLINICAL PROFILE

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#### ABSTRACT

Diabetes and anxiodepressive syndrom are both two mJOR problem of public health who have influence for each other. Depression and anxiety are the first psychiatric problems of diabetics' patients that are often misdiagnosed and non-treated. The aims of this study are to evaluate the prevalence of anxiety and depression and to extract the associated risk factors, in order to improve the intake of the diabetic patients. A cross-sectional, descriptive study was conducted within the endocrinology service in the University Hospital of Josph Raseta Befelatanana. Fifty diabetic patients were reported in the study, and the average age was about 27,35 years old with a female gender predominance. Depression was about 37% of the cases, and anxiety about 40%. Height percent of the study population has already made a suicide attempt in their medical history. The economic level, the comorbidity with arterial hypertension and alcool addiction were both factors that can influence in the incidence of depression and anxiety. So, the treatment of a diabetic patient should be subject to a multidisciplinary medical care.

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## INTRODUCTION

Diabetes, well-known by chronic hyperglycaemia due to lack of insulin or insulin resistance state, is one major public health problem. In fact, WHO published in 2016 that 442 million persons over the world suffer from diabetes (WHO, 2016). Depression is pathological grief which induce excessive, intensive and so longer moral pain (Quentin *et al.*, 2010). Anxiousness constitutes sad feeling and continuous warning, followed by neurovegetative symptoms. Diabetes and anxiousness-depressed mood had influences each other and often associated. One diabetic patient has twice risk factors to be depressed with self-suicide factor and make patient give up their cure. Stress hormone increase risk of glycaemia destabilization in diabetics (Gracia *et al.*, 2012).

Thus, we fixed as aim to evaluate anxiousness and depressant state prevalence, to determinate their risk factors to improve the diabetic therapy.

## MATERIALS AND METHODS

Was carried off an cross-sectional and descriptive study in Endocrinology Unit Care of Befelatanana Hospital throughout three months on September until November 2016. Our people-study was constituted by diabetics' patients hospitalized on Endocrinology. Was included consent diabetics patients and excluded patient in coma and non-consent. Was been checked socio-demographic profiles, toxical behaviours, self-psychiatric, medical and surgery histories, familial histories and depression and anxiousness state frequency. Was done medical report within hospital anxiety and depression scale (HAD). Data was analysed through Epi info 7 and p rate below 0,05 was considered as significant.

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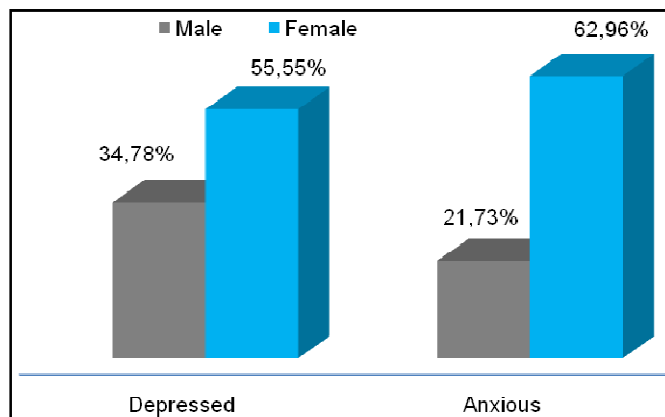
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**RESULTS**

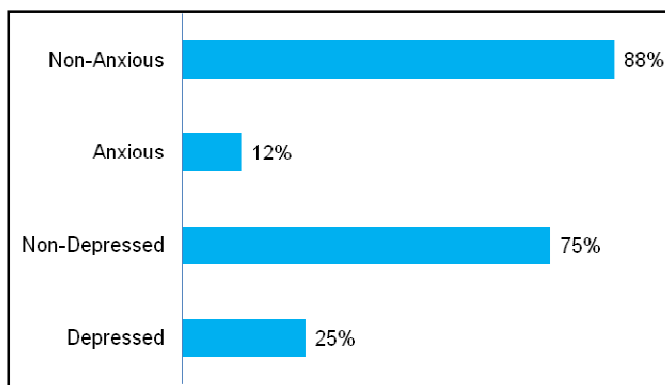
Were found 50 diabetics patients included, among which, 23 are men (46%) and 27 women (54%). Sex ratio was 0,85. Patient between 50 to 59 years-old were the most predominant in 46% (Figure 1). Depression touched n=19 patients (37%) with p=0, 89 (Figure 2). The anxiety touched almost feminine genders in 62, 96% with significant association p=0.0055 (figure 3). Depression and anxiety concerned primary sector works with 47% and 65% each other respectively. Thirty seven percent of patients are alcohol-addicted with non-significant association with anxiousness-depression mood p=0,05. 25% of patients smokes with significant association with depression mood p<0,05 (figure 4). Eight percent of our patients had attempted suicide. Anxiousness state was found on 22% on diabetics' ascendant genealogy and the mood depressant one on 16% of cases. For those who haven't any diabetic family history (n=13), depression was found on 16% and anxiety on 10%. Diabetes type 2 were the almost observed on 92% of cases against 8% for the type one. Anxiety concerned 8% of type 1 diabetics. Both anxiety and depression states were found with same frequency (32%) on type 2 diabetes (p= 0,01) (Table 1).

**Table 1. Relation between anxio-depressant troubles and diabetic type and its treatment**

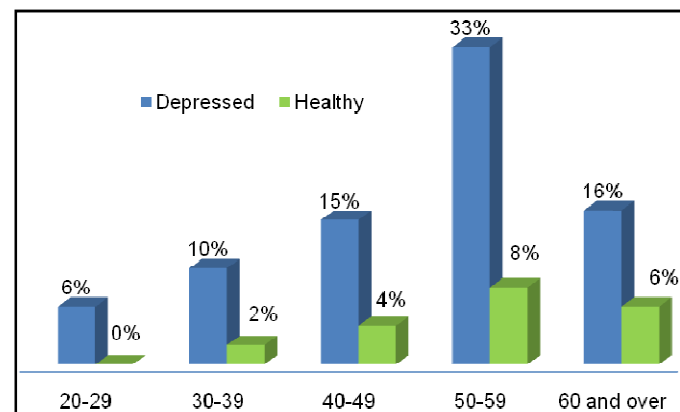
Diabetes type	Occurrences	Depression mood	Anxiety
Type 1	4 (8%)	3 (6%)	4 (8%) p = 0,01
Type 2	46 (92%)	16 (32%)	16 (32%)
<b>Treatment</b>			
Insuline only	11 (22%)	5 (10%)	6 (12%)
ADO	13 (26%)	2 (4%)	4 (8%)
Insuline and ADO	26 (52%)	12 (24%)	10 (20%)



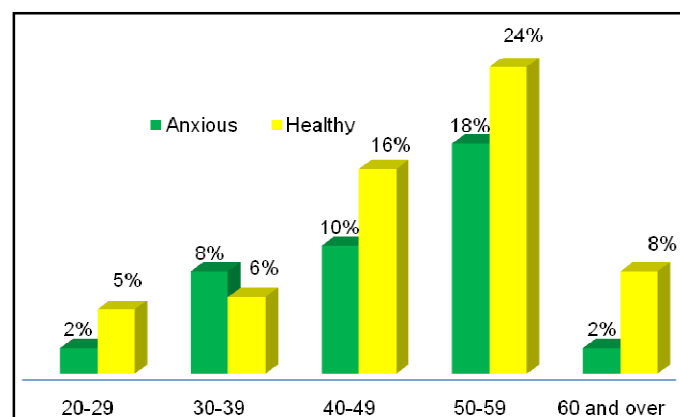
**Figure 3. Frequency of diabetic patients with depression and anxiety according to their gender**



**Figure 4. Relation between anxio-depressant state and cigarette addiction**



**Figure 1. Frequency of diabetic patients according to depression mood and their age hood**



**Figure 2. Frequency of diabetic patients according to their anxious state and their age hood**

**DISCUSSION**

Our study found women gender predominance (with sex ratio 0,85) between 50 to 59 years old, on whom, was observed any real significant association (p>0,05) between diabetes statement in one side and anxiousness-depression mood in the other side. Depression was diagnosed on 37% of diabetics' patients and anxiety on 40% of them. Our study differs from those on Guinea, which found 12% cases of depressant mood and 33,5% cases of anxiety on diabetic patients (Camara et al., 2011). It may be explained by our slow sampling level. Otherwise, diabetes and depression were ahighly-associated illness (Gracia et al., 2012). Other research in Canada (Barnard et al., 2006; Grigsby et al., 2004) published 40% cases of anxious troubles on those concerned patients. Prevalence level relies upon on every country then. Women predominance were found within our research: 55% cases of depressives and 63% cases of anxious. Another study in our Island, in Mahajanga, found the same result (Andriantseheno, 2009). In fact, female gender is one major risk of depression on diabetics, which confirms again our results (Katon et al., 2009). Almost diabetics suffering from anxio-depressive disorders in our research were in the age group of 50 to 59 years; Which is in line with literature's data, where comorbidity between anxio-depressive disorders and diabetes increases with age from 21 to 69 years old and decreases gradually until the age of 76 years and over (Andriantseheno, 2009). Then, majority of diabetics found by our study were in the primary sector (56%), and depression affects 47% of them and anxiety 65%. This would be explained by the daily stress, the limited access of care, the low socio-economic level. However, no significant correlation (p>0, 05) was found. 70% of our patients were

alcoholics and 52% smokers. The literature shows the same publication (Werhya and M'Uzan, 1963), where chronic alcoholism emphasizes depression and anxiety in diabetics and the association: cigarettes, diabetes, high blood pressure would highlight depression and anxiety occurrences. A statistical significant correlation was found ( $p < 0.05$ ) between medical-surgical histories and anxio-depressant disorders according to our study. It enhances the importance of a good education to control the balance of diabetes, which would decrease its complications and its psychological impact (Villeneuve *et al.*, 1980). Four of our patients had already made a suicide attempt. Thus, it was observed that patients suffering from chronic illness (diabetes) have a high suicidal risk which needs necessary psychological care. Thereafter, we had seen that there was no significant correlation with depression whether diabetes is type 1 or 2. However, type 1 diabetes is a factor influencing the onset of anxiety ( $p = 0.001$ ). The risk of developing depression is 3 times higher in type 1 diabetic patients and around 2 times higher in type 2 diabetics than in non-diabetic patients. According to one research (Camara *et al.*, 2011; Roy and Lloyd, 2012), type 1 diabetes was significantly associated with anxiety. This further confirms our results. For the treatment, our patient who received only oral antidiabetic were less depressed than those treated by insulin or combine drugs, as well as showed on literature (14), that insulin therapy is a factor of highest depression's rate, regardless of diabetes' type. According to some authors (Katon *et al.*, 2009; Eaton *et al.*, 2008), in diabetics, risk factors for depression include women gender, teenager or early adulthood and end-of-life, poverty, lack of social supports, stressful life events, failure of the glycaemic balance control, repeated hypoglycaemia, long-standing diabetes, and several complications (Katon *et al.*, 2009; Eaton *et al.*, 2008). In another study (Lustman and Clouse, 2005), such as shown by ours, depression decreases diabetes prognosis, because of disturbances on the management of glycaemic control, that entails high risk of neuropathies, nephropathies, retinopathies and macro-vascular complications especially the coronary heart thrombosis.

### Conclusion

High frequency of anxiety and depressive disorders needs really to include mental health management as an integral therapy of diabetics.

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