

## Comorbidity of Depression and Anxiety: Association with Poor Quality of Life in Type 1 and 2 Diabetic Patients

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**Abstract:** *Background:* Diabetes is associated with depression and impairment in Quality of Life (QoL). *Objective:* The objective is to define the frequencies of depressive and anxiety symptoms in a sample of patients diagnosed with type 1 and 2 diabetes, the amount of impairment of QoL and the weight of depression and anxiety in determining the QoL in such of patients. *Methods:* A total of 210 patients were divided into two groups (type 1 and type 2). Patients completed the HADS and WHOQoL-bref. *Results:* Groups showed a high prevalence of anxiety (type 1 = 60%, type 2 = 43.8%) and depression (type 1 = 52.4%, type 2 = 38.1%), both measures were significantly higher ( $p < 0.05$ ) in diabetes type 1 patients. Type 1 patients also showed a QoL in the overall assessment and the physical, psychological and social relations domains. In both Type 1 and 2 diabetes poor QoL was found associated by anxiety and depression comorbidity. *Conclusion:* In overall diabetes patients depression and anxiety seems to be a determinant of poor QoL.

**Keywords:** Anxiety, depression, quality of life, type 1 and type 2 diabetes.

### INTRODUCTION

Some studies have linked anxiety and depression in diabetes mellitus [1]. Moreover, controlled studies suggest that treatment of depression may improve glycemic control [1-3]. Thus, it is important to estimate the depression and anxiety prevalence to manage the potential impact of these disorders in type 1 and 2 diabetes patients. However, despite the literature on this subject has expanded considerably, the findings are unclear about the relationship among depression and anxiety with diabetes. Some recent studies have also established that diabetes can worsen the quality of life (QoL) of affected patients [4]. Until now, very few data are known about the role that comorbid anxiety or depressive disorders may have in determining a low QoL in patients with diabetes [3].

Hyperglycemia, common observed in diabetes mellitus, causes great emotional and physiological interference in patients [1, 2], and then, a direct relationship can be observed between mood/anxiety and glycemic control [3]. In addition, the inappropriate treatment of diabetes favors the occurrence of physiological, emotional and social problems [2].

Therefore, the prevalence of anxiety and depression in diabetic patients is relevant to our public health authorities; due to the great search for additional treatments and consequently an impairment in QoL was supposed [1-4].

Up to 76% of diabetic patients show reduction in the use of insulin when combine psychotherapy for depression and appropriate diet<sup>5</sup>. In addition, 9-16% of diabetic patients hospitalized present depression, and 33% reported chronic pain [5].

It is well-known that as much depression as anxiety may modify the clinical course of *diabetes mellitus*, worsening the prognosis and thus it can impairing the QoL [6]. On the other hand, when depression is treated an improvement in diabetes is observed [7]. Anxiety, in turn, is an important factor for reduction of course of illness, more than age or time of illness [8, 9].

It is well-known that subjective perception of the quality of life is of great relevance for the measures of outcome in chronic diseases [10], particularly in patients with multiple sclerosis and frequent co-morbidity with mood disorders and depression. These conditions heavily impact the daily life of the affected patients and their families [11, 12].

The objective of this study is to measure the prevalence of depressive and anxiety symptoms in a sample of patients with diabetes of type 1 and 2, to define the amount of im-

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