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COMPLEX MEDICAL-PSYCHIATRIC ISSUES (MB RIBA, SECTION EDITOR)

The Comorbidity between Depression and Diabetes

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Abstract Comorbidity of depression and diabetes is common, and each disorder has a negative impact on the outcome of the other. The direction of causality is not certain as each disorder seems to act as both a risk factor and consequence for the other in longitudinal studies. This bidirectional association is possibly mediated by shared environmental and genetic risk factors. Comorbid depression is associated with reduced adherence to medication and self-care management, poor glycaemic control, increased health care utilization, increased costs and elevated risk of complications, as well as mortality in patients with diabetes. Psychological and pharmacological interventions are shown to be effective in improving depression symptoms; however, collaborative care programs that simultaneously manage both disorders seem to be most effective in improving diabetes-related outcomes.

Keywords Depression · Diabetes · Comorbidity · Epidemiology · Bidirectional associations · Risk factors · Disability · Diabetes outcomes · Incident diabetes · Incident depression · Antidepressant medications · Metabolic syndrome · Insulin resistance · Brain dysfunctions · Glycaemic control · Diabetes complications · Diabetes related costs · Psychological interventions · Collaborative care · Incidence · Longitudinal studies · Psychiatry

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Introduction

The occurrence of co-morbid mental and physical disorders is gaining prominence in recent times. Recent studies show that up to half of people with a chronic physical condition also have a mental disorder [1, 2]. Amongst the most commonly occurring comorbities is that of depression and diabetes. The prevalence of both diabetes and depression is high and reportedly increasing rapidly. Worldwide, in 2012 an estimated 371 million people were living with diabetes (prevalence of about 8.3 %) [3], this is up from 285 million in the 2010 estimates. The World Health Organization estimates that currently more than 350 million people globally suffer from depression [4].

Many studies have demonstrated an increased prevalence of depressive symptoms and major depressive disorder in people with diabetes [5]. A recent meta-analysis by Nouwen et al. showed that people with type 2 diabetes have a 24 % increased risk of developing depression compared with non-diabetic controls [6]. Recent longitudinal studies support a bidirectional relationship between depression and diabetes, with one disorder predicting the onset of the other [7••, 8]. However, the mechanisms underlying the association between diabetes and depression are as yet poorly understood.

Depression and diabetes are individually very disabling disorders; they are currently ranked the 11th and 14th leading causes of disability adjusted life years in the global burden of disease study, respectively [9]. Depression and diabetes are both associated with negative social, physical and health-related outcomes. When these two disorders occur together they seem to act synergistically to increase the odds for functional disability and mortality [10, 11]. For example, drawing from the results obtained from 16 countries participating in the World Mental Health Surveys, Scott reported a synergy index of 2.2 (95 % CI 1.6 – 2.9; $p<0.05$) for disability rated using the WHO Disability Assessment Schedule for comorbid diabetes in depression [12]. The co-