## Depression in type 2 diabetes patients: Cognitive behavioral therapy.

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#### Introduction

Type 2 Diabetes Mellitus (T2DM) is linked to depressed symptoms, and concomitant depression has been linked to poor clinical outcomes in people with T2DM. In T2DM, recognizing and treating psychological symptoms remains a major clinical problem. Physical activity levels, self-management effectiveness, distress associated with a new T2DM diagnosis, and frailty associated with advanced diabetes duration could all be mediators of the reciprocal link between T2DM and depression. The latter factors help to create a "J-shaped" path from the moment of diagnosis [1].

Poor outcomes may be associated with major depressive episodes, isolated, or subsyndromal depressive symptoms, depressive-like symptoms more specific to T2DM (eg, diabetes-related distress), apathy, or fatigue; however, screening for clinical risks associated with psychological symptoms in T2DM remains difficult. We examine current thoughts on depression in the setting of T2DM in this review, as well as the implications for screening and therapy of these highly comorbid conditions.

Depression is about twice as common in people with Type 2 Diabetes Mellitus (T2DM) than in the general population. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, the cardinal symptoms of a major depressive episode include sorrow and/or anhedonia, with additional symptoms of decreased energy, changes in thinking, appetite changes, interrupted sleep, or suicidality. In persons with T2DM, these symptoms may appear concurrently or separately. Depression or depressive symptoms have been linked to negative clinical characteristics in people with T2DM, including poorer glycemic control, food behaviours, and exercise adherence. Despite its relevance, recognizing and treating psychological symptoms in people with T2DM can be difficult [2].

Depression is twice as common in diabetic patients as it is in the general population, according to previous studies. This high frequency could indicate that T2D patients have unmet psychological needs. As a result, a group of researchers from Spain and Greece searched publishing databases for trials of CBT in the T2D environment to see if it could be an effective treatment for anxiety and depression in T2D patients. A total randomized clinical trials comprising between 40 and 214 participants with T2D and co-occurring depression or diabetes-related distress were reviewed.

The majority of research revealed that CBT had a significant impact on depressed symptoms. A study that combined a psych educational component with the CBT treatments revealed the longest-lasting effects. The effects of the intervention were seen to be sustained at a 12-month follow-up in this study. Other studies without a psych educational component in general observed significant reductions in depressed symptoms following the intervention; however, the effects faded by the 6-month or 12-month follow-up examinations [3].

# Three samples found no significant differences of the CBT intervention

In addition to reducing depressive symptoms, three studies found that the CBT intervention reduced anxiety, and one of these studies also revealed that the CBT intervention reduced angry expression. In one study, men experienced less anxiety and anger expression after receiving CBT with a psych educational component, while women experienced less anxiety and anger expression after receiving CBT with a psych educational component.

The studies that looked at glycemic control indicated that it improved, and these improvements were linked to adherence. The significant level of heterogeneity across the underlying research hampered this review, and two of the included articles were considered to be at high risk of bias.

Our findings further suggest that CBT-based therapies are beneficial for depressive symptoms and distress in individuals with T2DM, according to the study's authors. The current findings suggest that in order to improve clinical outcomes and psychological well-being in diabetic patients, technical components of CBT that include cognitive and behavioural components must be adopted, and that these patients may benefit from combining CBT-based interventions with other psych educational strategies [4].

There are still some unanswered questions about the etiology of the diabetes-depression reciprocal interactions. Depression is a risk factor for future diabetes, and diabetes is a risk factor for future depression, according to epidemiological research. Due to their influence on activity levels and other health behaviours, it has been argued that depressive symptoms operate as mediators of eventual metabolic disturbances.

Mendelian randomization studies have found that singlenucleotide polymorphisms known to predispose to T2DM are also predictors of an hedonic, interpersonal, somatic, and other depressive symptoms, implying that diabetes can

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cause depressive symptoms. Distress linked with a new T2DM diagnosis has been reported to trigger or intensify depressive symptoms, similar to other newly diagnosed chronic conditions. This viewpoint is supported by the fact that people with diabetes who are clinically diagnosed have more depressed symptoms than those who are undiagnosed. A diagnosis of diabetes, as well as diabetes treatment, has been linked to an elevated risk of depression [5].

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