

# Diabetes: A Link Beyond Psychosocial and Traditional Risk Factors

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## Abstract

Diabetes is a growing problem that poses a significant public health challenge around the world. According to the International Diabetes Federation (IDF) and the World Health Organization (WHO), diabetes currently affects more than 8% of the global population (415–420 million people), with prevalence expected to rise to 10.4% (642 million) by 2040. Diabetes affects an estimated 9.3 percent of the population (29.1 million people) in the United States. Type-2 diabetes is the most common type of diabetes worldwide, accounting for 90 percent of cases.

**Keywords:** Diabetes • Psychosocial • Traditional risk factors

## Introduction

Diabetes is the fourth or fifth leading cause of death in the majority of high-income countries, posing a significant burden on public health systems. Diabetes health spending accounted for 12% (USD 673 billion) of global health expenditure in 2015, and it may account for up to 20% of national health-care budgets in some countries. Furthermore, the indirect costs of diabetes, such as reduced labour force participation and lower economic productivity, are significant.

## Description

### Psychosocial factors and diabetes risk

**Emotional distress:** Depression is the most commonly studied factor in diabetes research. According to the findings of two meta-analyses of longitudinal studies, depression is associated with a 37–60% increased risk of developing diabetes. Prospective evidence also suggests that higher levels of depressive symptoms, as well as clinical depression, are associated with an increased risk of diabetes. After controlling for diabetes risk factors such as BMI, family history of diabetes, smoking, physical activity, diet, and alcohol consumption, the associations reported in these studies remained significant. One possibility is that diabetes and depression share common etiological factors such as physical inactivity or inflammation, which statistical adjustments may not completely eliminate. Preclinical diabetes, on the other hand, may increase the likelihood that an individual will report depression, resulting in a reverse causal process. Psychological distress is characterised by a number of comorbid psychological factors, including depressive and anxiety symptoms, general stress, and sleep disturbance. In a UK study of 9514 people, psychological distress at baseline was linked to incident diabetes after adjusting for age, gender, education, and income. However, after adjusting for health-related factors, the relationship was no longer significant.

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**Received:** 03 December, 2022, Manuscript No. jhmi-23-88764; **Editor assigned:** 05 December, 2022, PreQC No. P-88764; **Reviewed:** 16 December, 2022, QC No. Q-88764; **Revised:** 22 December, 2022, Manuscript No. R-88764; **Published:** 30 December, 2022, DOI: 10.37421/2157-7420.2022.13.452

**Exposure to life stress:** Chronic exposure to external stressors has also been linked to the onset of diabetes. Until now, the majority of research has focused on the link between work stress and incident diabetes. Job strain, defined as the combination of high job demands and limited job control, is a well-studied work stress construct. A large meta-analysis that looked at the relationship between job stress and diabetes development gathered data from 13 prospective European cohort studies. Over a 10.3-year average follow-up, job stress was associated with a 1.15-fold increased risk of incident diabetes. This association was found to be independent of a variety of covariates, and it extends previous pooled cross-sectional associations. A large number of studies on the link between long work hours and diabetes have also been conducted. It appears that that working 55 h or more a week also increases the risk of developing diabetes but only in low socioeconomic status (SES) groups.

**Early life adversity:** Early life adversity has not been widely investigated as a risk factor for future diabetes onset, though it appears to be a significant issue for health-related processes such as telomere length and inflammation in adult life.

**Personality characteristics:** Personality factors in relation to diabetes have received little attention. Hostility is typically defined as a negative cynical attitude toward others, with a proclivity for anger or aggression. This trait has been linked prospectively to elevated fasting glucose and cross-sectionally to insulin resistance, glycated haemoglobin (HbA1c), and diabetes prevalence [1–4].

The effects of mindfulness-based interventions on psychosocial stressors have also been evaluated in diabetics. Multiple studies have shown that they have psychological benefits, lowering symptoms of diabetes-related stress, anxiety, and depression in diabetics. However, there is conflicting evidence regarding these interventions' ability to control blood sugar levels. Four interventions lowered HbA1c levels in the seven studies that evaluated HbA1c as a glycemic control indicator, but the three largest studies found no change in HbA1c. The field of mindfulness-based diabetes intervention is relatively new, and the majority of the research is exploratory. It's possible that not enough studies had long follow-up periods to detect significant changes in HbA1c.

However, it has been demonstrated that pharmacological interventions can short-term improve glycemic outcomes, and hyperglycemia is linearly associated with an increased risk of cardiovascular disease. Additionally, mindfulness-based interventions and psychological and pharmaceutical treatments appear to have a positive impact on psychosocial factors in diabetics. Even though these treatments only have a limited effect on obvious CVD outcomes, there have been calls to make the mental health of diabetics a priority for its own sake. Since lifestyle interventions have been shown to prevent diabetes, the best approach might be to target people before they develop the disease rather than after it has been diagnosed [5–7].

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## Conclusion

A growing body of evidence suggests that psychological stressors contribute to the development of diabetes. In most cases, it has been demonstrated that a variety of negative psychosocial factors raise the risk of diabetes in populations that were initially healthy. Psychosocial factors and cardiovascular disease (CVD) risk in diabetics are understudied. There is evidence that a double diagnosis of depression and diabetes increases the risk of cardiovascular disease in this population, which accounts for the majority of current research in this field. Because the majority of studies are observational, it is challenging to draw causal inferences. The mechanisms by which psychosocial stressors raise the risk of developing diabetes and influence outcomes in people with diabetes are still poorly understood. There is a good chance that both biological and behavioral pathways are involved. Psychosocial factors have been shown to benefit from interventions for diabetics; however, there is insufficient research on interventions' effects on glycemic control and cardiovascular disease (CVD) outcomes. It is possible to make the case that enhancing the psychological well-being of diabetics ought to be a priority in and of itself, despite the fact that there is insufficient evidence to support effects on physiological outcomes.

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## Acknowledgement

None.

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## Conflict of Interest

The authors declare that there is no conflict of interest associated with this manuscript

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**How to cite this article:** Mani, Shiva. "Diabetes: A Link Beyond Psychosocial and Traditional Risk Factors." *J Health Med Informat* 13 (2022): 452.