

Are Physical Activity and Health Conditions Associated With Mental Health in Individuals With Prediabetes or Type 2 Diabetes? A Longitudinal Study

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Purpose: Individuals with type 2 diabetes face an elevated risk of comorbidity which is linked to poor mental health such as low quality of life and symptoms of depression and anxiety. Physical activity is related to a reduced risk of mental health symptoms in the general population. How physical activity along with various health conditions affect mental health in prediabetes or type 2 diabetes is less studied. This study examined the associations of physical activity, health conditions, gender, and age with mental health over time in individuals with prediabetes or type 2 diabetes.

Methods: Data of 59 participants was used. Mental health was assessed at baseline, two years, and after 5–9 years using the Hospital Anxiety and Depression Scale, the Perceived Stress Scale, and the EQ-5D Visual Analogue Scale measuring health-related quality of life. Physical activity, measured via accelerometers at baseline, was dichotomised as active (reaching WHO guidelines of ≥ 150 min/week of moderate-to-vigorous activity) or inactive. Health conditions at baseline included multimorbidity (having >2 comorbidities), duration of type 2 diabetes (>5 years), and BMI (≥ 30 kg/m²). Generalised estimating equations were applied for statistical analyses.

Findings: The participants, 57% male, had a mean (standard deviation) age of 64.6 years (7.8) and BMI 29.4 (3.8) at baseline. Being inactive and having multimorbidity were not statistically significantly associated with any examined mental health variable across time. However, duration of type 2 diabetes and being female were associated with symptoms of anxiety and perceived stress, and high BMI was associated with symptoms of depression and lower quality of life.

Conclusion: In this sample, duration of type 2 diabetes, high BMI, and female gender were risk factors for mental health symptoms over 5–9 years, while physical activity and multimorbidity were not. These findings underscore the complex interplay between physical activity, health conditions, demographics, and mental health among individuals with prediabetes or type 2 diabetes. The knowledge is valuable in clinical practice to identify risk groups for mental health symptoms, and to person-centre support for physical activity.

Support/Funding Source: This work was supported by the Sophiahemmet Foundation and The Swedish Diabetes Foundation.

