

ANXIETY AND DEPRESSION IN FEMALE PATIENTS WITH
TYPE 2 DIABETES RESPONDS

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ANXIETY AND DEPRESSION IN FEMALE PATIENTS WITH TYPE 2 DIABETES

Weaver and Madhu¹ conducted a study on the association between type 2 diabetes and anxiety or depression in female patients with special reference to the interval from diagnosis of diabetes. The authors observed that the prevalence of high anxiety symptoms differed in women according to the interval from diagnosis of type 2 diabetes to the interview, with about 40% prevalence at less than two years and 23% prevalence at two or more years. By contrast, there were no differences in the prevalence of depression in the two different intervals from diagnosis of type 2 diabetes to the interview, with a prevalence of about 18% in both groups. The authors also presented results of multivariable analysis; disability score was significantly associated with anxiety score and depression score regardless of the interval from diagnosis of diabetes. Therefore, I have some concerns on their study.

First, the number of significant independent variables for depression score was larger than that for the anxiety score. I suppose that this would be related to the value of the

adjusted square value of multiple parameter estimates. The authors also presented a positive parameter estimate for plasma glucose and a negative parameter estimate for plasma glycated hemoglobin for the depression score. I think that the opposite direction of these estimates needs to be explained. Zhang et al.² recently reported a cross-sectional study on the association between depression and diabetic control in Chinese patients with type 2 diabetes, and the duration of diabetes was positively associated with poor glycemic control. In addition, age was negatively associated with poor diabetic control, and gender was not related to poor diabetic control. Because there is a limitation in a cross-sectional study for speculating causal association, a follow-up study with a large enough number of samples should be conducted.

Second, time trend in the prevalence of mental distress in patients with type 2 diabetes differed between anxiety and depression. The prevalence of anxiety in the first several years decreased as the patients accepted their disease. By contrast, the prevalence of depression did not change. I suppose that there is some relationship between anxiety and depression. Are patients with high depression score included among patients with high anxiety score? I recommend that the authors present the characteristics of anxiety and depression in relation to type 2 diabetes and the interval from the diagnosis for men and for other races/ethnicities.

In conclusion, the complication of type 2 diabetes affects quality of life, and long-term monitoring of mental health in patients with type 2 diabetes should be conducted in combination with diabetic control. **AJPH**

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WEAVER RESPONDS

Kawada's letter requested clarification on several points in our recent article about depression and anxiety symptoms among type 2 diabetic women in India. We appreciate his close reading of the article and the opportunity it provided to revisit our data.

To address Kawada's question about the method used to construct the linear regressions, we manually regressed all predictors listed in Table 2 of our article (disability, children, glucose, HbA1c, and socioeconomic status) against each outcome (depression and anxiety symptoms). Doing so did not change the solutions presented in the original article, thus boosting our confidence in the original conclusions.

Kawada is correct that the literature predicts positive β coefficients for both glucose and HbA1c measures.^{1,2} The negative β coefficient for HbA1c that we reported could suggest that the rigorous control required to achieve lower HbA1c might actually contribute to depression, as some other studies have reported,³ but this result might also be an artifact of the small sample size or the point-of-care tool used to measure HbA1c in our study.

More generally, our results and Kawada's letter underscore the great need for longitudinal work exploring how mental health status changes over time among people with type 2 diabetes. Such longitudinal data are sparse,⁴ especially in low- and middle-income countries. In future studies, it will be especially compelling to examine the proportion of mental health symptoms

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that might be attributable to diabetes treatment itself, since limited evidence suggests that diabetes control regimens may exacerbate or even trigger mental health problems among diabetic individuals.³ Thus, we agree enthusiastically with Kawada's conclusion that mental health should be monitored long-term among people with diabetes. **AJPH**

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