Insomnia and type 2 diabetes mellitus: a risk assessment

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Dear Editor,

I read with interest a paper by Zhang et al., who conducted a cross-sectional study to determine the association between insomnia and type 2 diabetes mellitus (T2DM) prevalence [1]. Odds ratio (OR) (95% confidence interval [CI]) of insomnia for T2DM was 1.31 (1.03–1.66) by adjusting several variables including depression. I have two concerns about their study.

First, causal direction should be specified by prospective/interventional studies. Anothaisintawee et al. conducted a meta-analysis regarding to the association between sleep disturbance, traditional risk factors, and T2DM [2]. Pooled relative risks (RRs) (95% CIs) of sleeping ≤ 5 h, 6 h, and ≥ 9 h/day for T2DM were 1.48 (1.25–1.76), 1.18 (1.10–1.26), and 1.36 (1.12–1.65), respectively. In addition, pooled RRs (95% CIs) of poor sleep quality and obstructive sleep apnea for T2DM were 1.40 (1.21–1.63) and 2.02 (1.57–2.61), respectively. Furthermore, the pooled RRs (95% CIs) of being overweight, having a family history of diabetes, and being physically inactive for T2DM were 2.99 (2.42–3.72), 2.33 (1.79–2.79), and 1.20 (1.11–1.32), respectively. As a significant association between cumulative experience of insomnia and T2DM incidence disappeared by adjusting potential confounders [3], further studies should be conducted.

Second, depression is a risk factor for T2D [4], and patients with T2DM have a risk of depression [5]. As insomnia is a leading cause of depression, there needs an appropriate

adjustment of depression for the association between insomnia and T2DM.

Compliance with ethical standards

Conflict of interest The author declares that there are no conflicts of interest.

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