Independent and interactive association of sleep duration and screen time with anxiety of pregnant women during COVID-19 pandemic: a multi-central cross-sectional study

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Abstract

Objective: To determine the association of sleep duration and screen time with anxiety among pregnant women under COVID-19 pandemic scenario. Design: Cross-sectional study. Population: A total of 1794 pregnant women cover the whole pregnant period. Methods: We conducted one large-scale, multicenter cross-sectional study which recruited 1794 pregnant women across China. The demographic factor, lifestyle, and mental health of participants were submitted online in self-reported manner by the pregnant women during 6 February to 8 May, 2020. We further investigated the association of sleep duration and screen time with the risk of anxiety by multivariable logistic regression analysis and linear regression analysis after adjusting the potential confounders. Moreover, stratification analysis was subsequently conducted for controlling potential confounders. Main outcome measures: the dependent and interactive effect of sleep duration and screen time with anxiety among pregnant women. Results: Our data revealed that 35% of pregnant women suffered from anxiety during the COVID-19 pandemic. Sleep duration was dose-dependently associated with lower risk of anxiety among pregnant women (OR 0.418: 95%CI 0.276-0.630), while screen time exhibited conversed effect (OR 2.017: 95%CI 1.008-4.399). Notably, sleep duration(>7h/day) together with screen time(3-6h/day) diminished the risk of anxiety (OR 0.708: 95%CI 0.503-0.997). Conclusion: Taken together, sleep duration and screen time were independently and jointly associated with anxiety. Therefore, promoting more active lifestyle and maintaining higher sleep quality could protect mental health of pregnant women, especially under public health emergency. Funding: This work was funded by National Key R&D Program of China (2018YFC1004300, 2018YFC1004304).

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A

Association between sleep duration and anxiety using RCS with 3 knots

B

Association between screen time and anxiety using RCS with 4 knots