

Abstract

Sleep and activity disturbances are commonly found in depressed individuals. Both sleep disturbance and altered physical activity are clinical features to major depressive disorder (MDD). Other than a mere symptom, sleep disturbance is also a risk factor to MDD. The convenient and unobtrusive design of actigraphy has made it possible for 24-hour circadian rhythm monitoring. This meta-analysis aimed to investigate the relationship between depression and healthy controls over different circadian measures. Key databases were searched by the date of March 2020. The search yielded 55 studies and 16 rest-activity variables for the analysis. A total of 10,028 participants, including 6,018 depressed participants, and 4,010 healthy controls were evaluated. With the use of a random effects model, the most prominent rest-activity variables were identified, including greater number of awakenings (NOA), lower daytime activity, lower relative amplitude (RA), and lower total activity in depressed individuals. In conclusion, distinct rest-activity indicators to MDD were listed. The findings provide a foundation for further research in less explored variables.

Keyword: Major depressive disorder; subclinical depression; actigraphy; sleep; circadian rhythm; systematic review; meta-analysis.