Seasonal Variations in Bipolar Disorder Admissions and the Association with Climate: A Population-based Study

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Abstract

OBJECTIVE: Although seasonal influences on bipolar disorder admissions have long been observed, the issues of seasonality on different subtypes of mood episodes and the effects of associated climatic parameters remain controversial. This study sets out to examine seasonal variations in bipolar disorder admissions and the association with climate in Taiwan, a subtropical area with fairly constant weather conditions. METHODS: This retrospective population-based study uses the Taiwan National Health Insurance Research Database for 1999-2003, identifying 15,060 admissions for bipolar disorder, comprising of 8631 manic, 2078 depressive and 4351 mixed/unspecified episodes. The auto-regressive integrated moving average model was applied to examine the presence of seasonality and the association with climate in each subtype of mood episodes. RESULTS: Admission peaks were noted during spring/summer, early winter and early spring, for manic, depressive and mixed/unspecified episodes, respectively, while the associations with climatic parameters varied between the subtypes of mood episodes. CONCLUSIONS: Seasonality in bipolar disorder does exist for all subtypes of mood episodes. The distinct seasonal patterns and various associations with the climatic parameters imply different underlying mechanisms for the onset of each subtype of mood episodes. The association between admission rates and certain climatic variables found in this study is informative and could pave the way for future studies aimed at exploring the influence of climate on the psychopathology of bipolar patients as well as the underlying mechanisms.