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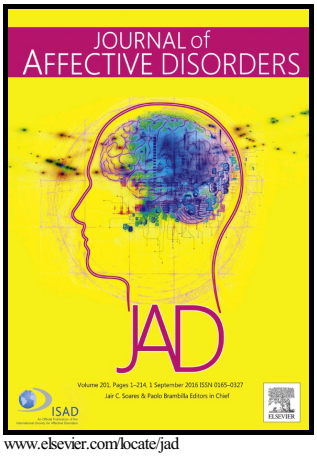

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Relationship between photoperiod and hospital admissions for mania in New South Wales, Australia

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Abstract:

Background:
Causes for a seasonal impact on admissions for mania remain to be clarified. We examined the impact of photoperiod, rate of change of photoperiod and hours of sunshine on admissions over an extended period.

Methods:
Monthly admission data to NSW psychiatric hospitals for more than twenty thousand patients admitted for mania over a fifteen-year period were correlated with photoperiod and sunshine changes.

Results:
While the peak in admissions occurred in spring, the shift in admissions being under-represented to being precipitously over-represented corresponded with the photoperiod commencing to increase in winter (i.e. July). Analyses identified rate of change in photoperiod as somewhat more influential than change in photoperiod and with hours of sunshine not making a distinctive contribution. Immediate and delayed impacts of rate of change as well as change in photoperiod across the whole year accounted for a distinctive 20% of the variance in hospital admissions.

Limitations:
Validity of mania diagnoses cannot be established from the data set, admission data were obtained from across the state while meteorological data were obtained from the capital city, lag periods between onset of a mania and hospitalization (while identified) would impact on associations, social factors were not included and study associations do not imply causality.

Conclusions:
The lack of a strong year-long correlation may reflect photoperiod changes being only a weak causal factor or that its influence may be through a strong impact phase after the winter solstice and with the spring peaking of admissions reflecting secondary photoperiod or other influences.

Keywords: mania, bipolar disorder, photoperiod