

# Should clinicians and the general population be concerned about seasonal affective disorder in Australia?

Seasonal affective disorder, a well documented syndrome in northern latitudes, has limited credence in Australia

**S**easonal affective disorder (SAD), also known as “winter depression”, refers to the recurrence of major depressive episodes (for a minimum of 2 consecutive years) during a particular season, typically winter.<sup>1</sup> While the construct is widely acknowledged,<sup>1-3</sup> the condition is not recognised as a stand-alone mental disorder by current classification systems. Rather, the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) includes “seasonal pattern” as a specifier for recurrent major depressive disorder,<sup>4</sup> and the International Classification of Diseases, 11th revision (ICD-11) has included “seasonal depressive disorder” under the category of “recurrent depressive disorder”.<sup>5</sup> As such, the validity of the construct as an individual mental disorder remains debatable,<sup>6,7</sup> with some suggesting the syndrome is a “temporary expression of a mood disorder rather than a specific disorder”.<sup>8</sup> However, the condition’s potential as a stand-alone disorder remains extant given both its continuous identification<sup>2,3,9,10</sup> and the ongoing inclusion of seasonal pattern specifiers in diagnostic classification systems.

Irrespective of nomenclature, seasonal variations of mood and behaviour have important clinical and management considerations, as reflected in guidance particularly from the northern hemisphere. For example, information on prevention, detection and treatment of SAD is available from the United States’ National Institute of Mental Health (NIMH), which also supports the need for research on SAD, including clinical trials to increase and reinforce the evidence base for SAD.<sup>11</sup> The NIMH states that SAD can be treated with the use of light therapy, psychotherapy, antidepressant medication, and vitamin D, either alone or in combination. In the United Kingdom, according to the National Institute for Health and Care Excellence, SAD should be treated in the same way as other types of depression.<sup>12</sup> In Scandinavian countries, light therapy is considered the first choice of treatment, which can be combined with pharmacological and psychological treatment.<sup>13</sup> In Finland, a non-governmental organisation dedicated to mental health has also been encouraging fitness training to address SAD in addition to these treatment methods.<sup>14</sup>

Whether seasonal variations in mood and behaviour are given necessary clinical consideration within the Australian context is open to debate. The Royal Australian and New Zealand College of Psychiatrists provides some guidance in the 2020 *Clinical practice guidelines for mood disorders*.<sup>15</sup> In the “Treatments” section, the College recommends bright light therapy as “first-line treatment for winter depression”.<sup>15</sup>

Information on SAD is also publicly available,<sup>16</sup> with some considering it a serious condition.<sup>17</sup> However, SAD is held to be rare or very rare.<sup>18,19</sup>

Internationally, the prevalence of SAD has been reported to be between 1% and 10% of the population and apparently related to latitude.<sup>2</sup> The finding about latitude is in agreement with the hypothesis that the onset of SAD depends on the amount of light radiation (duration and brightness), implying geographical location and day length are important considerations in SAD’s aetiology.<sup>20</sup> However, the “phase shift hypothesis” has become the most prominent hypothesis in SAD’s aetiology, with the presence of depressive symptoms in winter related to a delay in circadian rhythms relative to the sleep/wake cycle.<sup>21</sup> According to both these hypotheses, which have varying levels of support, SAD’s prevalence could vary between Hobart, Australia’s most southern capital at latitude of 42.88°S, with a minimum of 9:01 hours of daylight during winter, and for example Melbourne and Brisbane, with 9:32 and 10:24 hours of winter daylight respectively.<sup>22</sup> However, only limited research has been conducted on SAD in Australia, with the most recent study undertaken in Canberra in 2004.<sup>23</sup> The study examined levels of seasonality and reported that 5.3% of participants ( $n = 398$ ) met the criteria for SAD diagnosis. However, the authors acknowledged that the number of participants is likely to be overestimated given the use of the Seasonal Pattern Assessment Questionnaire (SPAQ). In a study conducted in a suburban district of Melbourne, a more rigorous study design was employed (ie, undertaken over a 2-year period, using the Beck Depression Inventory and the SPAQ), in which the true prevalence of winter SAD was estimated at 0.3%.<sup>24</sup> Meanwhile, in the only identified study that assessed the prevalence of the disorder in Hobart, Tasmania,<sup>25</sup> up to 9% of participants were reported to have experienced SAD at a clinical level and 24% at a subsyndromal level using the SPAQ. Further, the sample employed in the research comprised university psychology students<sup>25</sup> and, thus, it is unclear how generalisable the findings are to the wider population.

Given the limited research of variable robustness, we consider there is no strong basis to state whether seasonal variation of mood is rare in Australia or not. Further, as Tasmania, where the risk is expected to be highest across the Australian jurisdictions, is only a small state, we query whether the needs of Tasmanians may be overshadowed by voices from larger jurisdictions, with ensuing equity implications. In turn we contend that given its geography, Australia has the

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### Research priorities for seasonal affective disorder (SAD) in Australia

Establish the existence of SAD within Australia through a series of suspected cases

The study would include adults in Tasmania with suspected seasonal mood and/or behavioural changes, with Tasmania having an increased likelihood for winter SAD based on current hypotheses. Further, the study would seek to extend our understanding of causal hypotheses and the impacts of the condition. For each study participant, assessments would occur every season over 3 years and include:

- Baseline:
  - sociodemographic characteristics (including ancestry);
  - family history of mood disorders; and
  - personality traits
- Seasonal:
  - location;
  - typical and atypical symptoms of depression assessed during a clinical interview;
  - sleep patterns;
  - extent of daytime light exposure;
  - physical activity;
  - climatic conditions (eg, temperature, humidity, atmospheric pressure);
  - treatment employed (pharmacotherapy, psychotherapy, light therapy, vitamin D, none);
  - levels of absenteeism and presenteeism;
  - melatonin level; and
  - vitamin D level

Subject to findings from the study in Tasmania described above, establish the prevalence of seasonal mood and/or behavioural changes that meet diagnostic criteria for a major depressive episode through a representative, longitudinal study (minimum 2 consecutive years) of adults from across Australia — from Tasmania to Darwin — by local season

potential to inform the debate on SAD through the systematic analysis and comparison of the proposed theories for SAD's pathogenesis from samples sourced from across the country. In particular, can a prospective longitudinal study confirm the existence of SAD and contribute to the identification of criteria for diagnosis? Given the aforementioned concerns with the SPAQ,<sup>26</sup> the study would necessarily need to include a structured interview and/or additional instruments for the assessment of major depressive disorder (eg, the Beck Depression Inventory). The assessment of biopsychosocial factors that could be contributing to the syndrome should also be considered to address the likely multifactorial nature of the condition, as occurs for most mental disorders.

SAD may be a significant public health issue with limited recognition within Australia, but this cannot be confirmed or denied, given the insufficiencies of the available data, including robustness and geographic spread. Without data, providers and the public are in turn at the whim of thought leaders and/or popular beliefs, with people potentially not receiving the care they need. To address these concerns and ensure the needs of all Australians are at least being identified, high quality research into the extent of seasonal variations in mood and behaviour across Australia's jurisdictions, particularly in high risk locations, is required (Box). Study findings also have the potential to identify appropriate management practices and treatments and provide further novel insights.

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