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Refining an antidepressant-based indicator to improve the ascertainment of depression from Australian administrative data

Havard, Alys^{1*}, Lujic, Sanja¹, Tran, Duong¹, and Jorm, Louisa¹

¹Centre for Big Data Research in Health, UNSW Australia

Objectives

In the absence of whole-of-population data regarding depression in Australia, antidepressant supply identified through pharmaceutical data has been used by some as an indicator of depression. This approach has been criticised on the basis that up to 30% of antidepressants are prescribed for indications other than depression, including anxiety disorders, insomnia and pain. This study examines whether the identification of patients treated for depression can be improved by refining this antidepressant-based indicator via a series of pre-determined algorithms.

Approach

Pharmaceutical Benefits Scheme (PBS) and Medicare Benefits Scheme (MBS) records were linked to follow-up questionnaires completed between September 2012 and December 2014 by participants of the 45 and Up Study - a cohort study of residents of New South Wales, Australia, aged 45 years and older. After exclusions, 58,425 participants were included in the analyses. According to the basic antidepressant-based indicator, the supply of any antidepressant (Anatomical Therapeutic Chemical classification (ATC) code beginning with N06A) in the 30 days prior to the survey completion date was considered indicative of depression treatment in the last month. This algorithm was refined to: i) exclude tricyclic antidepressants (ATC code N06AA), which are commonly prescribed for insomnia and pain; and ii) re-categorise as "not treated for depression" those antidepressant recipients who were also supplied an anxiolytic or sedative (ATC codes beginning with N05B and N05C) in the 12 months prior to the survey. Self-reported receipt of treatment for depression in the last month, from the questionnaire data, was used as a gold standard.

*Corresponding Author:

Email Address: alys.havard@unsw.edu.au (A. Havard)

Results

Results: The basic antidepressant-based indicator returned a sensitivity (Sn) of 59.9%, a positive predictive value (PPV) of 43.4% and a specificity (Sp) of 94.7%. When refined algorithm i) was applied, the PPV and Sp increased to 51.8% and 96.5% respectively, while Sn decreased to 54.6%. Refined algorithms ii) yielded similar PPVs and SpS to algorithm i) while SnS were lower. Further refinements to the indicator will be explored using primary care (MBS) data. Although MBS data do not contain diagnoses, they do contain indicators of when certain mental health services were provided, allowing for algorithms in which the prescription of antidepressants for mental health reasons is distinguished from their prescription for physical health problems.

Conclusion

The algorithms developed in this study can be applied to identify depression in future research based on Australian administrative health data.

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