

Reviewer 1's General Concerns

Perhaps for lack of clarity in our initial draft, Reviewer 1 did not appear to understand our study's intent to analyze the trends and patterns in potentially inappropriate medication use among a population. Were this a study of the risk of adverse events, several of Reviewer 1's criticisms of our paper would have been well founded: for example, the concern that we should not have assessed socio-economic risks as we did using the administrative datasets or that we should have paid greater attention to co-prescribing.

We note that we did adjust for co-morbidity using a previously validated algorithm, specifically counts of Aggregate Diagnostic Groups from the John Hopkins Adjusted Clinical Group (ACG version 10.0) case-mix adjustment system. Counts of ADGs have been shown to predict health service utilization and perform relatively well compared to other commonly used co-morbidity indices (ex: Charlson co-morbidity index).

Further, co-prescribing of other medications may influence the risk of an adverse event but is not logically on the causal pathway to long-term exposure to sedatives, especially given that we have controlled for morbidity using diagnostic information. While our prescription drug databases do capture information on co-medications, we do not include adjustments for concurrent drug use in our analysis of risks of exposure to long-term sedative use because of the possibility of introducing endogeneity.

We have edited the text to make our approach to analyzing trends and patterns of exposure clearer. We hope the editors agree that the approach we have taken is well established in clinical health services research literature.

Reviewer 1 also felt that the study didn't seem to add much to the literature. We respectfully disagree, noting that this is arguably the largest and most complete analysis of trends in long-term sedative use among older and younger adult populations. Further, the analysis of socioeconomic determinants of long-term exposure is a significant contribution to research on disparities in risk of potentially inappropriate prescribing of these medications in Canada.

More specific recommendations by section Methods The Editor asked us to provide information about the validation of the datasets and their quality.

- As recommended, we have elaborated on this in the Methods section.

The Editor and Reviewer 3 mentioned that a clearer definition of our age classification would be useful.

- As suggested, we have improved the clarity of our age classification and our reference to these age groups throughout the manuscript. We now refer to those between age 18 and 65 as young and middle aged adults and those over age 65 as older adults.

- We also incorporated the citation provided by Reviewer 3.

Reviewer 3 expressed concerns that our rationale for exploring ethnic differences.

- Numerous studies have found that ethnicity is an important determinant of health services and pharmaceutical use, especially in mental health care and psychotropic drug use. We have therefore further clarified our rationale supporting this exploration.

Results

The Editor asked that the characteristics of included participants (e.g., with Table 1) should be presented first, then the trends in results.

- Given that the characteristics of the included participants applies only to the logistic regression analysis and not to the longitudinal results, we believe that moving Table 1 to the beginning of the results section may be misleading to readers.

Reviewer 3 asked whether any of the rate increases reported in the "Trends in sedative use among community-dwelling adults, 2004 to 2013" sub-section were statistically significant.

- Using simple linear regression, we find that all changes in age-standardized prevalence of overall use were statistically significant at $p < 0.05$. We also find that all changes in age-standardized prevalence of long-term benzodiazepine and z-drug use were statistically significant at $p < 0.05$. A more complex time-series analysis of this data is beyond the scope of this paper.

Interpretation

The Editor asked us to carefully watch inference versus association in our interpretation.

- We have adjusted our language accordingly."