Reviewer’s report

Title: Suicide or undetermined intent? - A register-based study of signs of misclassification

Version: 1 Date: 15 September 2013

Reviewer: Andrew Page

Reviewer’s report:

This paper compares cases of suicide and deaths of undetermined intent in Sweden for the period 1987-2011 in a series of cross-sectional and secular analyses to determine the extent to which misclassification of suicide may be attributable to particular individual socio-demographic or psychiatric factors.

Findings suggest similarities between cases of suicide and deaths of undetermined intent based on comparisons of a selection of routinely collected socio-demographic and psychiatric variables, and authors seem to conclude that the convention of combining suicides and undetermined deaths in descriptive-analytic studies of population suicide trends in Sweden is appropriate. However, this seems to be immediately contradicted (in the both the Abstract and concluding paragraph of the Discussion), by also recommending that separate analyses be conducted for the two broad cause of death classifications. There are substantial differences by ‘method’ when stratified by demographic factors, which might suggest that the latter conclusion is more appropriate. The authors need to clarify this apparent contradiction.

The definition of what ‘undetermined’ means should be provided in the ‘Material and methods section’, not only the ICD coding. To what extent have these classifications changed over time? A clear description of these key classifications will give the reader a more nuanced sense of what deaths are included in these categories.

Is Institutional Ethics Committee approval required to use individual identifiers to link multiple sources of routinely collected information in Sweden? Does this need to be noted in the Methods section?

What was the rationale for selecting the group of comparison (or exposure) variables? These appear to be selected without much a priori reasoning. There are a number of potentially important exposures that were excluded (for example, employment status). Also, to what extent is there differential misclassification of these exposure variables by jurisdiction (or by Register)? Have definitions or coding practices changed over the study period (1987-2011)? Could this be validated, e.g. sex, age, country of birth and marital status would be routinely collected in more than one Register? Much is made of the potential misclassification in the death data, but such misclassification presumably is also evident in the comparison data.
The first paragraph of the Discussion section is unclear and contradictory.

The Discussion section focusses on other similar comparative studies in other European contexts. However there is no methodological critique of the datasets that are used in the analysis in terms of the validity and accuracy of comparison (exposure) variables and cause of death determination, or much focus on the secular trend analyses in this regard. Nor is there an interpretation of the likely causes of observed socio-demographic differences between suicide and deaths of undetermined intent.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests