Reviewer's report

Title: Seasonal variations in suicides: exploring the reasons of suicide epidemics in Lithuania

Version: 1 Date: 31 October 2005

Reviewer: Helinä Hakko

Reviewer's report:

General

The main purpose of this register-based study is to explore the seasonal variations of suicides in Lithuania over the period of the years 1993-2002. The authors describe seasonal patterns of suicide by gender, age and method of suicide. This study seems to be a part of a project investigating the characteristics of suicides in Lithuania.

--------------------------------------------------------------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

- Since the study is a descriptive study and the register-based data is used to investigate the seasonal pattern of suicide according to subgroups of the data, a great part of conclusions are not supported by the data.
- Also, the title is misleading: the reasons for suicide epidemics are not explained by the findings of the study.
- The discussion about the association between violent suicides and depression is lacking, although a great part of violent suicides are committed by persons suffering from severe depression.

--------------------------------------------------------------------------------------------------

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Title of the paper:
- The title of the paper is highly misleading and it must be changed, e.g. “Seasonal pattern of suicides in Lithuania”. The data and the analyses do not give support that reasons for suicide epidemics are investigated in the paper.

Introduction:
- As the authors acknowledged the study question is not new, since a huge number of research papers from different countries have been published regarding the seasonal pattern of suicides. However, if this study is the first one using the suicide data from Lithuania and which have addressed the seasonal pattern of suicides by gender, method and age, the research question is justified.
- What about the study by Stoupel et al. “Clinical cosmobiology: the Lithuanian study 1990-1992. Int J Biometeorol 1995:38:204-208.”, in which the number of suicides in relation to month of the year was investigated? The authors have not referenced this study.

Methods:
- Information of suicides was derived from computerized database of Lithuanian Department of Statistics. The authors should shortly note already here (as they have discussed in the Discussion section) that the suicide mortality statistics are found to be reliable in the Baltic republics (Wasserman & Varnik 1998).
- The use of statistical methods is appropriate.

Results:
- Overall: Please, report in the text, figures and tables always the exact name the statistical significance test, since many types of statistical tests are used in analyses.
- Figure 1 describes the overall monthly pattern of suicides according to two different periods of the years. The authors should add the number of suicides for two time periods in Figure 1.
- Table 1 presents results for the statistical significance test for the seasonal pattern of suicides assessed by quarters of the years. Here again, the authors should add the number of suicides (for men, women, and seasons) in Table 1. The exact name of the statistical test should be given in the footnote of the table.
- Table 2 shows the monthly variations of suicides by two time periods and by gender. Please, change the place of Table 1 and 2. Since Figure 1 visualizes the monthly patterns, it would be more logical that after Figure 1 is a table, which describes the numbers and statistical tests for monthly seasonality. Please, add also to this table the exact number of suicides (for men, women, and months). Also, the exact name of statistical test used in analysis must be reported on the footnote.
- Figure 2 and 3 presents the monthly patterns of suicides by the suicide methods for two periods and for men and women, separately. It is a good thing that the numbers of suicide by each method is reported in Figure 2 and 3. In the page 6, in the last two chapters add the names and results for each significance tests. For example, a sentence “Hanging suicides showed a distinct and statistically significant seasonality with the peak in summer months”, but no test results are reported.
- First chapter in page 7, in which the results of analyses by age are reported, also lacks of test results for findings.

Discussion:
- The whole discussion section is highly speculative and the data do not support the conclusions made by the authors.
- First chapter presents a relevant discussion addressing the potential limitations of the study. Most commonly, however, the first chapter of the discussion summarizes the main findings of the study and the limitations and strengths of the study are reported at the end of the discussion.
- In page 9 in first chapter the authors noted that “This might be related to extraordinarily high proportion of hanging among Lithuanian women”. It would be important for readers if the authors discuss in detail why Lithuanian women use hanging so often as a suicide method.
- A major deficit in the discussion is that there are no discussion about an association between suicides and depression, since many violent suicides are committed by persons suffering from severe depression. The paper would also benefit if some discussion is given regarding the seasonal pattern of depression in Lithuania.
- In page 10, the authors stated that “Although there were no individual data on alcohol consumption available, alcohol seemed to be strongly linked to weekly variations in mortality suicides.” This sentence is not justified, since the weekly pattern of suicides was not investigated in this paper. If the authors want to discuss a link between alcohol consumption and suicides, they could have correlated the monthly pattern of suicide with the monthly pattern of alcohol consumption. By this way they could have got some scientific basis of their argument.

In sum: The research question is not new, but seasonal pattern of suicide by age, method and gender is not previously investigated by using data from Lithuania (Or is it, the authors should check it?). The methods are appropriate and well-described, although the statistical reporting is insufficient in some parts of the paper. The database for suicide is accurate enough for research question. The title of the paper is misleading and the discussion and the conclusions are not supported by the findings of the paper. All discussion should be based on the findings of the data. The paper can, however, be recommended to be published in BMC Public Health as a descriptive report for the seasonality of suicide in Lithuania after the corrections/modifications listed above have been performed.
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests.