Research note
Suicide and homicide in Siberia

David Lester and Sergei Kondrichin

Abstract

A study of the regional variation of suicide and homicide rates in the 1990s in Siberia showed that suicide rates were associated with clusters of variables measuring economic poverty and ethnic composition, while homicide rates were associated only with a cluster of variables measuring ethnic composition.

Introduction

Suicide and homicide rates have been reported regularly since the break-up of the Soviet Union. The rates from the World Health Organization are shown in Table 1, where it can be seen that both suicide and homicide rates rose in the late 1980s and early 1990s, peaking in 1994.

These mortality rates are not uniform across Russia, but vary from region to region. Studies have been conducted to examine the correlates of suicide and homicide rates in the former territories of the USSR, which are now independent. For example, Lester studied 15 nations, such as Armenia, Azerbaijan and Belarus, and found that suicide rates were associated with such social indicators as gross domestic product per capita, the death rate, the percentage of the population which was Muslim and educational attainment. The homicide rate had no statistically significant correlates.

Kondrichin and Lester studied correlates of the suicide and homicide rates in the oblasts and krais of Russia and found that suicide rates were associated positively with unemployment and illegitimate birth rates and negatively with marriage and population density. Murder rates were associated positively with...
birth and illegitimate birth rates, and negatively with migration and death rates and with population density.

The present study was designed to explore the correlates of suicide and homicide rates in the Siberian region of Russia.

Method

Suicide and homicide rates were available for all regions from official government publications only for 1997. Previous data were available only for the autonomous republics. The suicide and homicide rates (per 100,000 per year) in 1997 are shown in Table 2 for the 22 oblasts, krais and Republics.

Complete data for social indicators were not always available for 1997, and so a year close to 1997 was chosen. The social indicators used were:

- % of population which is Russian (1989 census data)
- infant mortality rate, 1995
- marriage rate, 1994
- divorce rate, 1994
- doctors per capita, 1993
- crime rate, 1994
- total mortality rate, 1994
- per capita income, 1994

Republic versus oblast/krai
Results

The social indicators were subjected to a factor analysis, using a principal components extraction and a varimax rotation. Three orthogonal (independent)
factors were identified (see Table 3). Factor I had the highest loadings from per capita income (and, in addition, marriage and divorce rates positively and the death rate negatively) and seems to tap economic wealth. Factor II had the highest loading from the percentage of Russians (and, in addition, infant mortality, doctors per capita and republic versus oblast) and seems to tap ethnic composition. Factor II had the highest loading from the crime rate and seems to tap crime.

Suicide rates were negatively associated with factor scores for Factors I and II – suicide rates were higher in the poorer regions and those with a smaller percentage of Russians. Homicide rates were negatively associated with factor scores for Factor II – homicide rates were higher in the regions with a smaller percentage of Russians.

Looking at the correlations of suicide and homicide rates with each social indicator, suicide rates were associated with per capita income, doctors per capita, republic versus oblast and the divorce rate. In a full multiple regression, the social indicators gave a multiple R of 0.75, accounting for 57 per cent of the variance.

Homicide rates were associated with the percentage of Russians, the marriage rate and the divorce rate. In a full multiple regression, the social indicators gave a multiple R of 0.90, accounting for 81 per cent of the variance.

Incidentally, there were no significant differences in the suicide or homicide

<table>
<thead>
<tr>
<th>Factor: Correlation with:</th>
<th>I</th>
<th>II</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per cent Russian</td>
<td>-0.15</td>
<td>0.87#</td>
<td>-0.11</td>
</tr>
<tr>
<td>Infant mortality</td>
<td>0.32</td>
<td>-0.69#</td>
<td>-0.01</td>
</tr>
<tr>
<td>Marriage rate</td>
<td>0.71#</td>
<td>-0.12</td>
<td>-0.47</td>
</tr>
<tr>
<td>Divorce rate</td>
<td>0.89#</td>
<td>0.27</td>
<td>-0.02</td>
</tr>
<tr>
<td>Doctors per capita</td>
<td>0.31</td>
<td>0.75#</td>
<td>0.28</td>
</tr>
<tr>
<td>Crime rate</td>
<td>-0.13</td>
<td>0.11</td>
<td>0.93#</td>
</tr>
<tr>
<td>Death rate</td>
<td>-0.83#</td>
<td>0.26</td>
<td>-0.08</td>
</tr>
<tr>
<td>Per capita income</td>
<td>0.92#</td>
<td>-0.10</td>
<td>-0.16</td>
</tr>
<tr>
<td>Republic/oblast</td>
<td>-0.02</td>
<td>0.87#</td>
<td>0.20</td>
</tr>
<tr>
<td>Per cent variance</td>
<td>37.4%</td>
<td>28.9%</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

Correlations with:

| Suicide rate  | -0.51* | -0.47* | 0.04  |
| Homicide rate | -0.36  | -0.49* | 0.42  |
rates between the three regions (West Siberia, East Siberia and Far East), see Table 2.

Discussion

The present study has shown that suicide and homicide rates are very high in the Republics and oblasts/krais of Siberia. The mean suicide rate of the 22 regions was 50.5 and the mean homicide rate 38.0 per 100,000 per year. In contrast, the suicide rate in the UK in 1997 was 7.0 and the homicide rate 0.7; in the USA in 1997, the suicide rate was 11.4 and the homicide rate 7.3.

The suicide and homicide rates of the regions of Siberia were associated with many social characteristics of the regions, and the social indicators used accounted for a large proportion of the variance of the suicide and homicide rates. Suicide rates were higher in the poorer regions and where there was a smaller percentage of ethnic Russians, while homicide rates were higher where there was a smaller percentage of ethnic Russians.

Suicide and homicide rates were positively associated (Pearson $r = 0.50$, $p = 0.02$), indicating that both forms of violent death are affected by similar social stressors. In contrast, research on the American states indicates only a weak association between suicide and homicide rates ($r = 0.24$ in 1980). This suggests that the ecological variation of suicide and homicide rates may be differently determined in Siberia as compared to other regions and nations of the world.

Notes

1 Address enquiries to David Lester, Ph.D., Psychology Program, The Richard Stockton College of New Jersey, P O Box 195, Jimmie Leeds Road, Pomona, NJ 08240-0195.
2 Now online at www.who.int