

Population Drinking and Gender Gap in Suicide Mortality in Europe

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1. INTRODUCTION

In most countries, suicide rates are significantly higher for men compared to women, despite women engaging more frequently in suicide attempts [1]. In the European region, the average male-to-female rate ratio of suicides is 3.5:1 [2]. The gender gap in suicide mortality is particularly high in the countries of Eastern Europe [4]. The extreme gender imbalance in these countries is due to high suicide rates for men and relatively low suicide rates for women [7]. The reasons behind such a drastic gender difference in suicide rates in this region are still poorly understood.

Some researchers attribute the suicide-gender paradox in the countries of Eastern Europe to the high level of alcohol consumption [7-10]. In these countries, male are more prone to binge drinking of distilled spirits, which can contribute to higher suicide rates among them [5-6].

This study aims to test the hypothesis that national differences in the level of alcohol consumption explain the East-West discrepancy in the gender gap in suicide rates.

2. METHODS

Age-standardized male and female suicide rates per 100,000 for the 45 European countries were taken from the WHO Mortality Database. Data on alcohol consumption (in litres of pure alcohol per person age 15 years and older) were taken from the Global Information System on Alcohol and Health of WHO. The male-to-female ratio

Table 1. Comparison of alcohol consumption per capita and indices of gender difference in standardized death rates (male/female per. 100,000) from suicide in the groups of Eastern and Western European countries; t-test

	Western Europe (n=21)		Eastern Europe (n=24)	
	Mean	m	Mean	m
Alcohol consumption**	1,79	0,18	3,12	0,35
Gender gap in suicide*	3,77	,32	4,91	,35

Note: t-test; * p < .05; ** p < .01; m -Std. Error Mean

of suicides (the five-year average from 2010 to 2014) was calculated. The comparison in the gender gap in suicides was made between Western (n 21) and Eastern (n 24) European countries (t-test). In addition, the male-to-female ratio of suicides and the level of alcohol consumption per capita in Western and Eastern European countries were compared. To examine the relationship between alcohol consumption and gender gap in suicide mortality a Pearson two-tailed correlation analysis was performed using the statistical package "Statistical 12.Stat Soft."

3. RESULTS

Table 1 shows the mean male/female ratio of suicides and the mean level of alcohol consumption per capita for Western and Eastern European countries. Across the whole period the average gender gap in suicide mortality for Western and Eastern Europe was 3.8 ± 0.32 and 4.9 ± 0.35 respectively, while the average level of alcohol consumption per capita was 1.8 ± 0.18 and 3.1 ± 0.35 litres respectively. The results of the correlation analysis indicate statistically significant relationship between alcohol consumption per capita and gender gap in suicide mortality in Eastern Europe ($r=0.58$; $p=0.001$). The results also indicate that there is no statistically significant relationship between alcohol consumption per capita and gender gap in suicide mortality in Western Europe ($r=0.37$; $p=0.08$)

4. DISCUSSION

Using WHO suicide mortality data, we demonstrated that a clear geographic pattern of male-to-female ratio of suicides across Europe is evident. In Eastern Europe suicide rate is approximately five times higher in men compared with women. It is clear that the difference in the sex ratio of suicides between Western and Eastern European countries cannot be explained by genetic factors [2]. Therefore, the East-West discrepancy in the gender-suicide gap can be attributed to the lifestyle factors. The results of statistical analysis indicate that differences in the level of alcohol consumption per capita may contribute to the East-West discrepancy in the gender gap in suicides.

Before concluding, some potential limitations of this study must be mentioned. It should be recognized that socio-structural factors also might have contributed to the East-West disparity in the gender-suicide gap. Compelling evidence suggests that binge drinking as a strategy for dealing with psychosocial stress has a detrimental effect on men's health in Eastern Europe [3]. In contrast, women are more successful in developing strategies to cope with stress than men [2].

In conclusion, the outcomes of this study suggest a positive relationship between population drinking and gender gap in suicides in the countries of Eastern Europe. Alcohol appears to play an important role in the high gender gap in suicide mortality in this region.

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