Relationship Between Rates of Geriatric Suicide and Consumption of Alcoholic Beverages in European Countries

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Among older adults, suicide is a significant and persistent health problem. The highest suicide rate is found among white men aged 65 years and older. The causes of elder suicide are multifaceted. Although no predominate factor precipitates or explains geriatric suicide, alcohol is strongly linked to suicide attempts and completions. This study examined the relationship between rates of suicide in 65- to 74-year-olds and per capita consumption of alcoholic beverages in European countries. Data on suicide rates in 65- to 74-year-olds and per capita consumption of alcoholic beverages were obtained from the World Health Organization databases. Correlations were computed to examine relationships between suicide rates in 65- to 74-year-old males and females and per capita consumption of beer, wine, and spirits in the general population in 34 European countries. There was a positive correlation between suicide rates in 65- to 74-year-old males and per capita consumption of spirits. No correlations between suicide rates in 65- to 74-year-old males and per capita consumption of beer or wine were found. We also found no correlations between rates of suicide in 65- to 74-year-old females and per capita consumption of beer, wine, or spirits. The results of this study are consistent with reports that consumption of spirits is associated with suicide events. It is to be hoped that this paper will stimulate further studies that are necessary to clarify the relation between suicide rates in different age groups and consumption of alcoholic beverages, and attract more attention to the problem of geriatric suicide.

KEYWORDS: human development, suicide, geriatric, alcohol, wine, beer, spirits, United States

INTRODUCTION

Suicide has constituted a critical public health problem for many decades. Among older adults, suicide is a significant and persistent health problem[1,2]. Indeed, the highest suicide rate is found among white men aged 65 years and older[3,4]. The causes of elder suicide are multifaceted[1,2,3,4,5]. Although no predominate factor precipitates or explains geriatric suicide, alcohol is strongly linked to suicide attempts and completions. Studies have evaluated the portion of older suicide decedents who had consumed alcohol immediately before the suicide event. A study of medical examiner toxicology reports on older suicide decedents found that 14.8% of 64- to 73-year-olds and 5.8% of those aged 74 and older had

alcohol present in the blood stream at autopsy[6]. In a study of elder suicide attempts, 24.5% of patients aged 60–69 and 13% of those patients aged 70–79 had consumed alcohol before the attempt[7]. A number of reports suggest that alcohol sales and per capita consumption of alcoholic beverages may be related to suicidality[8,9,10]. This study examined the relationship between rates of suicide in 65- to 74-year-old males and females and per capita consumption of alcohol beverages in European countries.

METHODS

Information on suicide rates in 65- to 74-year-old males and females and per capita consumption of beer, wine, and spirits in the general population in European countries was obtained from the World Health Organization (WHO) databases[11,12]. All European countries with a population more than 1 million people for which the WHO data were available were included in the study. The most recent available data were used. Correlations were computed to examine relationships between suicide rates in 65- to 74-year-old males and females and per capita consumption of beer, wine, and spirits in the general population in 34 European countries.

RESULTS

Suicide rates in 65- to 74-year-olds and per capita consumption of alcoholic beverages in the general population in European countries are presented in Table 1. Suicide rates in 65- to 74-year-old males ranged from 3.7/100,000 in Albania to 94.5/100,000 in Russia. In 65- to 74-year-old females, suicide rates ranged from 2/100,000 in Greece to 25.1/100,000 in Slovenia. The mean suicide rate was $41.1 \pm 26.2/100,000$ in 65- to 74-year-old males, and $11.2 \pm 5.7/100,000$ in females. The mean per capita consumption of beer, wine, and spirits was 3.6 ± 2.2 , 3.1 ± 2.2 , and 3.4 ± 2.8 liters, respectively.

There was a positive correlation between suicide rates in 65- to 74-year-old males and per capita consumption of spirits ($n = 34$, $r = 0.4$, $p = 0.03$). No correlations between suicide rates in 65- to 74-year-old males and per capita consumption of beer or wine were observed ($n = 34$, $r = -0.1$, $p = 0.6$ and $n = 34$, $r = -0.1$, $p = 0.5$, respectively). We also found no correlations between rates of suicide in 65- to 74-year-old females and per capita consumption of beer, wine or spirits ($n = 34$, $r = -0.2$, $p = 0.4$; $n = 34$, $r = 0.03$; $p = 0.9$; and $n = 34$, $r = 0.2$, $p = 0.3$, respectively).

DISCUSSION

The present study found that higher suicide rates in 65- to 74-year-old males were associated with higher per capita consumption of spirits in the general population of European countries. This finding is consistent with the results of the study that investigated the relationships between suicide rates and beverage-specific measures in the U.S. over periods of from 14–20 years[13]. It was found that suicide rates increased significantly as a function of increased spirit sales. Beer and wine sales were not associated with suicide rates. Probably, consumption of spirits is associated with suicide events. This can also be confirmed by the observation that after the legalization of strong beer in 1989 in Iceland, the decrease in consumption of spirits was accompanied by a decrease in the suicide rate[14].

At-risk drinking can be very common in the elderly. Paradoxically, when specific markers for alcohol problems are absent, psychophysical well-being is the dominant hallmark of at-risk drinking[15]. Therefore, when physicians' inquiry on alcohol use is restricted to intake information and does not assess the consequences of use, it cannot distinguish between safe and hazardous drinking.

Aging is associated with cognitive impairments[16]. Etiological models for alcohol use disorders have traditionally proposed trait and cognitive explanations for initiation, maintenance, and dependence[17]. Therefore, cognitive decline associated with aging may contribute to alcohol misuse in the older people.

TABLE 1
Suicide Rates in 65- to 74-Year-Olds and Per Capita Consumption of Alcoholic Beverages in the General Population in European Countries

Country	Suicide Rates in 65- to 74-Year-Olds (per 100,000)		Per Capita Alcohol Consumption (in Liters)		
	Males	Females	Beer	Wine	Spirits
ALBANIA	3.7	3.7	1	0.42	0.57
AUSTRIA	53.4	14.3	5.96	4.47	1.7
BELARUS	91	18.3	1.17	0.35	6.5
BELGIUM	35.5	13.6	5.4	2.88	1.36
BOSNIA AND HERZEGOVINA	12.9	6.5	1.25	0.2	4.89
BULGARIA	31.9	14.8	1.85	3.16	2.94
CROATIA	61.9	18.9	4.96	5.69	1.5
CZECH REPUBLIC	31.4	7.3	8.6	2.35	3.96
DENMARK	34.4	11.3	5.58	4.36	1.36
ESTONIA	62.9	11	3.86	1.01	3.15
FINLAND	35.8	10.6	4.41	2.57	2.73
FRANCE	38.8	13.6	2.1	8.25	2.96
GERMANY	29	10.8	6.82	3.27	2.38
GREECE	8.7	2	2.1	4.82	2.24
HUNGARY	78.5	20.1	3.55	4.37	3.64
IRELAND	19.1	0.8	8.8	4.35	2.65
ITALY	17.9	5.7	1.47	7.11	0.58
LATVIA	75.7	16.1	1.94	0.7	6.71
LITHUANIA	89.8	19.7	5.53	1.84	4.92
MACEDONIA	21.8	14.4	0.64	1.28	2.9
MOLDOVA	40.7	10	0.35	3.09	15.17
NETHERLANDS	15	9	4.62	2.72	2.05
NORWAY	19.9	8.1	2.84	1.33	0.83
POLAND	34.3	7.8	2.99	0.9	4.38
PORTUGAL	38.8	8	3.87	7.22	5.27
ROMANIA	33	7.7	3.22	3.39	1.31
RUSSIA	94.5	18.2	1.67	1.07	8.05
SLOVAKIA	28.4	4.1	4.95	1.75	5.37
SLOVENIA	88.7	25.1	3.76	4.66	3.3
SPAIN	21.3	7.1	3.76	4.61	2.79
SWEDEN	29.5	9.4	3.29	2.19	1.23
SWITZERLAND	38.7	15.1	3.25	6.43	1.77
UKRAINE	72.1	13.5	0.74	0.25	2.77
UNITED KINGDOM	8.7	3.4	5.46	2.29	1.89

*Conversion factors used to estimate amount of pure alcohol in (barley) beer is 5.0%, wine 12%, and spirits 40% of alcohol (other conversion factors were used for some types of beer and other beverages).

The results of this epidemiological study should be treated with caution because of some limitations: (1) per capita consumption of spirits in the general population may be different from per capita consumption of spirits in 65- to 74-year-olds and (2) this study does not take into account cultural differences and differences in drinking patterns between countries.

The present study found a relation between suicide rates in 65- to 74-year-old males and consumption of spirits in the general population. It is to be hoped that this paper will stimulate further studies that are necessary to clarify the relation between suicide rates in different age groups and consumption of alcoholic beverages, and attract more attention to the problem of geriatric suicide.

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BIOSKETCH

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