

## ASSOCIATION OF NATIONAL CANCER MORTALITY AND SUICIDE RATES<sup>1</sup>

F. STEPHEN BRIDGES AND C. BENNETT WILLIAMSON

*The University of West Florida*

*Summary.*—Using WHO data from 1996 instead of 1990, the authors replicated and extended Knodrichin and Lester's 2001 study. Like their study, our total rates of cancer mortality and suicide in a similar sample of 37 European nations of the world were estimated to be positively associated.

Kondrichin and Lester (2001) cited work by others (Albanes, Jones, Schatzkin, Micozzi, & Taylor, 1988; Ben-Eliyahy, Yirmiryay, Liebeskind, Taylor, & Gale, 1991; Lester, 1992; Law, Thompson, & Wald, 1994; Stack & Wasserman, 1996) who reported cancer and suicide are similar in some psychological, i.e., stress, and physiological, i.e., height and cholesterol levels, correlates. Using 1990 data, Kondrichin and Lester (2001) found for 37 European nations that the total rates of cancer mortality were associated with the rates of suicide, even when the sample was separated into nations formerly in eastern Europe and into those nations of western Europe. These researchers did *not* examine the rates of cancer mortality and suicide by sex for their sample.

The present note includes an estimate of the association of the rates of cancer mortality with the rates of suicide in 37 European countries in 1996 (or closest year<sup>2,3</sup>). Data were available for 32 of the same 37 countries used by Kondrichin and Lester (2001).<sup>2,3</sup> The age-standardized rates of mortality (per 100,000 population) from cancer and suicide were obtained from the same source, i.e., World Health Organization *World Health Statistics Annual, 1997-1999* (and the then current online edition).<sup>4</sup> This is the first edition of the *World Health Statistics Annual* to use a new World Health Organization standard population for calculating age-standardized death rates. However, the online edition reported that the age-standardized death rates are not

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<sup>1</sup>Please send enquiries to Dr. F. Stephen Bridges, Division of Health, Leisure and Exercise Science, The University of West Florida, 11000 University Parkway, Pensacola, FL 32514-5750 or e-mail (fbridges@uwf.edu).

<sup>2</sup>The nations were Armenia, Austria, Azerbaijan, Belgium (1994), Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy (1995), Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, The Netherlands, Norway (1995), Poland, Portugal, Romania, Russia, Slovenia, Spain (1995), Sweden, and the UK.

<sup>3</sup>Data for the nations of Georgia, Switzerland, Tajikistan, Turkmenistan, and Uzbekistan were unavailable from this Annual; substituted were data from Belarus, the former Yugoslav Republic of Macedonia, Luxembourg, Slovak Republic (1995), and Ukraine.

<sup>4</sup>[[http://www3.who.int/whosis/whsa/whsa\\_table4.cfm?path=whosis,whsa,whsa\\_table4](http://www3.who.int/whosis/whsa/whsa_table4.cfm?path=whosis,whsa,whsa_table4)]

directly comparable to the rates used by others from previous editions of the Annual.

Overall, the Pearson correlation given in the table for the two rates of mortality was .38 ( $p = .01$ , two-tailed). The correlation between the two rates of mortality for males was .36 ( $p < .05$ ) and for females .53 ( $p < .001$ ). Non-significant values were found both for nations formerly in eastern Europe (total, males, females  $r_s = .19, .35, .34$ , respectively) and for those in western Europe (total, males, females  $r_s = -.28, -.54, -.11$ , respectively).

TABLE 1  
PEARSON CORRELATIONS FOR NATIONAL RATES OF CANCER MORTALITY AND SUICIDE

Society/Sex	Kondrichin & Lester (2001): 1990 Data*	Present Study: 1996 Data
Total		
37 Nations	.56‡	.38†
Eastern Europe	.85‡	.19
Western Europe	.42*	-.28
Male		.53‡
Female		.36†
Male		
Eastern Europe		.34
Western Europe		-.11
Female		
Eastern Europe		.35
Western Europe		-.54

\*1990 data used by Kondrichin and Lester (2001) for the nations of Georgia, Switzerland, Tajikistan, Turkmenistan, and Uzbekistan were unavailable; substituted were 1996 data from the nations of Belarus, the former Yugoslav Republic of Macedonia, Luxembourg, Slovak Republic (1995), and Ukraine. \*One-tailed  $p < .05$ . †One-tailed  $p < .01$ . ‡One-tailed  $p < .001$ .

Like Kondrichin and Lester (2001) using 1990 data, the current 1996 data from 37 similar countries indicate a positive association between total mortality from cancer and suicide. Unlike their findings, our total rates of cancer mortality and suicide for nations formerly in eastern Europe and for those in western Europe were not associated; however, 5 of 37 nations were now different. Male and female rates of cancer mortality and suicide both for nations formerly in eastern Europe and for those in western Europe were not correlated. Power analysis for the present nine statistical measures was calculated using the program by Glantz (1997, p. 262ff) and six of these, i.e., eastern and western Europe (total, males, and females), yielded low power estimates.

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