

USE OF THE SAME AND A LONGER TIME SERIES TO
REPLICATE DAVID LESTER'S STUDY OF SUICIDE
AND BIRTH RATES IN CANADA¹

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Summary.—This is a replication of Lester's work (2000) using the time series 1970–1990 to study associations between age-standardized rates of suicide and crude birth rates in the 10 Canadian provinces were also examined between 1961 and 1999.

Durkheim (1951) postulated that the rates of suicide varied inversely with social integration. Stack (1980a, 1980b) among others provided analysis generally supporting Durkheim's proposition, i.e., high rates of birth are seen as increasing social integration in a society. According to Lester (2000), in sociological studies of suicide some researchers have reported correlations over different geographic regions (Stack, 1981), or over a series of years (Lester & Yang, 1998), or over a mix of regions and years (Trovato & Jarvis; 1986). Lester's correlations (2000) between the rates of suicide and birth in the 10 Canadian provinces (see Table 1 for list) from 1970 to 1990, estimated using three different methods (over time, over space, and mixed), were small and negative. The source of Lester's data (2000) was not reported nor was each province listed or any of Canada's three territories mentioned.

The present study examined correlations obtained with these methods using age-standardized suicides (P. Tully, custom tabulation from Deaths database, August 2002, Health Statistics Division, Statistics Canada, Ottawa) and crude birth rates (per 100,000 population) for the 10 provinces in Canada from 1961 to 1999. Rates of birth by province were calculated for data obtained from the Federal Government of Canada (Statistics Canada, 2002; K. Hung, personal communication, March 2002, Research and Statistics Division, Department of Justice, Ottawa).

Pearson correlations over 39 years for each province ranged from $-.84$ to $.29$ and averaged $-.43$. These correlations and their 95% confidence intervals are provided in Table 1. Similarly, over 21 years, i.e., 1970–1990, for each province Lester (2000) reported very similar correlations ranging from $-.82$ to $.28$, with an average of $-.29$. Interestingly, further analysis of a subset of our data for the years 1970 to 1990 produced correlations ranging from

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TABLE 1
CORRELATIONS AND 95% CI FOR SUICIDE[†] AND BIRTH RATES OVER 10 PROVINCES FOR EACH OF 39 YEARS AND OVER 39 AND 21 YEARS[‡] BY CANADIAN PROVINCE

Suicide and Birth Rates For Each of 39 Years					
Year	Pearson <i>r</i>	95% CI	Year	Pearson <i>r</i>	95% CI
1961	-.58	-.89, .08	1981	.04	-.61, .65
1962	-.60	-.89, .05	1982	.22	-.47, .75
1963	-.69*	-.92, -.10	1983	.17	-.52, .72
1964	-.64*	-.90, -.01	1984	.46	-.23, .85
1965	-.61	-.90, -.03	1985	-.06	-.67, .59
1966	-.73*	-.93, -.18	1986	.30	-.41, .78
1967	-.78**	-.95, -.30	1987	.23	-.47, .75
1968	-.69*	-.92, -.11	1988	.37	-.34, .81
1969	-.76*	-.94, -.26	1989	.39	-.32, .82
1970	-.44	-.84, .26	1990	.54	-.14, .87
1971	-.61	-.89, .04	1991	.55	-.12, .88
1972	-.65*	-.91, -.04	1992	.62	-.02, .89
1973	-.76*	-.94, -.25	1993	.26	-.44, .76
1974	-.68*	-.92, -.10	1994	.31	-.40, .79
1975	-.62	-.90, .02	1995	.17	-.52, .72
1976	-.39	-.82, .32	1996	.28	-.43, .77
1977	-.46	-.84, .24	1997	.37	-.34, .81
1978	-.43	-.83, .27	1998	.18	-.50, .73
1979	-.36	-.80, .35	1999	.10	-.57, .68
1980	-.10	-.69, .56			

Province	Suicide and Birth Rates Over 39 and 21 Years by Province			
	39 Years		21 Years	
	Pearson <i>r</i>	95% CI	Pearson <i>r</i>	95% CI
Newfoundland	-.58**	-.76, -.32	-.45*	-.74, -.02
Prince Edward Island	-.27	-.54, .06	.25	-.20, .62
Nova Scotia	-.72**	-.85, -.53	-.14	-.54, .31
New Brunswick	-.77**	-.88, -.61	-.68**	-.86, -.34
Quebec	-.84**	-.92, -.72	-.55*	-.70, -.16
Ontario	-.01	-.33, .31	.44*	.01, .73
Manitoba	-.33*	-.59, -.02	.17	-.29, .56
Saskatchewan	-.41*	-.64, -.10	.20	-.26, .58
Alberta	-.61**	-.77, -.36	-.04	-.46, .40
British Columbia	.29	-.03, .55	.44*	.01, .73

[†]Age-specific suicide rates underlying the age-standardized suicide rates were calculated with June 1 population estimates for 1950 to 1970 and with July 1 population estimates for 1971 to 1999. 1950 to 1970 population estimates were not adjusted for net census undercoverage and do not include nonpermanent residents; 1971 to 1999 estimates do. [‡]For 1970–1999 as reported by Lester (2000). **p* < .05. ***p* < .01.

-.68 to .44, with an average of -.04. This difference might possibly be attributed to a different data source(s) used by Lester (2000) than used in the present study or rounding error. Also, the correlations over provinces for each of our 39 years ranged from -.78 to .62 and averaged -.16. For the

years 1970–1990, Lester (2000) reported correlations that ranged from $-.73$ to $.46$ and averaged $-.16$. Our analysis of a subset of our data from 1970–1990 produced correlations very similar to those of Lester (2000), ranging from $-.76$ to $.46$, with an average of $.14$.

Over all 210 data points (10 provinces by 20 years) the correlation was $-.21$ (cf. Lester's average correlation of $-.25$). Further, for the subset from 1970–1990 mean r was $-.10$. Thus each procedure led to the conclusion that the association was small and negative as Lester (2000) previously reported. Further interpretation of these data would require other data as well as those for suicide.

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