SOCIAL CORRELATES OF AMERICAN INDIAN SUICIDE AND HOMICIDE RATES

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Abstract: The state suicide rates of American Indians in 1980 showed a very different pattern of associations with state social variables than did the state suicide rates of Whites. In contrast, the homicide rates had similar associations, in particular with an index of social instability. The implications of these findings for theory are examined, and suggestions made for further research.

Durkheim (1897), in his classic theory of suicide, predicted that social suicide rates should be greater in regions where indices of social integration (the degree to which people are bound together in social networks) and social regulation (the degree to which people's desires and emotions are controlled by social customs and norms) are either very high or very low. By extension, he anticipated that the following relationships should obtain: (a) low levels of social integration result in a type of suicide labeled by Durkheim as *egoistic*, (b) high levels of social integration result in a type of suicide labeled by Durkheim as *altruistic*, (c) low levels of social regulation result in a type of suicide labeled by Durkheim as *anomic*, (d) high levels of social regulation result in a type of suicide labeled by Durkheim as *fatalistic*, and (e) moderate levels of both social integration and regulation result in relatively low suicide rates.

Johnson (1965) argued that the definitions of social integration and social regulation, as offered by Durkheim and subsequent theorists, often overlapped, and that it made more sense to combine the two concepts into one. Furthermore, Johnson claimed, altruistic and fatalistic suicide are rarer than egoistic and anomic suicide. Therefore, he proposed simplifying Durkheim's theory, advancing a single, less complex proposition, namely, lower levels of social integration/regulation lead to higher rates of suicide.

Many studies have confirmed predictions based on Durkheim's theory as modified by Johnson. For example, indicators of social integration/regulation, such as high divorce rates (which indicate low levels of social integration/regulation) have been shown to be positively associated

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which treatment, prevention, and administrative systems can be reflected or judged for their adequacy. Other outcome targets have not been selected for reporting progress in IHS publications such as found in *Healthy People 2000* (for instance, the decline in age of first drinking by youth, the decrease in mortality by traffic accidents related to alcohol abuse, etc.).

While the ASAPB relates the decrease in mortality rate of the 1989–1991 data year (paragraph 3 of the ASAPB response), the figure remains .3 a percent more than the preceding data period of 1987–1989. This represents 73 more AI/AN who died from alcohol related causes. The point (acknowledged by the ASAPB) is that mortality is increasing since data year 1986 despite all the "collaborative efforts", the introduction of another data system, the introduction of evaluation systems to maximize resources, and the other administrative remedies discussed above.

with high suicide rates across states in the U.S. (Lester, 1988) and nations (Stack, 1981), and over time (Yang, 1992).

Henry and Short (1954) introduced homicide into this theoretical framework by arguing that the social stresses which lead to higher suicide rates also lead to lower homicide rates, and vice versa. This prediction springs from several assumptions, specifically that: (a) frustration results in aggression, (b) given strong external constraints on human behavior, frustrated people have external sources onto which to blame their unhappiness, thus legitimizing outward-directed aggression, leading to a high homicide rate, and (c) given weak external constraints on human behavior, frustrated people have no external sources onto which to blame their unhappiness, outward directed aggression is thus not legitimized, consequently aggression is turned inward upon the self, leading to a high suicide rate.

Lester (1988) conducted a factor-analytic study of regional patterns of suicide and homicide at the state-level in the United States. He found that suicide rates varied negatively with a cluster of variables appearing to measure social integration/regulation (including divorce rates, alcohol consumption, church attendance, and interstate migration), and rates of suicide were less strongly associated with factors relating to longitude (suicide rates increased toward the west). Other analyses revealed that homicide rates varied positively with a cluster of variables appearing to measure southerness and less strongly with wealth (positively) and social integration/regulation (negatively). Lester concluded that these observations in regard to suicide supported the Durkheim/Johnson theory of suicide, since the strongest associations were between suicide rates and indices of social integration/regulation. However, the results with respect to homicide and suicide did not conform to Henry and Short's theory, since the associations between homicide rates and the social indicators were different from, but not opposite of those specific to suicide rates.

The present study sought to extend Lester's (1988) study to American Indian rates of personal violence measured at the state level. The overarching research questions were: Which states have higher rates of suicide and homicide for American Indians, and are these rates associated with indices of social integration? The patterns characteristic of American Indians were not expected to conform to those of the population as a whole since the former have been, and still are, an oppressed minority. Prior research suggests that the associations found for the dominant cultural group may not generalize to a minority group. For example, Lester (1990–1991) found that African American rates of suicide, at the state level, are quite different from those of Whites. This raised the possibility, therefore, that the social correlates of American Indian suicide rates might differ substantially from those of Whites.

Method

The data are for the year 1980 for the 48 contiguous, continental states of the USA. All data were obtained from the *Statistical Abstract of the United States*, published annually, and the *Census of the Population, 1980*, from the Department of Commerce, except for the following variables: suicide and homicide rates from mortality data tapes for 1980 supplied by the National Center for Health Statistics, the American Indian population from the Bureau of Indian Affairs, church attendance and percentage Roman Catholic (Quinn, Anderson, Bradley, Goetting, & Shriver, 1982), handgun control strictness (Lester, 1987), alcohol consumption (Anon, 1985), gross state product per capita (Renshaw, Trott, & Friedenberg, 1988), southerness (Gastil, 1971), and latitude and longitude (Lester, 1980).

State suicide and homicide rates for American Indians and for Whites were calculated directly from the mortality data tapes for 1980 provided by the National Center for Vital Statistics. These rates are shown in Table 1.

Table 1
Suicide and Homicide Rates of American Indians per 100,000 per year, 1980 (calculated by the present author)

	Population	Suicide Rate	Homicide Rate
AL	7561	0.00	0.00
AZ	152857	19.63	20.93
AR	9411	0.00	10.63
CA	201311	4.47	8.44
CO	18059	16.61	27.69
CT	4533	0.00	0.00
DE	1330	0.00	0.00
FL	19136	5.18	15.53
GA	7619	13.13	13.13
ID	10521	19.01	9.50
IL	16271	0.00	0.00
IN	7835	25.53	0.00
IA	5453	0.00	18.34
KS	15371	6.51	13.01
KY	3610	0.00	0.00
LA	12064	16.58	8.29
ME	4087	24.47	24.47

Table 1 (Continued)
Suicide and Homicide Rates of American Indians per 100,000 per year, 1980 (calculated by the present author)

	Population	Suicide Rate	Homicide Rate
MD	8021	12.47	0.00
MA	7743	0.00	0.00
MI	40038	5.00	2.50
MN	35026	17.13	19.99
MS	6180	64.72	16.18
MO	12319	0.00	16.24
MT	37270	26.83	26.83
NE	9197	10.87	32.62
NV	13304	15.03	37.58
NH	1352	0.00	0.00
NJ	8394	0.00	0.00
NM	104777	15.27	21.00
NY	38732	5.16	12.91
NC	64635	9.28	20.11
ND	20157	39.69	29.77
OH	12240	8.17	0.00
OK	169464	6.49	12.98
OR	27309	7.32	7.32
PA	9459	10.57	10.57
RI	2898	0.00	0.00
SC	5758	0.00	17.37
SD	45101	35.48	33.26
TN	5103	0.00	0.00
TX	40074	2.50	7.49
UT	19256	15.58	5.19
VT	984	0.00	0.00
VA	9336	0.00	0.00
WA	60771	16.46	19.75
WV	1610	0.00	0.00
WI	29497	13.56	6.78
WY	7125	28.07	42.11

Results

A Factor Analysis

The state social variables were factor analyzed, using a principal components extraction with a varimax rotation (using SPSSx). The results are shown in Table 2. Eight eigenvalues were greater than one, and the SPSSx program extracted eight factors. Labeling factors is somewhat arbitrary, but was attempted on the basis of the social variables with the highest loadings (say, greater than .80 where possible):

1.   *Wealthy/urban* (median family income, per capita income, percent urban population, personal income).

2.   *Elderly* (birth rate, death rate, median age).

3.   *Southern* (percent black, southerness, latitude, percent married women working part-time).

4.   *Social instability* (divorce rate, interstate migration, percent born in-state).

5.   *Unemployment* (male, female, and total unemployment rate).

6.   *Labor force participation* (females in labor force).

7.   *American Indian population* (American Indian population).

8.   *Dense/Roman Catholic* (percent Roman Catholic and population density).

Table 2 *
Results of the Factor Analysis (Decimal Points are
Omitted from the Factor Loadings)

| | Factor | | | | | | | |
	I	II	III	IV	V	VI	VII	VIII
divorce rate	03	−16	−16	84 #	02	06	10	−13
Interstate migration	01	−28	05	87 #	−28	08	04	01
church attendance	−23	−19	17	−65 #	−39	−23	−08	29
gun control strictness	23	19	−01	−64 #	18	19	06	07
alcohol consumption	34	13	28	55 #	−12	35	−01	27
% born in state	−40	03	−07	−81 #	12	−10	−20	−12
% foreign born	69 #	31	05	04	07	−05	34	39
% Roman Catholic	50 #	32	46	−02	06	−02	01	49
median family income	90 #	−07	28	−05	03	19	−15	−03
per capita income	92 #	16	24	06	−10	14	−04	−06

Table 2 (Continued)*
Results of the Factor Analysis (Decimal Points are Omitted from the Factor Loadings)

	Factor							
	I	II	III	IV	V	VI	VII	VIII
% urban population	83 #	−04	−13	05	−02	−08	20	34
population	56 #	21	−29	−33	23	−05	39	−13
population density	47	36	03	−31	05	−04	−24	55 #
% in poverty	−64 #	−06	−57 #	−10	08	−16	21	06
gross state product	60 #	−33	08	26	−32	−04	−03	−30
personal income	91 #	19	24	12	−09	16	−02	−04
crime rate	65 #	03	−14	47	13	13	27	32
% black	−07	05	−87 #	−22	16	16	−16	09
southerness	−20	−10	−85 #	18	16	−05	09	−26
latitude	06	03	90 #	−09	10	19	−04	−10
infant mortality	06	18	−77 #	−28	18	−02	−17	16
birth rate	−16	−90 #	03	12	−18	−17	14	−09
% elderly	−20	75 #	16	−18	−17	−44	07	02
% voting for Reagan	03	−56 #	20	29	−46	−23	12	−05
longitude	08	−50 #	14	42	−05	−04	50 #	−32
death rate	−20	81 #	−03	−28	−01	−38	−10	−02
% children	−34	−90 #	−06	−03	05	−12	−01	−02
median age	26	93 #	01	04	01	−14	−04	06
females/males	−02	58 #	−31	−49	22	−16	−16	37
unemployment	−03	02	−07	−10	96 #	−15	−05	01
male unemployment	03	04	06	−13	92 #	−17	03	−07
female unemployment	−10	−03	−26	−04	89 #	−08	−17	12
females in labor force	26	−08	35	09	−36	76 #	−10	05
males in labor force	39	−42	41	04	−36	53 #	−14	−08
employment ratio	21	−21	35	08	−52 #	59 #	−11	−08
married women working:								
full time	−21	−05	−58 #	22	−29	61 #	−04	−10
part time	23	−04	86 #	−19	−17	21	−09	19
AmInd population	17	−08	−07	08	−04	−03	91 #	−06
% AmInd population	−24	−26	20	24	−23	−15	63 #	11
% of variance	25.2%	21.1%	12.5%	8.1%	7.6%	5.9%	3.3%	2.9%

* # a high loading of the variable on the factor (> 0.50)

Some of the labels describe the factors better than others, but are intended only to facilitate ease of reference in the discussion below.

The Pearson correlations between the SPSSx-derived factor scores for each factor and American Indian and White suicide as well as homicide rates are shown in Table 3. White suicide rates were associated with *social instability* and *American Indian.* In contrast, the suicide rates of American Indians were associated with *wealthy/urban* and *elderly.* Since many states have few American Indian residents, the correlations were repeated using the subset of 25 states with 10,000 American Indian residents or more in 1980. Only the correlation of American Indian suicide rates with *wealthy/urban* was replicated on this reduced sample of states.

Table 3*
Correlations of Factor Scores With Rates of Personal Violence

	Factor							
	I	II	III	IV	V	VI	VII	VIII
All States:								
Amind suicide rate	−0.29 *	−0.36 *	0.10	0.09	−0.12	−0.02	0.13	−0.03
White suicide rate	0.08	−0.21	−0.17	0.75 *	0.03	−0.02	0.33 *	−0.03
Amind homicide rate	−0.13	−0.17	0.16	0.38 *	−0.43 *	0.03	0.23	−0.23
White homicide rate	0.16	−0.09	−0.61 *	0.39 *	0.09	−0.12	0.39 *	0.09
25 States:								
Amind suicide rate	−0.63 *	−0.29	0.56 *	0.06	−0.31	0.02	0.05	0.20
White suicide rate	0.19	−0.06	−0.33 *	0.84 *	0.03	0.02	0.21	0.40*
Amind homicide rate	−0.42 *	0.15	0.22	0.46 *	−0.44 *	0.27	0.16	0.09
White homicide rate	0.36 *	0.07	−0.66 *	0.44 *	−0.01	−0.12	0.37*	0.33*

* statistically significant at the 5% level or better

There were more similarities in the patterns of homicide of Whites and American Indians. For the full sample of 48 continental states, White homicide rates were associated with *southern, social instability,* and *American Indian.* (The association with *American Indian* is rather puzzling. However, other social variables load on this factor, including longitude. It may be the contribution of these other variables which causes the association.) American Indian homicide rates were associated with *social instability* and *unemployment.* Thus, White and American Indian homicide rates shared an association with indices of social instability.

Using the reduced sample of states with larger American Indian populations, the association of American Indian homicide rates with social instability and unemployment were replicated.

Regression Analysis with the Eight Factors

The eight factor scores were used in a multiple regression analysis to predict American Indian and White suicide and homicide rates. The results are shown in Table 4. From an examination of the R^2 scores, it is evident that the factors were more successful in accounting for the White suicide rate than the American Indian suicide rate (76% and 26% of the variance, respectively) and similarly for homicide rates (73% and 51% of the variance, respectively).

Table 4
Results of the Multiple Regression Over the 48 States Using the Eight
Factor Scores: Beta Coefficients Are Shown

	Factor							
	I	II	III	IV	V	VI	VII	VIII
Amind suicide rate	−0.29 *	0.11	0.36 *	0.09	−0.12	−0.02	0.13	−0.03
White suicide rate	0.08	−0.17 *	0.21 *	0.75 *	0.03	−0.02	0.33 *	−0.03
Amind homicide rate	−0.14	0.16	0.17	0.38 *	−0.43 *	0.03	0.23 *	−0.23 *
White homicide rate	0.16	−0.61 *	0.09	0.38 *	0.09	−0.12	0.39 *	0.09

Because of the small number of states (48) and the large number of social variables (39), the factor-analysis is of questionable validity. A second multiple regression was run, therefore, using the eight social variables with the highest loadings on each of the eight factors (per capita income, median age, latitude, interstate migration, unemployment, female labor force participation, American Indian population, and total population). The multiple R^2 scores were generally a little lower for these eight social variables than for the eight factors scores: (a) American Indian suicide rates, 26%; (b) American Indian homicide rates, 44%; (c) White suicide rates, 73%; and (d) White homicide rates, 70%. However, the reduced success of these social variables in accounting for the American Indian rates of suicide and homicide was replicated in this set of analyses.

Discussion

The present study of statewide American Indian suicide rates reveals a very different pattern of associations in contrast to White statewide suicide rates. Whereas White suicide rates were associated with a cluster of variables that seem to measure social instability (thereby confirming Durkheim's theory of suicide), American Indian suicide rates were associated with a cluster of social variables that included measures of wealth and urbanization. American Indian suicide rates were higher also in the poorer/less urban states, probably a result of the large reservations

being in those states and higher suicide rates among American Indians on reservations.

In contrast, the homicide rates of American Indians and Whites showed some similarities in their pattern. Both were associated with social instability, with states which had greater social instability also having higher homicide rates for both Whites and American Indians. In addition, American Indian homicide rates are higher where general overall unemployment is lower.

The present study indicates, therefore, the importance of examining whether the "classic" theories and research findings for suicide and homicide apply to all groups. The results reported here suggest that alternative theories may be required to account for rates of personal violence among American Indians. For example, Van Winkle and May (1986) examined the influence of social integration and acculturation on suicide rates in a small number of American Indian reservations in New Mexico. Their work indicates that acculturation plays a larger role in predicting suicide rates than does social integration.

Future research should explore the potentially predictive social variables in regard to suicide and homicide rates of American Indians living on and off reservations. It also would be useful to determine whether certain social indicators specific to American Indians have better success in predicting suicide and homicide rates. Hopefully, the present study will stimulate further sociological study of American Indian suicide and homicide rates.

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