

Thomas W. Young,¹ M.D.; Suzanna E. Wooden,² B.A.; Paul C. Dew,³ M.D., M.P.H.;
Gerald L. Hoff,⁴ Ph.D.; and Jinwen Cai,⁴ M.D.

The Richard Cory Phenomenon: Suicide and Wealth in Kansas City, Missouri*

ABSTRACT: This case-control study investigates the relationship between suicide and wealth in Kansas City, Missouri. House and personal property appraisal data on all victims of suicide from 1998 and 2002 and victims from a control population of deaths reported to the Jackson County Medical Examiner during the same time interval were obtained from the Jackson County Government website. The controls were matched to suicide cases by race, gender, year of death, and age at death (± 1 year). Data from the 426 members of each group of suicides and controls indicate that suicide victims were: 1) 77% more likely than controls to have lived in houses rather than in apartments or trailers, 2) more likely than controls to have lived in more expensive houses (mean values \$70,143 versus \$61,513 respectively, $p = 0.04$) and 3) more likely to have killed themselves because of factors other than financial strain (8.0% of suicides showed financial strain).

KEYWORDS: forensic science, death investigation, suicide, wealth, case-control study

Whenever Richard Cory went down town,
We people on the pavement looked at him:
He was a gentleman from sole to crown,
Clean favored, and imperially slim.

And he was always quietly arrayed,
And he was always human when he talked;
But still he fluttered pulses when he said,
“Good-morning,” and he glittered when he walked.

And he was rich—yes, richer than a king—
And admirably schooled in every grace;
In fine we thought that he was everything
To make us wish that we were in his place.

So on we worked, and waited for the light,
And went without the meat, and cursed the bread;
And Richard Cory, one calm summer night,
Went home and put a bullet through his head (1).

Richard Cory, the mythical man of wealth and refinement made famous by Edwin Arlington Robinson’s poem, is the envy of all who know him, particularly those who struggle to eke out a miserable existence. His story comes to an abrupt, surprising conclusion when

the man who has everything goes home “one calm summer night” and puts “a bullet through his head.”

The suicide of a wealthy person like Richard Cory seems unexpected, but, really, is it? Are suicides more likely or less likely among the well-to-do?

The association of economic factors and suicide has been studied by many over the past century. In Kansas City, the authors performed a case-control study to see if suicide occurs more or less frequently among those with more of life’s finer things.

Methods

As required by state statute, the Office of the Jackson County Medical Examiner receives reports on all deaths from injury and many natural deaths occurring suddenly or unexpectedly in Jackson County, Missouri. The office maintains a database of information on computer for all of these investigations. Among many other items, the database includes the name, age, race and gender of each victim; the date and time of incident or injury related to the death; the circumstances surrounding each death; the cause and manner of death; the home address of each victim; and the names and home addresses of the next-of-kin of each victim.

Jackson County Government performs house and personal property appraisals for taxation purposes. Appraisal values for real estate and personal property can be viewed from the Jackson County Government website (www.jacksongov.org) by parcel address or by the name of each individual owning personal property subject to taxation.

All cases of suicide reported to the Medical Examiner from 1998 to 2002 were included in this study. Using the county government website, the authors used home addresses to find the types of housing lived in by each suicide victim from Jackson County and the appraisals for each single family home. For those with personal property subject to taxation, these appraisals were found under the name of the victim, the victim’s spouse or the victim’s family, depending on the age, dependent status and living circumstances of each victim.

¹ Jackson County Medical Examiner, 660 East Twenty Fourth Street, Kansas City, MO 64108.

² University of Missouri—Kansas City School of Medicine, 2411 Holmes Street, Kansas City, MO 64108.

³ Kansas City University of Medicine and Biosciences, 1750 Independence Avenue, Kansas City, MO 64106.

⁴ Kansas City Missouri Health Department, 2400 Troost Avenue, Kansas City, MO 64108.

* Presented orally at the 56th Annual Meeting of the American Academy of Forensic Sciences, Dallas, TX, February, 2004.

Received 24 Aug. 2004; and in revised form 16 Oct. 2004; accepted 16 Oct. 2004; published 2 Feb. 2005.

Appraisals of houses lived in by the suicide victims and appraisals for personal property owned by each victim, the victim's spouse, or the victim's parents were compared to a control group of non-suicidal deaths selected from the Jackson County Medical Examiner database. Each non-suicide control victim was matched by age, race, gender, and year of death with each suicide victim. Initially, a stratified random sampling technique was used to match the year of death. Suicide and control victims were then progressively matched by gender, by race, and by age at death within ± 1 year.

Additionally, the authors identified stressors for suicidal intent, such as financial strain, loss of a loved one, relationship difficulties, health difficulties, mental health problems or drug problems, for each suicide from investigative reports. Medical examiner office policy and standard death investigation practice requires the documentation of evidence for suicidal intent in suicide cases (2), and the evidence is documented in the narrative portion of the report. Criteria for the identification and selection of each stressor were as follows:

- Mental health—The victim had a psychiatric diagnosis, or the subject took prescription psychotropic medication.
- Health difficulties—The victim made reference to illness or physical pain as the reason for his suicide, either as indicated by a suicide note or by the victim's words heard prior to his death.
- Relationship difficulties—The victim had undergone a recent divorce or break-up with a significant other, or the victim had a recent fight or argument with a spouse, parent, or live-in partner.
- Financial strain—The victim suffered recent job loss or faced debt or bankruptcy. The victim made specific reference to financial strain in a suicide note or verbally.
- Drug problems—The victim had a history of treated or untreated drug abuse or addiction as indicated in the medical record or had toxicologic evidence of acute intoxication.
- Loss—The victim, according to those familiar with him or her, showed evidence of grief precipitated by the loss of a loved one, particularly by death.

More than one stressor could be assigned to a case. Those cases without evidence of the stressors defined above were categorized as "unknown."

SPSS software was used to perform the t-test for house and personal property appraisals. The calculation of the 95% confidence interval of the odds ratio for type of dwelling was performed with SAS software.

Results

The Office of the Jackson County Medical Examiner investigated 9,982 deaths from the years 1998 to 2002. A total of 426 deaths were classified as suicide (Table 1). The distributions for these suicide deaths are shown by age, gender and race (Table 2).

Suicide victims were 77% more likely than controls to have lived in houses rather than in apartments, in trailers, or in other types of dwellings (Table 3). The houses lived in by members of the suicide group also had significantly higher mean and median appraisal values than the houses lived in by members of the control group (Table 4). When the house appraisal values for suicide and control groups were compared by \$50,000 increments, the majority of the suicide group members lived in houses appraised from \$50,000 to \$100,000. The majority of the members of the control group

TABLE 1—Number and percentage of deaths due to suicide by year, Jackson County, Missouri, 1998–2002.

Year of Death	Number of Suicides	Number of All Reported Deaths	Suicide (%) of All Reported Deaths
1998	86	1892	4.5
1999	90	2014	4.4
2000	85	1979	4.3
2001	102	2017	5.0
2002	63	2080	3.0
Total	426	9982	4.3

TABLE 2—Number and percentage of deaths due to suicide by selected characteristics, Jackson County, Missouri, 1998–2002, and percentage of same characteristics in Jackson County population according to 2000 census data.

	Number	% of Suicides	% of Population*
Gender			
Male	338	79.3	48.2
Female	88	20.7	51.8
Age group, year			
0–9	0		14.2
10–19	36	8.5	14.2
20–29	80	18.8	14.0
30–39	75	17.6	15.5
40–49	101	23.7	15.2
50–59	46	10.8	10.7
60–69	27	6.3	7.0
70–79	33	7.7	5.8
80–	28	6.6	3.3
Race			
White	344	80.8	71.0
Black	66	15.5	23.9
Hispanic	13	3.1	3.4
Asian	3	0.7	1.6
Native American	0		0.5

* The population of Jackson County, Missouri in 2000 was 654,880.

TABLE 3—Prevalence of suicide and control by type of dwelling in Jackson County, Missouri, 1998–2002.

Type of Dwelling	Case Group (N = 426)		Control Group (N = 426)	
	N	%	N	%
House	298	70.0	242	56.8
Other housing (i.e., apartment, trailer)	128	30.0	184	43.2
Odds Ratio	95% Confidence Interval			
1.77	1.33, 2.35			

TABLE 4—Mean and median house and personal property appraisals, suicide vs. control, Jackson County, Missouri, 1998–2002.

	Case Group (N = 426)		Control Group (N = 426)		p-Value (t-test)
	N	\$	N	\$	
House appraisal					
Mean	277	70,143	227	61,513	0.040
Median	277	62,316	227	50,580	
Personal property appraisal					
Mean	93	3,666	90	3,054	0.198
Median	93	2,750	90	2,045	

TABLE 5—Number and percentage of deaths due to suicide by house value, Jackson County, Missouri, 1998–2002.

House Value	Number from Suicide Group	%	Number from Control Group	%
<\$50,000	101	36.5	113	49.8
\$50,000-	129	46.6	79	34.8
\$100,000-	32	11.6	27	11.9
\$150,000-	11	4.0	3	1.3
\$200,000-	0		3	1.3
\$250,000-	2	0.7	0	
\$300,000-	2	0.7	2	0.9
Total	277		22	

TABLE 6—Identified stressors for suicide, Jackson County, Missouri, 1998–2002.

	Number	Total	%
Mental health	167	426	39.2
Relationship difficulties	112	426	26.3
Drugs problems	110	426	25.8
Health difficulties	71	426	16.7
Financial strain	34	426	8.0
Loss	16	426	3.8
Unknown	77	426	18.1

TABLE 7—Mean, median and quartile house appraisals, suicide vs. control and suicide group with financial strain, Jackson County, Missouri, 1998–2002.

	N	Mean House Appraisal	Median House Appraisal	Appraisal by Quartile
Suicide group living in houses*	277	\$70,143	\$62,316	25%, \$39,910 75%, \$89,013
Control group living in houses*	227	\$61,513	\$50,580	25%, \$29,237 75%, \$77,640
Suicide group with financial strain living in houses†	23	\$77,126	\$74,050	25%, \$45,197 75%, \$99,734

* Average house appraisals are significantly different between suicide and control group ($p = 0.04$, two-tailed t-test).

† Average house appraisals are not significantly different statistically between suicide group with financial strain and suicide group ($p = 0.452$, two-tailed t-test).

lived in houses appraised below \$50,000. At higher appraisals, the numbers of individuals in both groups were too few to make meaningful comparisons (Table 5).

Personal property appraisals were available for only 93 members of the suicide group and 90 members of the control group. Although the mean and median appraisals were higher for the suicide group, the differences were not statistically significant (Table 4).

Analysis of stressors within the suicide group identified mental health and relationship issues as the predominant stressors, but financial strain was identified in only 8.0% of victims (Table 6). There is indication that suicide victims identified with financial strain live in homes with even higher mean and median house values than the suicide or control groups, but the small number in the financial strain group does not allow for a statistically significant comparison (Table 7, Table 8).

The data indicate that suicide victims are: 1) more likely to live in houses than other victims rather than in apartments or trailers, 2) more likely to live in more expensive houses than other victims,

TABLE 8—Mean, median and quartile house appraisals for each identified stressor for suicide, Jackson County, Missouri, 1998–2002.*

	Total Number	Number Living in Houses	Mean House Appraisal	Median House Appraisal	Appraisal by Quartile
Mental health	167	104	\$70,153	\$65,285	25%, \$45,755 75%, \$85,648
Relationship difficulties	112	73	\$67,795	\$63,368	25%, \$39,787 75%, \$89,957
Drugs problems	110	69	\$72,601	\$65,724	25%, \$39,273 75%, \$87,949
Health difficulties	71	50	\$68,351	\$55,467	25%, \$44,716 75%, \$90,386
Financial strain	34	23	\$77,126	\$74,050	25%, \$45,197 75%, \$99,734
Loss	16	9	\$72,057	\$68,925	25%, \$53,964 75%, 101,151
Unknown	77	49	\$65,058	\$50,945	25%, \$25,535 75%, \$79,975

* Average house appraisals are not significantly different statistically between the financial strain group and other identified stressors of suicide.

and 3) more likely to kill themselves because of factors other than financial strain. There is some indication that if financial strain is a factor in a suicide, the victim will likely kill himself after becoming accustomed to a more affluent lifestyle.

Discussion

The positive correlation of suicide and socioeconomic status in this study contradicts many of the studies on this subject performed over the past century. Although Emile Durkheim's work implicated suicide as more common among the wealthy than among the poor (3), most studies showed the opposite. A few seemed to agree with Durkheim (4–6) and at least one study showed no relationship between suicide and socioeconomic status (7), but Stack's 15-year review of the sociological literature found that most studies correlate poverty with suicide (8).

Many of these reports demonstrating a positive poverty-suicide correlation compared different population groups with one other. There are several examples. Ferrada-Noli first compared suicide rates among the richest and poorest counties in Sweden (9), then compared suicide rates of native-born Swedes with those of immigrants in economically contrasting areas within Stockholm County (10). He found positive correlations between suicide and poverty in both studies. Among Native American populations, Young found a positive correlation between suicide rate and the percentage of the population in an Indian Health Service area below the poverty level (11). Agbayewa and colleagues demonstrated a positive association between suicide and male unemployment among populations of elderly people in British Columbia, Canada (12). Another Canadian study by Hasselback, et al., using a multiple linear regression analysis with 261 Canadian census divisions and 21 sociodemographic variables, showed a negative relationship between income and suicide (13).

This present study differs fundamentally in design from these other studies. It uses a control group of non-suicide deaths selected from the same study population and isolates the socioeconomic variable after matching for other potential confounding factors. By attempting to predict individual behavior from aggregate data, population-based studies like those described above may become

subject to confounding by unknown factors not addressed in the study design. This may make their conclusions vulnerable to the ecological fallacy (14,15).

This vulnerability associated with ecological or population-based studies is well-recognized among sociologists and epidemiologists. Population-based studies may be inexpensive to perform and may not require as much time, but the results may show the direct opposite correlation when compared to studies with controls and individual data.

The use of house appraisal as an indicator of wealth is also different. Other studies used unemployment, per capita gross national product, income, public assistance, bankruptcy, savings, and occupation as indicators of wealth. One study from the United Kingdom used census-derived indices related to socioeconomic deprivation and social fragmentation (16). This present study is the only one found that uses house and personal property appraisals as indicators of wealth.

This study attempts to measure the lifestyle to which one becomes accustomed. Lifestyle can only be measured indirectly because the total sum of the money individuals spend on personal possessions and activities is not recorded in the public record. Although the best indicator of lifestyle can be debated, the stable quality of the home one lives in makes it a useful indicator of lifestyle. Despite fluctuations in income and employment that can change drastically, the house a person lives in remains a stable marker and testament to his or her habits, style and tastes. House appraisal values serve as numerical measures of lifestyle that can be compared. Personal property values of items such as automobiles and boats could also be useful indirect measures, but the authors did not find enough data on this from the county website to allow statistically significant comparisons.

House appraisals performed by Jackson County Government appear to be lower than the present-day real estate values of these homes. House appraisals are reassessed by the county periodically and may not reflect present-day values that rise with inflation. While not completely accurate and up-to-date, the appraisals still represent the most reliable indicator of house value in the public record.

A positive association between suicide and wealth seems counterintuitive, but possible explanations for this association include: 1) disappointment with life, 2) diminished endurance, and 3) increased complexity.

Disappointment with Life—Many people who become more affluent expect more from life. When expectations are dashed, either through a reversal of fortune or when problems and unhappiness persist even with good fortune, suicide victims become disappointed with life. This thwarted expectation hypothesis is supported by data from Charlton. He found that suicide is more common among the unemployed who live in areas where people are mostly employed than among those who live in areas of high unemployment (17).

Diminished Endurance—People with wealth and comfort do not endure hardship as well as those without the finer things in life. Suicide results from a breakdown of endurance.

Increased Complexity—Finally, wealth brings complexity to life. Additional responsibilities and complications that come with wealth often lead to additional and often severe problems. People living in poverty do not have the money to gamble in casinos, take risks in financial ventures, or pay the hired help. This may be the reason why this study seems to indicate that people who commit suicide for financial reasons live in nicer homes. Unfortunately,

there were not sufficient numbers of cases in the financial strain category to allow statistically significant results.

These explanations listed above may explain the findings of several studies that compare suicides within a population to fluctuating changes in the economy over time. For example, Alhara and Iki correlated an increase in the suicide rate with the recent economic downturn in Japan (18,19). Wasserman's study showed the effect of the economy on suicide in the United States over time (20), and a study by Weyerer and Wiedenmann did a similar comparison for Germany (21). Each of these studies demonstrated that suicides increase with economic downturns. Although the studies differ in design from the present study, they do not contradict the findings. Instead, they seem to support the disappointment/diminished endurance/increased complexity hypothesis. The people susceptible to suicide during times of economic stress are not living in poverty; rather, they are found among the upwardly mobile who are trying to get ahead financially. They live increasingly complex lives, and during economic downturns, they suffer disappointment and find they have diminished endurance.

Following a prolonged economic downturn, Japan had a record number of suicides in 1999 (22). Japan has one of the highest suicide rates in the world. Although the main reason cited for suicide in 41% of cases was ill health, Japan witnessed a sharp increase in suicides due to financial problems in 1999. Business failures and an inability to pay for basic living needs were rampant, and many middle-aged men killed themselves after corporate restructuring. One of the public health measures used in Japan to prevent suicide was to install mirrors in the subways, allowing greater visibility to spot someone trying to kill himself. It is important to note that mirrors were not installed in ghettos or in habitations characterized by severe poverty; instead, they were placed where the upwardly mobile—those with disappointment, diminished endurance, and increased complexity—are more likely to aggregate.

What about suicide among the very wealthy? Unfortunately, there is not sufficient data to address those living in houses with high appraisals. There were not enough of these individuals in this study to allow meaningful comparisons. Perhaps a larger data set of suicides and controls from communities with high wealth would allow meaningful comparisons among this group of people.

Although others like Hamermesh and Soss support the poverty/suicide positive association and eschew the "Richard Cory myth" (23), this study invites another look at this problem from a different approach. Rather than more ecologic studies, larger studies utilizing individual data with controls and covering a wider set of communities would be helpful to understand and further characterize the association of suicide and wealth.

References

1. Richard Cory. Selected poems of Edwin Arlington Robinson. London: Macmillan, 1965.
2. Rosenberg ML, Davidson LE, Smith JC, Berman AL, Buzbee H, Gantner G, et al. Operational criteria for the determination of suicide. *J Forensic Sci* 1988;33:1445–56. [\[PubMed\]](#)
3. Durkheim E. *Suicide*. Glencoe, IL: Free Press, 1951.
4. Lester D. Freedom of the press and personal violence: a cross-national study of suicide and homicide. *J Soc Psychol* 1981;114:267–9.
5. Lester D. The association between the quality of life and suicide and homicide rates. *J Soc Psychol* 1984;124:247–8. [\[PubMed\]](#)
6. Yang B, Lester D. Economic and social correlates of suicide in Caribbean nations. *Psychol Rep* 1994;75:351–2. [\[PubMed\]](#)
7. Marks A. Socioeconomic status and suicide in the state of Washington: 1950–1971. *Psychol Rep* 1980;46:924–6. [\[PubMed\]](#)
8. Stack S. Suicide: A 15-year review of the sociological literature. Part I: cultural and economic factors. *Suicide Life Threat Behav* 2000;30:145–62. [\[PubMed\]](#)

9. Ferrada-Noli M. Social psychological vs. socioeconomic hypotheses on the epidemiology of suicide: an empirical study. *Psychol Rep* 1996;79:707–10. [PubMed]
10. Ferrada-Noli M, Asberg M. Psychiatric health, ethnicity and socioeconomic factors among suicides in Stockholm. *Psychol Rep* 1997;81:323–32. [PubMed]
11. Young TJ. Poverty, suicide, and homicide among Native Americans. *Psychol Rep* 1990;67:1153–4. [PubMed]
12. Agbayewa M, Marion S, Wiggins S. Socioeconomic factors associated with suicide in elderly populations in British Columbia: an 11-year review. *Can J Psychiatry* 1998;43:829–36. [PubMed]
13. Hasselback P, Lee K, Mao Y, Nichol R, Wigle D. The relationship of suicide rates to sociodemographic factors in Canadian census divisions. *Can J Psychiatry* 1991;36:655–9. [PubMed]
14. Freedman DA. The ecological fallacy. <http://stat-www.berkeley.edu/~census/ecofal>
15. Greenland S, Morgenstern H. Ecological bias, confounding, and effect modification. *Int J Epidemiol* 1989;18:269–74. [PubMed]
16. Hawton K, Harriss L, Hodder K, Simkin S, Gunnell D. [The influence of the economic and social environment on deliberate self-harm and suicide: an ecological and person-based study.](#) *Psychol Med* 2001;31:827–36. [PubMed]
17. Charlton J. Trends and patterns in suicide in England & Wales. *Int J Epidemiol* 1995;24(Suppl. 3):s45–s52.
18. Alhara H, Iki M. Effects of socioeconomic factors on suicide from 1980 through 1999 in Osaka Prefecture, Japan. *J Epidemiol* 2002;12:439–49. [PubMed]
19. Alhara H, Iki M. An ecological study of the relations between the recent high suicide rates and economic and demographic factors in Japan. *J Epidemiol* 2003;13:56–61. [PubMed]
20. Wasserman IM. The influence of economic business cycles on United States suicide rates. *Suicide Life Threat Behav* 1984;14(3):143–56. [PubMed]
21. Weyerer S, Wiedenmann A. Economic factors and the rates of suicide in Germany between 1881 and 1989. *Psychol Rep* 1995;76:1331–41. [PubMed]
22. Lamar J. [Suicides in Japan reach a record high.](#) *BMJ* 2000;321:528. [PubMed]
23. Hamermesh DS, Soss NM. [An economic theory of suicide.](#) *J Polit Econ* 1974;82:83–98. [PubMed]

Additional information and reprint requests:
 Thomas W. Young, M.D.
 Jackson County Medical Examiner
 660 East Twenty Fourth Street
 Kansas City, MO 64108