

***African-American and White Suicide in Kansas City, Missouri 1995-1997:  
Individual and Aggregate Circumstances***

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*Introduction*

Although suicide in America is committed by Whites much more than African-Americans (Lester 1994), increasing attention has been given to African-American suicide over the past couple of decades due to the rise in suicide for this group, especially for young males (Gibbs, 1997). Wasserman (1999) explains that various theories have been developed to explain the rise in African-American suicide. Our purpose is not to give detailed explanations of these theories; the reader is directed to Lester (1998) for such information. The goal of the present research is to examine how both individual and aggregate-

level factors impact suicide of African-Americans and Whites. Using data on suicides in the Kansas City, Missouri area from 1995-1997, we examine how, for example, a person's marital status and educational attainment, as well as how the average income level in the area where the person resides, are related to suicide. We include White suicides as a comparison to trends in African-American suicides.

*Theory and Literature Review of African-American Suicide*

Drawing from Durkheim's model of social integration (1897[1951]), Lester (1998) explains that one approach to understanding

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African-American suicide is to consider how it is related to the strength of social ties in African-American communities. Just as Durkheim explains that increased social integration reduces suicide, Lester reviews theories which explain how strong social bonds among African-Americans in the community, in the home, and in religious organizations have helped account for the historically low suicide rates among African-Americans. Both Hammermesh (1974) and South (1984), however, take a more economic approach to the study of African-American suicide when they argue that improved economic conditions among African-Americans have resulted in higher suicide rates for this group, as has been the case for Whites. In other words, as the economic conditions of African-Americans have come to more closely resemble that of Whites, so, too, has their suicide rate. More recently, Burr, Hartman, and Matteson (1999)

report that African-American suicide is more likely to occur in metropolitan areas where occupational and income inequalities between African-Americans and Whites are large. Clearly, then, more research is needed to better understand patterns in African-American suicide.

Lester (1998 pp. 148-149) expresses the difficulty in establishing theories to explain suicide among African-Americans when he writes that

... it is difficult to explain both the low rate of black suicide *and* the rising suicide of African Americans. . . . (W)e must find explanatory variables which put African Americans at an *advantage* over whites . . . , (and) we have to find explanatory variables which place African Americans at a *disadvantage* over whites.

Using individual-level data on suicides in Kansas City, Missouri, as well as aggregate-level data on each zip code area in which there were suicides, we attempt to answer one main question: what

social and demographic variables distinguish African-American and White suicides in low income areas versus those in high income areas?

As Stewart (1980) has explained, any study of African-American suicide can be enhanced by including non-economic variables as well as economic variables. We now turn to a discussion of pertinent predictor variables to be included in our analysis. Coming from the traditional Durkheimian approach that social integration reduces suicide, Stack and Wasserman (1995) report that marital integration in the United States (e.g., being married versus not being married) is inversely related to suicidal ideology for both African-Americans and Whites. Stack and Wasserman also report that, in general, African-Americans have lower marital integration than Whites; specifically, a higher percentage of African-Americans are single compared to Whites. Stack (1996) shows that compared to their married counterparts, divorced

and widowed African-Americans are more likely to commit suicide. For Whites, those who are divorced, single, and widowed are more likely than their married counterparts to commit suicide. Overall, though, Stack (1996) argues that the marital statuses of divorced, widowhood, and being single are more strongly related to White suicides because extended family ties play a more powerful role in tying the person to the family among African-Americans.

Stack and Wasserman (1995) find that education is positively related to suicide ideology for both groups. Lester (1990-1991), however, finds that bi-variate correlations between education and national suicide rates are positive for African-Americans, but no significant association exists for Whites. We see support, therefore, that increased education weakens social integration for African-Americans, but support is mixed for Whites. As with suicide for Whites, African-American suicide is more

common among males than females, but unlike Whites, African-American young adults (25-34 years old) are more likely to commit suicide than older African-Americans (Gibbs 1997).

Because their statistical modeling of institutional ties (e.g., ties to the family and church) and education explained twice as much variation for White suicidal ideology than for African-American suicidal ideology, Stack and Wasserman (1995) suggest researchers should look to other variables to better explain variation in African-American suicide. We follow their admonition, as well as that of Stewart (1980), that economic factors alone cannot fully explain variation in African-American suicide, by examining a combination of population composition, economic, and social integration variables in our analysis.

#### *Methods and Data*

We use both individual-level data and

aggregate-level data to explain variation in African-American and White suicide. Information on the persons who suicided are from the Kansas City Health Department, and cover Jackson, Platte, and Clay counties in Kansas City, Missouri. For all recorded suicides during 1995-1997, information is available on the decedents' race, marital status, educational attainment, gender, age, and zip code of residence. Since 183 of the 185 suicides for which we have information on all variables are for either Whites or African-Americans, we dropped the two other cases of suicide from this analysis.

Data for median family income in each zip code area are from the Mid-America Regional Council (MARC [2000]). All data from MARC are for 1996, the mid-point for our study. The dependent variable for African-American suicides is a binary variable, coded 1 if the suicide occurred in a zip code area that had a

median family income below the sample median (which for African-Americans was \$21,515). All other African-American suicides were coded 0. For Whites, the same coding is used; the suicide was coded 1 if the suicide occurred in a zip code area that had a median family income below the sample median (which for Whites was \$33,004). All other White suicides were coded 0.

We use marital status and educational attainment as measures of social integration. To measure marital status, we use a dummy variable coded 1 if the decedent were never married, 0 if otherwise. Educational attainment is simply the number of years of schooling completed by the decedent, respectively. We also include the decedent's age at death in our statistical modeling.

Data for independent variables regarding aggregate characteristics of each zip code area are from MARC (2000), and measure the total population size of African-Americans and Whites

in each zip code area as well as the percent of the population in each zip code area that is (1) African-American, (2) White, (3) aged 18-64, and (4) aged 65 and over. Unfortunately, a 'high' level of aggregation is used. We do not know, for example, how many Whites aged 18-64 are in each area; we only know the total number of persons in each zip code area who are aged 18-64. Although we would prefer to have information on the percentage of African-Americans aged 25-34 (Gibbs 1997), these data were unavailable.

Being that the dependent variable is binary, we estimate a logit model. Because the dependent variable is a binary variable, and because we would expect that the degree of change in the dependent variable depends on the current value of the independent variables (e.g., we expect the odds of committing suicide in low income areas to be greater for highly educated persons than for persons with less education

given the incompatibility of being highly educated and living in or near poverty), logistic regression is appropriate.

Using Allison's (1999) arguments that any Variance Inflation Factor (VIF) above 2.5 indicates problematic collinearity in regression, we examined all VIFs from both regression models in table 2, and none was greater than 2.5 (the largest VIF in the African-American model was 1.56, while it was 1.28 for the White model).

### *Results*

To describe the sample, 85% (n=155) of the 183 suicides are among males and 76% (n=140) are among Whites. Because the vast majority of suicides were among males, we do not include gender as a control variable in regression analyses. The median age of the decedents is 38, and the median level of educational attainment is a high school education.

Fifty-six percent of African-American suicides were among never married persons, while only 36% of White suicides were among never married persons. Twenty-eight percent of African-American suicides were among married persons, while the percent for Whites was 34. Sixteen percent of African-American suicides were among widowed or divorce persons, while the comparable percent for Whites was 30.

Bivariate correlations, means, and standard deviations of the variables are shown in table 1. For African-Americans, an increase in the proportion of persons aged 18-64 is related to a lower likelihood of suicides occurring in low income areas. As the percentage of the population that is African-American increases, so, too, does the likelihood of suicide occurring in low income areas. For Whites, the larger the proportion of White persons in each area and the larger the total White population in each area, the

Table 1 Bivariate Correlations, Means, and Standard Deviations of Kansas City Suicide African-Americans (N=43)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Low Income Areas	1.00						
(2) African-American Total Population	-.04	1.00					
(3) Percentage of Population African-American	.32*	.85**	1.00				
(4) Percentage of Population 18-64	-.74**	-.51**	-.56**	1.00			
(5) Never Married	.13	-.10	-.02	.07	1.00		
(6) Education	-.16	-.12	-.21	.09	-.24	1.00	
(7) Age	.08	.21	.21	-.18	-.49**	.13	1.00
Mean	0.44	12.75	62.84	58.33	0.56	11.81	32.40
Standard Deviation	0.50	6.84	24.60	3.88	0.50	1.92	13.83

Whites (N=140)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Low Income Areas	1.00						
(2) White Total Population	-.39**	1.00					
(3) Percentage of Population White	-.64**	.10	1.00				
(4) Percentage of Population 65 and Over	-.06	.13	.24**	1.00			
(5) Never Married	.11	-.21*	-.12	.05	1.00		
(6) Education	-.14	-.01	.01	-.05	.05	1.00	
(7) Age	-.03	-.06	-.04	-.01	-.37**	.10	1.00
Mean	0.44	16.61	70.66	13.79	0.34	12.45	43.78
Standard Deviation	0.50	8.33	23.16	5.46	0.48	2.34	18.99

\* p<.05; \*\*p<.01

less likely Whites are to suicide in low income areas.

Because the African-American total population size in each area is highly correlated with the proportion of the total population in each area that is African-American ( $r=.85$ ), we only include the proportion of the total population in each area that is African-American in the African-American logistic model.

Results of the logistic regression for African-Americans are shown in the top panel of table 2 and the results for Whites are in the bottom panel. Each percentage increase in the proportion of the population that is 18-64 decreases the expected odds that African-American suicides will occur in low income areas by 66.4% ( $1-[e^{-1.09}]*100=66.4$ ), holding all else constant. None of the other variables is significantly related to the dependent variable. Explained variance, adjusted for degrees of freedom, is .58. For Whites, each unit increase

in the proportion of total population that is White decreases the expected odds of White suicides occurring in low income areas by 15.6%. Similarly, for each percentage increase in the total White population size, the expected odds of White suicides occurring in low income areas decreased by 22.9%. On the other hand, each percentage increase in the proportion of the population that is aged 65 or older increases the expected odds of White suicide occurring in low income areas by 16.2%. None of the other independent variables is significantly related to the dependent variable.

### *Conclusion*

We see that, for both African-Americans and Whites, individual-level characteristics (e.g., our measures of social integration and the decedent's age) had no significant impact in determining whether or not a suicide occurred in low income areas.

Our significant findings centered around

Table 2 Logit Models of Suicide in Kansas City, MO 1995-1997

African-Americans (N=43)		
Variable	Unstandardized Coefficient	t-value
Percentage of Population African-American	-.02	-0.54
Percentage of Population 18-64	-1.09	-3.08
Never Married	-.14	-0.10
Education	-.48	-1.50
Age	-.06	-1.08
Constant	71.51	
R <sup>2</sup> Adjusted for df	.58	
Whites (N=140)		
Variable	Unstandardized Coefficient	t-value
Total White Population	-.26	-4.29
Percentage of Population White	-.17	-4.92
Percentage of Population 65 and Over	.15	2.30
Never Married	-1.03	-1.51
Education	-.20	-1.52
Age	-.04	-1.86
Constant	18.83	
R <sup>2</sup> Adjusted for df	.59	

aggregate characteristics of the areas in which people live. Burr, Hartman, and Matteson (1999) find that suicide among African-American males (91% of African-American suicides in our data set were among males) increases in those

areas where income inequality is pronounced. We find that in low income areas, as the proportion of the population that is 18-64 increases, the expected odds of an African-American suicide occurring in that area decrease.

We suggest, as do Stack (1996) and Stack and Wasserman (1995), that this association points to the economic necessity of extended families for African-Americans in low income areas. More persons of working age in the family can add income to the family and alleviate some of the financial (and emotional) burdens and stresses associated with poverty. The economic necessity of extended families for Whites is not as great since White families tend to have a higher income than African-American families (Marger 2000), as evidenced by the disparity of median family incomes in these data (\$21,515 for African-Americans and \$33,004 for Whites). For Whites, as the proportion of the population aged 65 and over increases, the expected odds of a White suicide occurring in low income areas increase. Since older persons often experience economic difficulties (Atchley 1999), areas with a high proportion of older persons means there is likely to be a high level of poverty in the entire

area. Oddly enough, we do not find that it is the older persons themselves who are committing suicide, but that suicide among people in general in the low income areas increases as the proportion of older persons increases. We also see that as both the total size of the White population and the proportion of the population that is White increases, the expected odds that a White suicide will occur in low income areas decrease. When the proportion of Whites living in a given area is low, the area is likely to be impoverished (given the vast differences of median family incomes we see in these data). Unlike African-Americans, who often have extended family to turn to for economic help when financial problems arise, Whites are less likely to have extended family live with them and help alleviate the economic difficulties (Stack 1996; Stack and Wasserman 1995).

Our research on suicide in low income areas, therefore, supports an economic theory of

African-American and White suicide over a social integration theory. When poverty is chronic, as is likely to be the case for persons in low income areas, economic factors are more powerful in impacting suicide than are social integration variables. Attention needs to be paid to persons or factors that can help alleviate financial difficulties in low income areas, at least in the Kansas City area. More research on African-American and White suicide is needed to determine if poverty has similar effects on suicide in other metropolitan areas over longer periods of time.

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