

## MEAN AGES OF HOMICIDE VICTIMS AND VICTIMS OF HOMICIDE-SUICIDE<sup>1</sup>

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*Summary.*—Using Riedel and Zahn's 1994 reformatted version of an FBI database, the mean age of homicide victims in 2,175 homicide-suicides (4,350 deaths) was compared with that of all other victims of homicides reported for the USA from 1968 to 1975. The overall mean age of homicide victims in homicide-suicides was 1 yr. greater than for victims of homicides not followed by suicides, whereas the mean age for both male and female homicide-suicide victims was, respectively, 3 yr. less and greater than the other homicide victims. The mean age of Black homicide victims of homicide-suicides was 2.4 yr. less than that for Black victims of other homicides, whereas the means for Black and White male homicide victims in homicide-suicides were, respectively, about 4 and 5 yr. less than for victims of other homicides. Also, the mean age of White female homicide victims in homicide-suicides was more than two years greater than for female victims of homicides not followed by suicides. When both sex and race were considered, the mean age for those killed in homicide-suicides relative to those killed in homicides not followed by suicides may represent subpopulations with different mean ages of victims.

For the purposes of this study, homicide-suicide is defined as an incident or event whereby a person commits a homicide which is then followed by the person's suicide. Marzuk, Tardiff, and Hirsch (1992) proposed a four-part scheme for classifying these homicide-suicides: (1) uxoricide-suicide or the killing of an intimate partner (usually by males) and subsequent killing of oneself, (2) filicide-suicide<sup>2</sup> which occurs when a perpetrator kills her children and then self (usually women), (3) familicide-suicide represents an overlap between uxoricide-suicide and filicide-suicide, i.e., the killing of both spouse and child(ren), usually by men, and (4) extrafamilial homicide-suicide involves homicide victims outside the family. In a recent study, Liem, Postulart, and Nieuwbeerta (2009) added a fifth category, i.e., killing of other family members followed by suicide or homicide-suicides in which first- to third-degree family members are killed but not those in the above categories. Examples include parricide or the killing of one's parents followed by a suicide and siblicide or the killing of one's siblings followed by a suicide. Liem, *et al.*'s study (2009) reported on 103 homicide-suicides (135 deaths) which occurred in The Netherlands from

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<sup>2</sup>In a recent study of homicide-suicides, Liem, Postulart, and Nieuwbeerta (2009) reported using filicide as an overlapping term to include both filicide and infanticide.

1992 to 2006. These Dutch researchers reported the mean age of homicide victims to be 28.2 yr. but that for victims of other homicides not followed by a suicide was 36.4 yr. On the other hand, in the USA, Stack (1997) reported a mean age of 35.0 yr. for homicide victims in homicide–suicides regardless of sex and a mean age of 32.2 yr. for all other homicide victims. Stack's data were from Chicago, Illinois, from 1965 to 1990 ( $N=16,245$ ). Extrapolating from Liem, *et al.*'s findings (2009), one could hypothesize that if the mean age of homicide victims is related to the type of homicide, i.e., homicide victim in a homicide–suicide or homicide victim alone, then persons killed in homicide–suicides will be younger on average than victims of homicides not followed by suicides.

In 1991, the Centers for Disease Control and Prevention reported that “Data on homicide followed by suicide are limited because many law enforcement agencies do not compile statistics on such incidents. No national figures exist on the incidence of homicide followed by suicide” (p. 653).<sup>3</sup> Interestingly, Riedel and Zahn's reformatted FBI data (1994), i.e., Supplementary Homicide Reports, ease the use of the database.<sup>4</sup> This data set

<sup>3</sup>Downloaded from <http://www.cdc.gov/mmwr/preview/mmwrhtml/00015197.htm> on March 3, 2008.

<sup>4</sup>Riedel and Zahn's study (1994) was undertaken to standardize the format of national homicide data and to analyze trends from 1968 to 1978. Their data, provided by the Inter-university Consortium for Political and Social Research (No. 8676), University of Michigan, were from the Supplementary Homicide Reports taken from the FBI's Uniform Crime Reporting Program Data (United States). One of their reasons for reformatting data was to obtain consistency and comparability of observations and variables over time. Reformatting produced a unit of observation, i.e., the homicide victim, to be held constant; all records (one per case) were the same length. These researchers also reported that “Two major changes in FBI coding of the Supplementary Homicide Reports have resulted in relatively consistent coding within the time periods of 1968–1972, 1973–1975, and 1976–1978 but not between them” (Table 1; p. 1). Riedel and Zahn (1994) reported that the FBI did not collect information on the offender prior to 1976; interestingly, data by sex were found for only 465 of the offenders. In 1976, the unit of observation used by the FBI changed from the “homicide victim” (and suspect) and became the “homicide incident.” Unlike the “homicide victim,” one or more victims and suspects could now be recorded in a “homicide incident.” Finally, the following is an excerpt from a recent grant proposal submission: “Until . . . Bridges brought it to my attention, I (Marc Riedel) was not aware that data on homicide–suicides were part of the data collected by the FBI from 1968 to 1975.” Restructured FBI homicide data by Riedel and Zahn (1994) for 1968–1975 were analyzed by the first author; 123,467 homicides had been reported for the 8-yr. time period. Riedel and Zahn's reformatted variables included information on the reporting agency, cause of death and type of weapon used, the circumstances of the homicide–suicide, and characteristics of the victim and suspect. Within these categories are variables of population and city size, and victims' and suspects' age, race, and sex. One of the circumstance indicators (OCIRCUM2), a variable indicating special circumstances relating to the homicide victim, was available only for the years 1968 through 1975. The special circumstances of this variable were described as follows: 0: Normal, 1: Murder by a juvenile, 2: Murder followed by suicide, and 9: Murder by an insane person. No “murder followed by suicide” data were gathered for the 1976–1978 time period. The first author identified 2,215 homicide cases for which the OCIRCUM2 variable contained a “2” meaning that a murder was followed by a suicide. Focusing on just these homicide cases (each followed by a suicide) by using SPSS and MS Excel spreadsheets, the first author employed a variety of data handling tools, e.g., sort and filter cases commands, to obtain heretofore unknown details about homicide–suicides (including ages). The second author independently corroborated these findings.

was entitled "Trends in American homicide, 1968–1978: victim-level supplementary homicide reports." The reformatted data set of Riedel and Zahn (1994) reported 123,467 homicides had occurred in the USA between 1968 to 1975, but no 'murder followed by suicide' data were available for the 1976–1978 time period. Among these 123,467 homicides were a total of 2,215 homicide–suicides (4,430 total deaths). Among the 2,215 homicides, 40 victims' ages were unknown ( $2,215 - 40 = 2,175$ ; see Table 2). Among these 40 victims there was one whose sex also was unknown. In addition to these 40 homicides, there were two more victims aged 30 and 31 years but whose sex was unknown. Thus, the sex was known for all but three of the homicide victims in homicide–suicides resulting in 469 and 1,743 homicides that occurred among males and females, respectively, for a total of  $469 + 1,743 = 2,212$  cases. Among the 469 male and 1,743 female homicides (in homicide–suicides) there were 9 and 30 victims, respectively, whose ages were unknown plus another homicide victim from among the 40 victims of unknown age whose sex was unknown as well. The total sample comprised, then,  $469 - 9 = 460$  males;  $1,743 - 30 = 1,713$  females;  $460 + 1,713 = 2,173$  cases;  $9 + 30 + 1 = 40$  cases with missing age or sex (see Table 2).

#### METHOD

Independent *t* tests were performed on the data for the mean age differences across the two groups of homicides. SPSS Version 16.0 was used to calculate the mean differences, *t* statistics, asymmetric significance ( $p < .05$ ), and effect sizes *r* across different subgroups of homicide victims' ages and homicide–suicide victims' ages (cf. Table 1). Further, a formula reported by Field (2009) was employed for calculating the effect size statistic, to estimate power for mean comparisons by sex and age groups, i.e., victims of homicide and victims in homicide–suicides,  $r = [t^2 / (t^2 + df)]^{1/2}$ . Although this formula overestimates the effect size somewhat given the correlation between the two groups (Field, 2009), the effect sizes in this study were very small (cf. Table 1).<sup>5</sup>

It is important to note that this dataset represents all cases of homicide, including homicide–suicides, for 1968–1975. Following prior research, the present data were regarded as representative of a population (Studemund & Cassidy, 1987; Trochim, 2005; Field, 2009), so means and standard deviations were appropriate (cf. Morrison & Henkel, 1969). Differences between means of homicide victims' ages, sex, and race for those killed in a homicide (not followed by a suicide) and those killed in a homicide–suicide event were examined.

<sup>5</sup>To evaluate effect size (Field, 2009), the guidelines were  $r = .10$  (small effect) accounts for 1% of the total variance;  $r = .30$  (medium effect) accounts for 9% of the total variance; and  $r = .50$  (large effect) accounts for 25% of the variance.

TABLE 1  
 MEANS, MEDIANS, AND 95% CONFIDENCE INTERVALS FOR VICTIMS' AGES

Description	Homicide-Suicide				Homicide			
	N	M	95%CI	Mdn	N	M	95%CI	Mdn
All	2,175	36.2	35.4-37.0	34.0	118,896	35.2	35.2-35.3	32.0
Sex								
Males	460	31.9	29.9-33.9	30.0	92,662	35.5	35.4-35.6	33.0
Females	1,713	37.4	36.6-38.3	35.0	26,205	34.3	34.1-34.6	31.0
Race								
All White	1,813	37.2	36.3-38.1	36.0	54,643	36.9	36.8-37.1	34.0
All Black	329	31.4	29.8-33.0	30.0	62,544	33.8	33.7-33.9	31.0
Race + Sex								
White								
Males	394	32.3	30.1-34.5	31.0	40,988	37.1	36.9-37.3	34.0
Females	1,418	38.5	37.6-39.5	36.0	13,649	36.4	36.1-36.8	33.0
Black								
Males	53	30.4	24.6-36.1	27.0	50,393	34.2	34.1-34.4	32.0
Females	276	31.6	30.0-33.2	30.0	12,148	32.1	31.8-32.4	30.0

## RESULTS

The ratio of standard deviations to the relevant means was rather large for all groups. The maximum ratio was .686, and the minimum ratio was .413 ( $M = .509$ ), so there was wide variance in homicide victims' ages. In terms of absolute values, the differences in means ranged from 4.8 yr. (White men only) to 0.2 (all White groups). Relative to the standard deviations for the various means, these differences in means seem relatively small. This is reflected in the 95% confidence intervals in Table 1.

Differences between mean ages, in most instances, were statistically significant (cf. Table 2), except for Whites ( $p < .05$ ) and for Blacks. Effect sizes range from .21 for White male homicide victims (small to medium effect), .184 for Black male homicide victims (small effect), .165 for male homicide victims (small effect), and to virtually no effect for other groups.

## DISCUSSION

Given that no "national" figures have been reported for the incidence of homicide followed by suicide, the most important results are the descriptive values in Tables 1 and 2 (Centers for Disease Control and Prevention, 1991). The mean age of persons killed in homicide-suicides was almost 1 yr. older than the mean age of all other victims of homicide not followed by a suicide (36.22 yr. vs 35.24 yr.). This finding agrees with that reported by Stack (1997), who reported a mean age of 35.0 yr. for those murdered in a homicide-suicide event regardless of sex and a mean age of 32.2 yr. for all other homicide victims. In contrast, Liem, *et al.* (2009) reported the mean age of homicide victims in 103 homicide-suicides in

TABLE 2  
AGE, SEX, AND RACE OF VICTIMS IN HOMICIDE AND  
HOMICIDE-SUICIDES WITH INDEPENDENT *t* TESTS

	Victim's Age in Years						$M_{Diff}$	<i>t</i>	<i>p</i> , two-tailed	Effect size <i>r</i>
	Homicide-Suicides			Homicide						
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>				
All persons	36.22	18.90	2,175	35.24	16.16	118,896	-0.98	-2.40	.017	.051
Sex										
Males	31.85	21.80	460	35.50	15.48	92,662	3.65	3.59	3.67e-4	.165
Females	37.40	17.88	1,713	34.34	18.31	26,205	-3.06	-6.71	1.97e-11	.040
Race										
Whites	37.17	19.41	1,813	36.93	17.81	54,643	-0.24	-0.53	.597	.012
Blacks	31.41	14.92	329	33.81	14.41	62,544	2.40	3.01	.003	.012
Race+Sex										
White										
Male	32.26	22.10	394	37.10	16.86	40,988	4.84	4.33	1.86e-5	.212
Female	38.54	18.37	1,418	36.43	20.37	13,649	-2.11	-4.08	4.61e-5	.096
Black										
Male	30.36	20.81	53	34.23	14.13	50,393	3.87	1.35	.182	.184
Female	31.62	13.54	276	32.09	15.42	12,148	0.47	0.58	.566	.033

*Note.*—It should be noted that independent *t* tests and effect sizes are based on *t* tests despite not meeting the assumption that the victims' ages represent a probability sample of some larger population. The data, while a part of a larger population, were not randomly drawn from that larger population so mean differences by race and sex across homicide-suicides were compared with those on homicides alone. Based on these inferential statistics, the only *r* value approaching even a small effect size is for the categories of males. Ages were missing for 40 homicide-suicides, so the *N* for all cases of homicide-suicides is 2,175 (2,215-40).

The Netherlands was 28.2 yr. ( $p < .01$ ), compared to 36.4 yr. for victims of other homicides not followed by a suicide ( $N = 3,203$ ). Selkin (1976) reported the mean age of perpetrators in homicide-suicides to be 43.8 yr. ( $Mdn = 47$ ,  $SD = 16.3$ ). Using a different measure of central tendency, other reports provide the median age but not the mean age of homicide victims to be 35 yr., with a range from 2 to 90 years (Centers for Disease Control and Prevention, 1991).

Analysis by sex resulted in even more disparate findings, that is, males killed in homicide-suicides were nearly 4 yr. younger than male victims of homicide. Liem, *et al.*'s study (2009) in The Netherlands may offer some explanation for the males involved in homicide-suicides being relatively younger than victims of homicides not followed by suicide. They reported that "more than half of the victims [in homicide-suicides] are children who died in a filicide-suicide or a familicide-suicide" (p. 111).

Females killed in homicide-suicides had a mean age 3 yr. greater than female victims of other homicides. Liem, *et al.* (2009) reported the mean age of the homicide victims in uxoricide-suicides was 43 yr. and in filicide-suicides 5 yr. These results suggest the relatively younger mean age

of males and older mean age of females killed in homicide–suicides may be representative of populations which differ by three or four years from the mean ages of male and female victims of homicide, respectively. In addition, the present findings are consistent with those of Liem, *et al.* (2009) in that “the age of the victims depended strongly on the type of homicide–suicide . . .” (p. 111).

When considering race, Blacks killed in homicide–suicides had a mean age 2 yr. less than Black victims of other homicides. Perhaps more striking were reports for sex and race in mean differences in age. White males killed in homicide–suicides had a mean age 5 yr. less than White male victims of homicides not followed by suicides. Black males killed in homicide–suicides had a mean age 4 yr. less than Black male victims of homicides not followed by suicides. White females killed in homicide–suicides had a mean age 2 yr. greater than female victims of homicides not followed by suicides. In contrast, Berman (1979) reported that “those who are killed [in homicide–suicides] are considerably more likely to be white, female, younger than and known to the murderer, and consistently less likely to have been drinking at the time of the murder than nondyadic homicide victims” (p. 19). When both sex and race are considered, the mean age for those killed in homicide–suicides relative to those killed in homicides not followed by suicides may represent subpopulations with different mean ages of victims.

A victim-based historical analysis should contribute to better understanding of the characteristics of subpopulations of homicide victims. Further research should compare these historic data with more recent data, e.g., data available at the National Violent Death Reporting System, although data in this system are available for fewer states (17 states for 2003–2005). Mean age by sex, race, or both sex and race might provide interesting comparisons. Ages and other characteristics of these subpopulations may have value for planning preventive measures.

#### REFERENCES

- BERMAN, A. (1979) Dyadic death: murder–suicide. *Suicide and Life-Threatening Behavior*, 9, 15-23.
- CENTERS FOR DISEASE CONTROL AND PREVENTION. (1991) Current trends homicide followed by suicide: Kentucky, 1985–1990. *Morbidity and Mortality Weekly Report*, 40(38), 652-653, 659.
- FIELD, A. P. (2009) *Discovering statistics using SPSS: (and sex and drugs and rock ‘n’ roll)*. (3rd ed.) Los Angeles: Sage.
- LIEM, M., POSTULART, M., & NIEUWBEERTA, P. (2009) Homicide–suicide in the Netherlands. *Homicide Studies*, 13, 99-123.
- MARZUK, P. M., TARDIFF, K., & HIRSCH, C. S. (1992) The epidemiology of murder–suicide. *The Journal of the American Medical Association*, 267(23), 3179-3183.

- MORRISON, D. E., & HENKEL, R. E. (1969) Significance tests reconsidered. *The American Sociologist*, 4, 131-140.
- RIEDEL, M., & ZAHN, M. (1994) Trends in American homicide, 1968–1978: victim-level supplementary homicide reports. Compiled by the Center for the Study of Crime, Delinquency, and Corrections, Southern Illinois Univer., Carbondale. ICPSR ed. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [producer and distributor]. DOI: 10.3886/ICPSR08676 [Computer file]
- SELKIN, J. (1976) Rescue fantasies in homicide–suicide. *Suicide and Life-Threatening Behavior*, 6, 79-85.
- STACK, S. (1997) Homicide followed by suicide: an analysis of Chicago data. *Criminology*, 35, 435-453.
- TROCHIM, W. (2005) *Research methods: the concise knowledge base*. Cincinnati, OH: Atomic Dog.
- STUEDEMUND, A. H., & CASSIDY, H. J. (1987) *Using econometrics: a practical guide*. Boston, MA: Little, Brown, & Co.

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