

Homicide: A Leading Cause of Death for Black Non-Hispanics in Wisconsin

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ABSTRACT

Importance: Wisconsin has the second-highest Black homicide rate in the country, reporting a rate of 37.57 deaths per 100,000 Black non-Hispanic Wisconsinites. Meanwhile, White non-Hispanics experience a homicide rate of 2.0 deaths per 100,000.

Objective: The data identify a public health disparity that deserves further investigation. This study seeks to detail the mortality rate of all-cause homicide, firearm-related homicide, non-firearm-related homicide, and legal intervention firearm-related homicide; leading causes of death; average age of death; and years of potential life lost (YPLL) between White non-Hispanics and Black non-Hispanics in Wisconsin during 2000-2017.

Design: Wisconsin homicide rates, ranked leading causes of death, and average age of death were obtained through the Wisconsin Department of Health Services via the Wisconsin Interactive Statistics on Health (WISH) Query System. National data were obtained through the Centers for Disease Control and Prevention's Web-based Injury Statistics Query and Reporting System (WISQARS). Homicide rates, ranked leading causes of death, average age of death, and YPLL were compared by mechanism of injury, county of residence, and race and ethnicity.

Participants and Exposures: The entire population of Black non-Hispanic Americans and White non-Hispanic Americans during 2000-2017 was included. For comparison, this was narrowed to the population of Black non-Hispanic Wisconsinites and White non-Hispanic Wisconsinites during 2000-2017. Exposure groups include all homicide victims during 2000-2017.

Main Outcomes and Measures: We hypothesized that Black non-Hispanic Wisconsinites would have a significantly worse burden of disease compared to White non-Hispanic Wisconsinites, as well as Black non-Hispanic Americans.

Results: This study found that firearm-related homicide rates for Black non-Hispanics compared to White non-Hispanics were 14.6 times greater in Milwaukee, 29.9 times greater in Wisconsin, and 13.0 times greater in urban counties of the United States. Firearm-related homicide is the second-leading cause of death for Black non-Hispanics in Milwaukee and the fourth-leading cause of death in Wisconsin. YPLL per person for Black non-Hispanic victims of firearm-related homicide are 36.83 years in Milwaukee and 37.04 years in Wisconsin.

Conclusion and Relevance: Our findings strongly suggest that Black non-Hispanic Wisconsinites endure a significantly worse burden of firearm-related homicide compared to White non-Hispanic Wisconsinites and Black non-Hispanic Americans. This study demonstrates a significant disparity in firearm-related homicide that should inspire policy discussion.

INTRODUCTION

While health outcomes have been improving in the general population, Black Americans continue to be diagnosed with chronic disease more frequently, earlier in life, and have shorter life expectancies as a result.¹ This health disparity is not limited to chronic disease. According to the Centers for Disease Control and Prevention, homicide rates in the United States are highest for non-Hispanic Black men.² Wisconsin consistently ranks among the worst states for racial inequality in indicators such as poverty, unemployment, income inequality, educational attainment, incarceration, and median household income.² A recent study concluded that Wisconsin has the second-highest Black homicide rate in the nation, second only to Missouri, with a total of 144 deaths in 2016 – a rate of 37.57 deaths per 100,000

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Black non-Hispanic Wisconsinites.³ These studies identify a public health disparity that demands further investigation. According to the Violence Policy Center, 91% of these homicides involving Black non-Hispanics in Wisconsin were firearm related – 75% of which involved handguns.³ Further, 66% of victims were killed by someone they knew, and 71% of incidents were not related to the commission of any other felony; rather, they were the result of escalated arguments between the victim and the offender.³

This research outlines a foundation of a public health disparity in Wisconsin and indicates a need to better understand its related health effects. Few studies have described the extent of racial disparity among homicide victims within Wisconsin. To further elucidate the details of this health disparity, this study seeks to detail and compare the mortality rate of all-cause homicide, firearm-related homicide, non-firearm-related homicide, and firearm-related legal intervention; leading causes of death; average age of death; and years of potential life lost (YPLL) between White non-Hispanics and Black non-Hispanics in Wisconsin since the turn of the century. We hypothesize that the degree to which homicide—and firearm-related homicide specifically—contributes to leading causes of death will be greater for Black Wisconsinites and that YPLL will be greater for Black Wisconsinites.

METHODS

Data on homicide rates, ranked leading causes of death, and average age of death in Wisconsin were obtained from the Wisconsin Department of Health Services via the Wisconsin Interactive Statistics on Health (WISH) Query System.⁴ National homicide rates, ranked leading causes of death, and average age of death were obtained through the Centers for Disease Control and Prevention’s Web-based Injury Statistics Query and Reporting System (WISQARS).⁵ Homicide rates, ranked causes of death, and average age of death were compared by county of residence, and race and ethnicity. Ranked leading causes of death and average age of death for all-cause homicide were reported in “Broad Groups” of 50 Cause-of-Death ICD-10 categories, whereas ranked leading causes of death and average age of death for firearm-related and non-firearm-related homicide were reported in “Detailed Groups” of 113 Cause-of-Death ICD-10 categories. National data on firearm-related homicide ranked leading cause of death and average age of death are not available from WISQARS. However, direct queries for YPLL are available from WISQARS.

Queries from WISH and WISQARS collected information on all homicide deaths in the population aged 10-64 years during 2000-2017. The timeframe was selected to include all data available from this century at the time this study was conducted. Variables of interest included the mechanism of injury, race and ethnicity, and region of residence. These variables were divided into discrete categories: mechanism of injury by all-cause homicide, firearm-related homicide, non-firearm-related homicide, and firearm-related legal intervention; race and ethnicity by White

Table 1. Age-adjusted Mortality Rate (per 100,000 people) According to Mechanism of Injury, Region of Residence, and Race

Mechanism of Injury	Region of Residence	Race	Adjusted Rate	
Firearm Homicide	Milwaukee	Black non-Hispanic	34.679 36.733 38.787	
		White non-Hispanic	2.153 2.524 2.895	
	Wisconsin	Black non-Hispanic	26.358 27.842 29.326	
		White non-Hispanic	0.8563 0.932 1.007	
		Urban US	Black non-Hispanic	22.898 23.034 23.171
			White non-Hispanic	1.756 1.774 1.792
Legal Intervention	Milwaukee	Black non-Hispanic	0.275 0.472 0.669	
		White non-Hispanic	0.081 0.111 0.142	
	Wisconsin	Black non-Hispanic	0.263 0.452 0.641	
		White non-Hispanic	0.088 0.115 0.141	
		Urban US	Black non-Hispanic	0.322 0.338 0.355
			White non-Hispanic	0.122 0.127 0.131
All-cause Homicide	Milwaukee	Black non-Hispanic	41.171 43.404 45.637	
		White non-Hispanic	3.425 3.885 4.345	
	Wisconsin	Black non-Hispanic	31.596 33.217 34.838	
		White non-Hispanic	1.532 1.632 1.731	
		Urban US	Black non-Hispanic	27.74 27.890 28.04
			White non-Hispanic	3.043 3.066 3.09
Non-firearm Homicide	Milwaukee	Black non-Hispanic	5.795 6.671 7.546	
		White non-Hispanic	1.089 1.361 1.633	
	Wisconsin	Black non-Hispanic	4.723 5.375 6.027	
		White non-Hispanic	0.6346 0.700 0.7653	
		Urban US	Black non-Hispanic	4.793 4.855 4.918
			White non-Hispanic	1.277 1.292 1.308

non-Hispanics and Black non-Hispanics; age by groups 10-17, 18-19, 20-24, 25-34, 35-44, 45-54, and 55-64 years old; and region of residence by urban, suburban, and rural counties of Wisconsin. Regions of residence were classified by the National Center for Health Statistics (NCHS) Urban-Rural Coding 2013, where counties given a code of 1 were labeled urban; counties given a code of 2, 3, or 4 labeled suburban; and counties given a code of 5 or 6 labeled rural. In our assessment of homicide rates in Wisconsin, special consideration was given to Milwaukee County as the highest rates of homicide in the state occur in this county.

Statistical Analysis

We calculated standardized age-adjusted rates of homicide deaths within each population of interest. The reference population used for standardization was derived internally from age-specific population sizes summed over the time period in question. YPLL were calculated as a rate per 100,000 persons. All analyses were conducted using STATA (StataCorp LLC, College Station, TX; version 15).

RESULTS

The population of Milwaukee County during 2000-2017 aged 10-64 was 56.5% White non-Hispanic and 26.8% Black non-Hispanic. The population of Wisconsin for the same time period and age group was 84.6% White non-Hispanic and 6.5% Black non-Hispanic, while the population of urban counties in the

United States was 45.8% White non-Hispanic and 10.2% Black non-Hispanic, respectively.

We found that the all-cause homicide rates for Black non-Hispanics were 11.2 times greater in Milwaukee County, 20.4 times greater in Wisconsin, and 9.1 times greater in urban counties of the United States than the all-cause homicide rate for White non-Hispanics. This disparity was even more staggering when focusing on firearm-related homicide, as rates for Black non-Hispanics were 14.6 times greater in Milwaukee County, 29.9 times greater in Wisconsin, and 13.0 times greater in urban counties of the United States than the firearm-related homicide rate for White non-Hispanics. Conversely, the racial disparity for non-firearm-related homicide was less severe—albeit still significant—with rates for Black non-Hispanics 4.9 times greater in Milwaukee County, 7.7 times greater in Wisconsin, and 3.8 times greater in urban counties of the United States than the non-firearm-related homicide rate for White non-Hispanics (Table 1).

In regard to firearm-related deaths in the event of legal interventions, mortality rates for Black non-Hispanics were 4.3 times greater in Milwaukee County, 3.9 times greater in Wisconsin, and 2.7 times greater in urban counties of the United States than the legal intervention firearm-related homicide rate for White non-Hispanics (Table 1). It should be noted that 22 Black non-Hispanic Wisconsinites and 72 White non-Hispanic Wisconsinites died due to firearm-related legal intervention during 2000-2017.

This racial disparity in disease burden is also underscored by the ranked causes of death. For Black non-Hispanics aged 10-64 during 2000-2017, firearm-related homicide is the second-leading cause of death in Milwaukee County and fourth in Wisconsin. In ranked leading causes of death for Black non-Hispanics in Milwaukee County, firearm-related homicide is the leading cause of death for those aged 10-34, and the third-leading cause of death for those 35-44 years old. For White non-Hispanics aged 10-64 during 2000-2017, firearm-related homicide for ages 10-64 is the 25th cause of death in Milwaukee County and 47th in Wisconsin (Table 2). Lastly, the racial disparities in disease burden is further exemplified by the average age of death and YPLL. Black non-Hispanics were found to have an additional 7.4 YPLL compared to White non-Hispanics in Milwaukee County and an additional 9.5 YPLL in Wisconsin due to firearm-related homicide (Table 3).

DISCUSSION

This study corroborates previous studies that have indicated increased risk of homicide and, to a greater degree, firearm-related homicide for Black non-Hispanics.^{3,6} This study also indicates that Black non-Hispanics in Milwaukee County and Wisconsin have a greater risk of homicide, and an even greater risk of firearm-related homicide, when compared nationally and to White non-Hispanics. In counties with larger Black populations, Black individuals

Table 2. Ranked Leading Cause of Death Aged 10-64, 2000-2017, According to Mechanism of Injury, Region of Residence, and Race

Mechanism of Injury	Region of Residence	Race	Cause of Death Ranking
Firearm Homicide (113 ICD-10 categories)	Milwaukee	Black non-Hispanic	2
		White non-Hispanic	25
	Wisconsin	Black non-Hispanic	4
		White non-Hispanic	47
All-cause Homicide (50 ICD-10 categories)	Milwaukee	Black non-Hispanic	5
		White non-Hispanic	10
	Wisconsin	Black non-Hispanic	5
		White non-Hispanic	14
		Urban US	Black non-Hispanic
			White non-Hispanic

Table 3. Average Age of Death and Years of Potential Life Lost Per Person 2000-2017 According to Mechanism of Injury and Race

Cause of Death	Region of Residence	Race	Average Age of Death ^a		YPLL	
Firearm Homicide	Milwaukee	Black non-Hispanic	27.59	28.17	28.75	36.83
		White non-Hispanic	33.29	35.55	37.80	29.45
	Wisconsin	Black non-Hispanic	27.41	27.96	28.51	37.04
		White non-Hispanic	36.13	37.45	38.77	27.55
	Urban US	Black non-Hispanic	—	—	—	35.94
		White non-Hispanic	—	—	—	27.37
All-cause Homicide	Milwaukee	Black non-Hispanic	28.46	29.13	29.80	35.87
		White non-Hispanic	36.40	38.59	40.77	26.41
	Wisconsin	Black non-Hispanic	28.13	28.76	29.40	36.24
		White non-Hispanic	35.77	36.89	38.01	28.11
		Urban US	Black non-Hispanic	—	—	—
			White non-Hispanic	—	—	—

Abbreviations: YPLL, years of potential life lost; WISH, Wisconsin Interactive Statistics on Health; WISQARS, Web-based Injury Statistics Query and Reporting System.

^aAverage age of death is reported with surrounding 95% confidence limits as left/right subscripted values. Values not reported were not available through WISH or WISQARS query systems.

are at greater risk of becoming victims of homicide. We propose that this injustice is the product of government neglect of a public health crisis disproportionately affecting the Black community. State and local governing bodies, as well as law enforcement, have failed to implement solutions for at least 18 years. This racial disparity in disease burden is most prevalent in younger populations, contributing to the substantial differences in YPLL. A young Black non-Hispanic person living in Milwaukee County is 14.6 times more likely to die from gunfire 7.4 years earlier than a White non-Hispanic person living within the same ZIP code.

The same racial inequity is also present in firearm-related deaths in the setting of law enforcement. This study corroborates previous research that defined police brutality as a social determinant of health and further outlined that Blacks are significantly more likely to experience police brutality than are Whites, as whiteness affords protection against police use of force.⁷ With growing national recognition of the racial injustice that exists

in police brutality, we must also acknowledge that Black non-Hispanics in Wisconsin are subject to a higher rate of mortality secondary to police shootings compared to the national average. These findings provide another perspective from which to view the pervasive epidemic that is systemic racism.

Our current health care infrastructure is established in such a way that marginalized racial and ethnic populations in the United States have shorter lifespans, greater burden of disease, earlier onset and more aggressive progression of disease, and less access to health care service.^{1,2,8-10} The disenfranchisement of Blacks is especially prominent in Wisconsin where, despite an overall highly ranked health care system nationally, they have the highest excess death rates at every stage of life.^{11,12} It is essential that we acknowledge the role of racism in creating and perpetuating health disparities.

This study demonstrates a significant disparity in firearm-related homicide. Black non-Hispanics in Milwaukee County are experiencing a disproportionate burden of firearm-related homicide as compared with their White non-Hispanic counterparts. This health inequity serves to further entrench poor health outcomes in the Black community. Health inequity is a structural phenomenon of our current health care system. The findings presented here demonstrate an issue of social justice – one that must be mitigated and prevented in order to achieve health equity.

CONCLUSION

Ensuring health equity is a priority for population health. This study revealed significant disparities in firearm homicide among Black non-Hispanic Wisconsinites. Given this significant inequity, efforts to achieve health equity must include a focus on firearm-related injury and firearm homicide, in order to reduce these injuries and deaths among marginalized populations.

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