



Suicide Methods in Virginia: Patterns by Race, Gender, Age, and Birthplace

A Report from the Virginia Violent Death
Reporting System

2003-2008

Commonwealth of Virginia
Virginia Department of Health
Office of the Chief Medical Examiner
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Introduction

Traditional statistical reports of fatal suicide methods do not reflect methods used by subpopulations. For example, a report on suicide in Virginia would note that 57% of suicides were by firearm. This statistic describes suicides overall, but obscures method choices made by many subpopulations. Firearms are used in 57% of all suicides largely because most Virginia suicide victims are White males (66%) and most of these White males (64%) commit suicide by firearm. The proportion of persons who are not White males and use a firearm is 42%.

Examining the influence of demographic traits on method choice reveals variety within and between subpopulations, and provides useful information for understanding how different types of people commit suicide. If successful suicide prevention strategies address method choice and means restriction,¹ it is important to know how social traits affect suicide method of fatal injury.

The Database

This report examines fatal suicide method choice for 5,149 persons who died between the years 2003-2008. All persons in the database were Virginia residents at the time of suicide. Suicide method variation by race, gender, age and birthplace (as either U.S.-born or foreign-born) is analyzed.

Trends over the six-year time period are not presented or discussed here. While some groups had minor fluctuations in chosen methods over time, there were no distinct patterns that suggested a notable difference in trends.

All data are provided by the Virginia Violent Death Reporting System (VVDRS). Virginia is one of eighteen states participating in the National Violent Death Reporting System (NVDRS).² In the NVDRS database, each suicide victim is recorded as using one or more methods of fatal injury.³ Data entered into the VVDRS are abstracted from several sources, primarily the Virginia Office of the Chief Medical Examiner, law enforcement, the Virginia Division of Vital Records, and the Virginia Department of Forensic Science.

Overall Results

The most common suicide method was a firearm (57%). The next most common method was hanging or suffocation (19%) followed by poison (18%). Most suicide victims (94%) chose either a firearm, hanging/suffocation, or poison. Any discussion of method choice is therefore primarily about differences in use of these three methods.

Table 1 shows all methods represented in this database.

¹ "Means restriction" refers to the practice of limiting or removing access to certain lethal methods as a form of suicide prevention.

² To read more about the NVDRS, see <http://www.cdc.gov/ViolencePrevention/NVDRS/index.html>. The NVDRS coding manual, which defines the methods discussed in this report, is available at <http://www.cdc.gov/ncipc/pub-res/nvdrs-coding/VS2/default.htm>.

³ Most victims (99%) in this database used only one method.

Table 1. Method of Fatal Injury for Suicide Victims in Virginia, 2003-2008*

	#	%
Firearm	2,917	56.7
Hanging/Suffocation	993	19.3
Poison	931	18.1
Fall	100	1.9
Sharp Instrument	96	1.9
Drowning	73	1.4
Motor Vehicle	32	0.6
Fire/Burns	19	0.4
Other Transport Vehicle	16	0.3
Non-Powder Firearm	2	<0.1
Intentional Neglect	1	<0.1
Other	11	0.2
Total	5,149	-

* More than one method may be reported per suicide victim.

Race^{4,5,6}

Table 2 shows method choice by race.

Table 2. Method of Fatal Injury by Selected Race for Suicide Victims in Virginia, 2003-2008*

	White		Black		Asian	
	#	%	#	%	#	%
Firearm	2,571	57.8	307	54.3	30	23.8
Hanging/Suffocation	793	17.8	141	25.0	57	45.2
Poison	851	19.1	62	11.0	17	13.5
Fall	74	1.7	15	2.7	10	7.9
Sharp Instrument	81	1.8	8	1.4	7	5.6
Drowning	50	1.1	19	3.4	4	3.2
Motor Vehicle	24	0.5	8	1.4	0	0.0
Fire/Burns	14	0.3	4	0.7	1	0.8
Other Transport Vehicle	14	0.3	1	0.2	1	0.8
Non-Powder Firearm	2	<0.1	0	0.0	0	0.0
Intentional Neglect	0	0.0	1	0.2	0	0.0
Other	9	0.2	2	0.4	0	0.0
Total	4,445	-	565	-	126	-

*More than one method may be reported per suicide victim.

Whites and Blacks chose firearms with similar frequency. Blacks favored hanging/suffocation more often than Whites, while Whites chose poison more often than Blacks. Asians are distinguished from other races by selecting hanging/suffocation most often, and at almost twice the frequency of firearms.

⁴ Six persons are excluded from this point forward as a single race could not be determined for them.

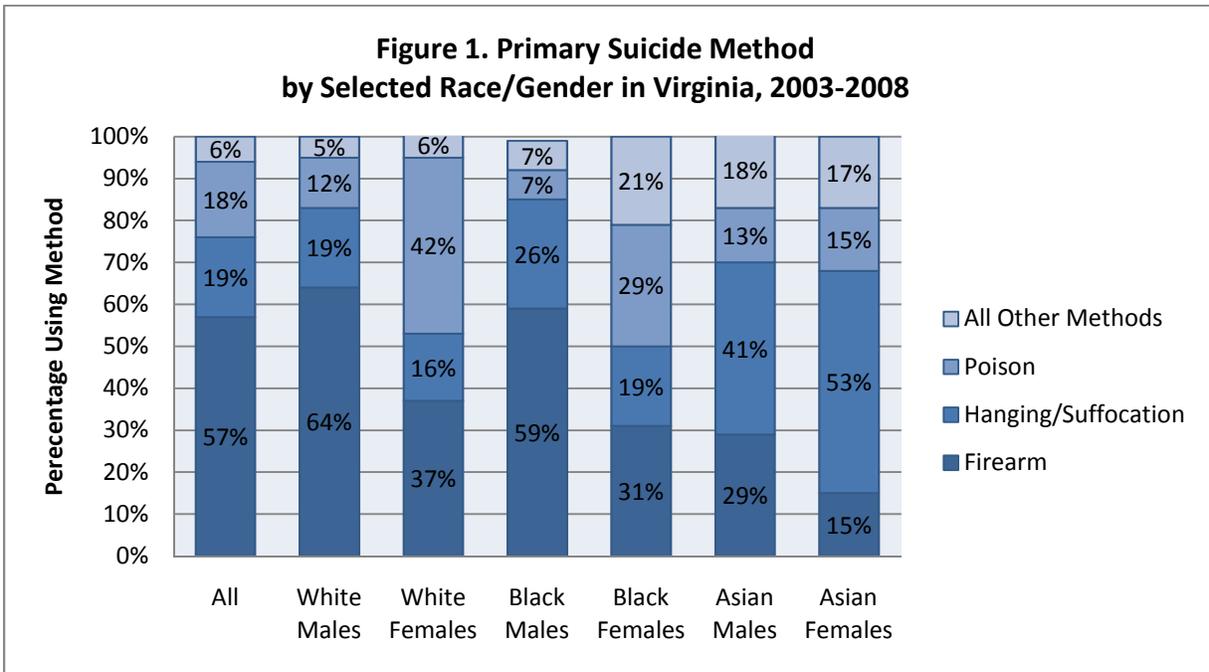
⁵ Due to the relatively small number of Native Americans (n=7) in the database, this race is not discussed.

⁶ Hispanics are included in the race categories. Most Hispanics in the sample (89%) were identified as being White.

Within each racial group, most suicide victims used at least one of the three most common methods - firearm, hanging/suffocation, or poison. The proportion using at least one of these three methods was lower for Asians (83%) than for Blacks (90%) or Whites (95%).

Race and Gender

Within each race, gender can create notable differences in method choice. Figure 1 displays overall differences among selected race/gender groupings. Of the subpopulations in this figure, Black females, Asian males, and Asian females are the only groups where a substantial percentage used methods other than firearms, hanging/suffocation, or poison.



White male firearm use was 1.7 times that of White females, while White females chose poison 3.5 times more often than White males. Hanging/suffocation for White males and females is more similar.

The gender differences for Black males and females are analogous to Whites. Firearms were more often used by Black males, and Black females poisoned themselves about four times as often as Black males. Black males and females are also more similar to each other in choice of hanging/suffocation, though not as closely aligned as White males and females.

Similar to Whites and Blacks (but to a lesser degree), Asian males chose firearms more often than Asian females. However, Asian males and females were nearly identical in use of poison, which is a defining gender difference for other races. The contrast between Asian males and females for hanging/suffocation is more pronounced than for other races and the gender patterns are reversed: Asian females chose this method more often than Asian males.

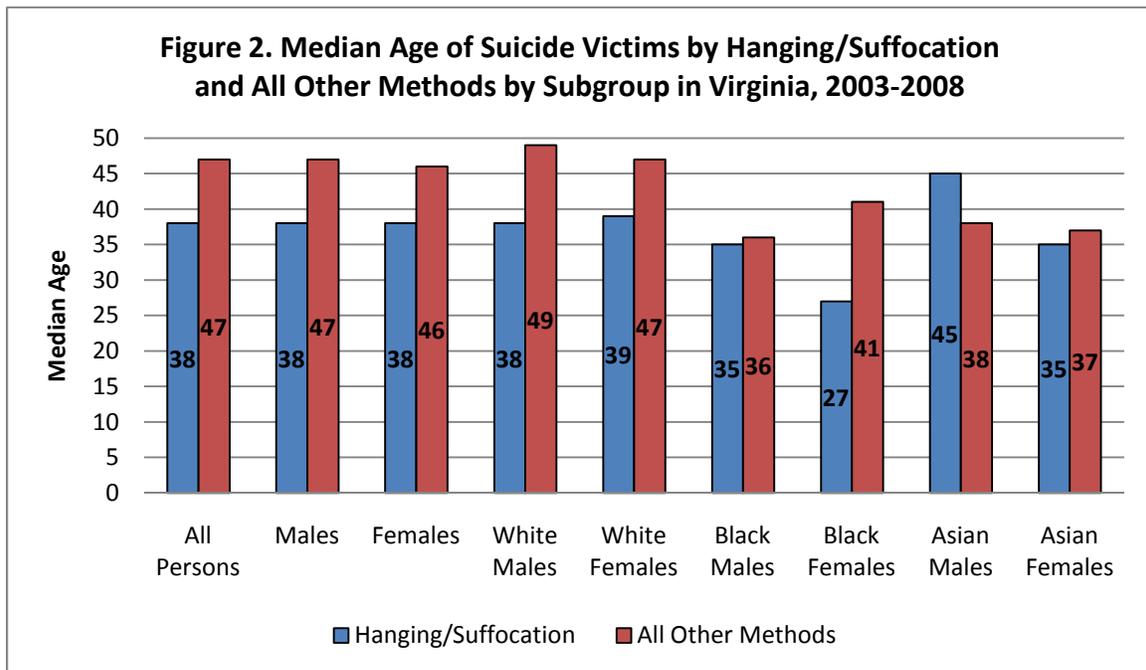
For Whites and Blacks, method choices are more aligned with gender than with race; White and Black males make similar method choices, as do White and Black females. Asian males and females, however,

do not resemble their counterparts of other races. Asian males resemble Asian females more so than males of other races, especially in regards to firearms and hanging/suffocation. Asian females are unlike other females as their primary method was hanging/suffocation. Additionally, Asian females chose poison as often as firearms, and well below the frequency that poison was selected by females of other races.

Age

Age appears to impact method choice for all persons and for certain subpopulations. The overall median age for all suicides was 46, and the median age for persons who chose methods such as firearms, poison, and drowning is relatively similar.

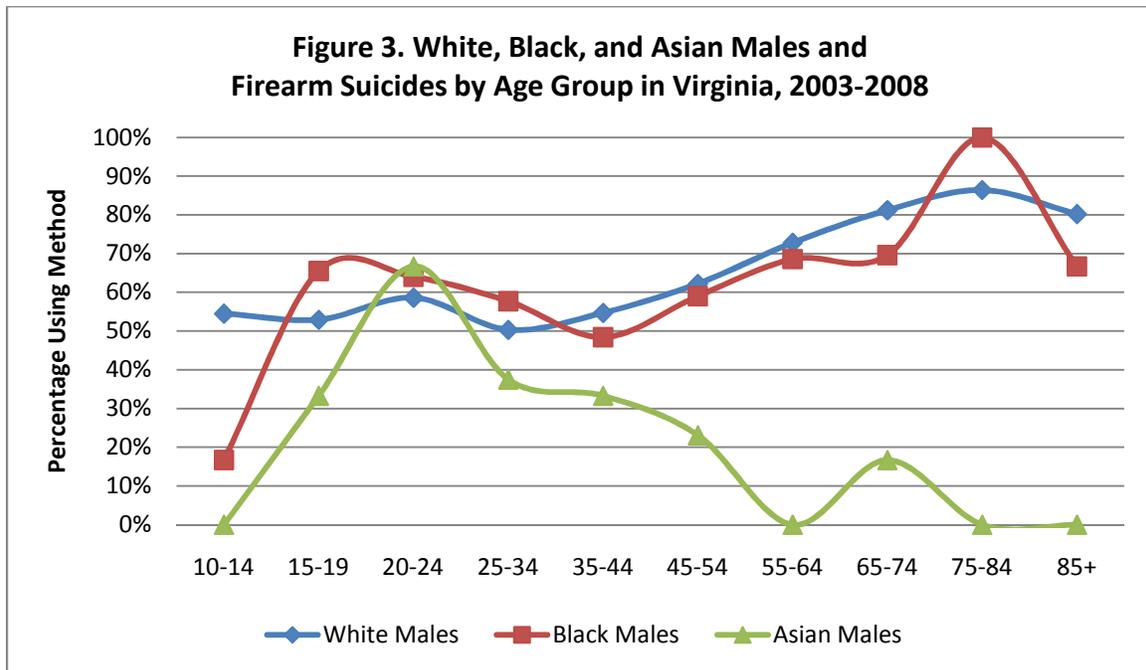
One method that shows a clear difference in median age is hanging/suffocation. The median age for persons who chose hanging/suffocation is 38, and the median age for those who chose other methods is 47. Figure 2 shows median ages for those who used hanging/suffocation and those who chose other methods.



This pattern of younger persons choosing hanging/suffocation endures for all subgroups except Asian males. The median age of Asian males who opted for hanging/suffocation is seven years *older* than Asian males who use other methods.

Males and Age

Figure 3 shows use of firearms in suicide for White, Black, and Asian males across the lifespan.



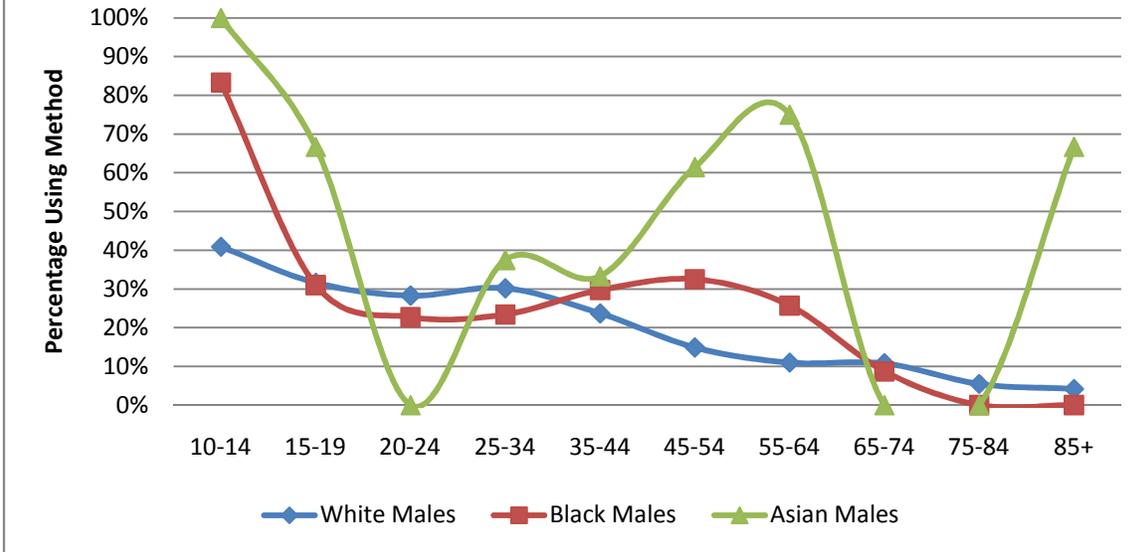
Firearms are the primary method for White males throughout life. Every age group for White males uses a firearm in 50% of suicides or greater; White males are the only subgroup where a firearm is the method used by half or more of every age group. Black males also demonstrate a clear preference for firearms. The prevalence of firearm use among Black males begins lower than for White males, but quickly increases, reaching 66% at ages 15-19, and then dropping below 50% for only one age group.

White and Black males who commit suicide by firearm differ in terms of median age. The median age of White males who chose a firearm is 50, a few years above the overall White male median age of 47, and eight years older than White males who chose other methods (median of 42). For Black males, whose median age is 35, the median age of a person committing suicide by firearm is 36; Black males who used other methods have a median age of 35.

Asian male firearm suicide peaks early, compared to their White and Black counterparts, at ages 20-24 (67%). Asian male firearm use declines with age after ages 20-24. While the median age of an Asian male who commits suicide is 43, the median age of an Asian male who uses a firearm is 28, or 15 years younger than the overall median.

The second most common method for males is hanging/suffocation. Combined, firearms and hanging/suffocation are used in 76% of male suicides. Figure 4 shows use of hanging/suffocation for White, Black, and Asian males by age group.

Figure 4. White, Black, and Asian Males and Hanging/Suffocation Suicides by Age Group in Virginia, 2003-2008

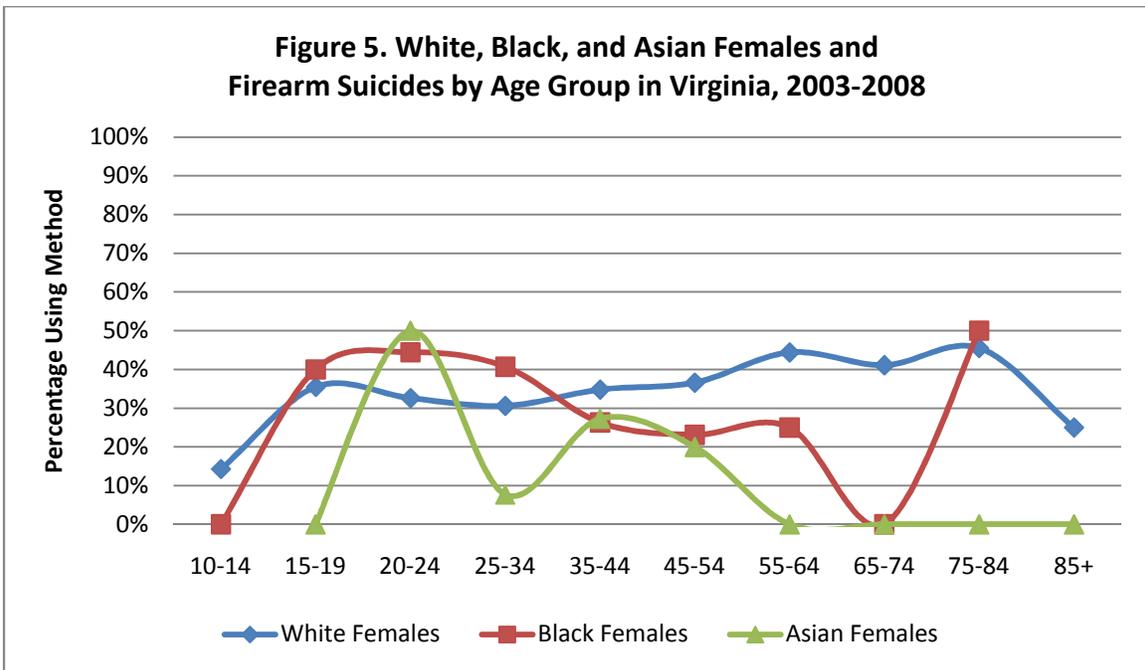


White and Black males show a similar trend; hanging/suffocation is most common with younger persons and then begins to decline, generally, with age. For Asian males, use of this method fluctuates throughout the life span with no clear pattern.

Females and Age

Figure 5 shows firearm suicides by age group for White, Black, and Asian females.

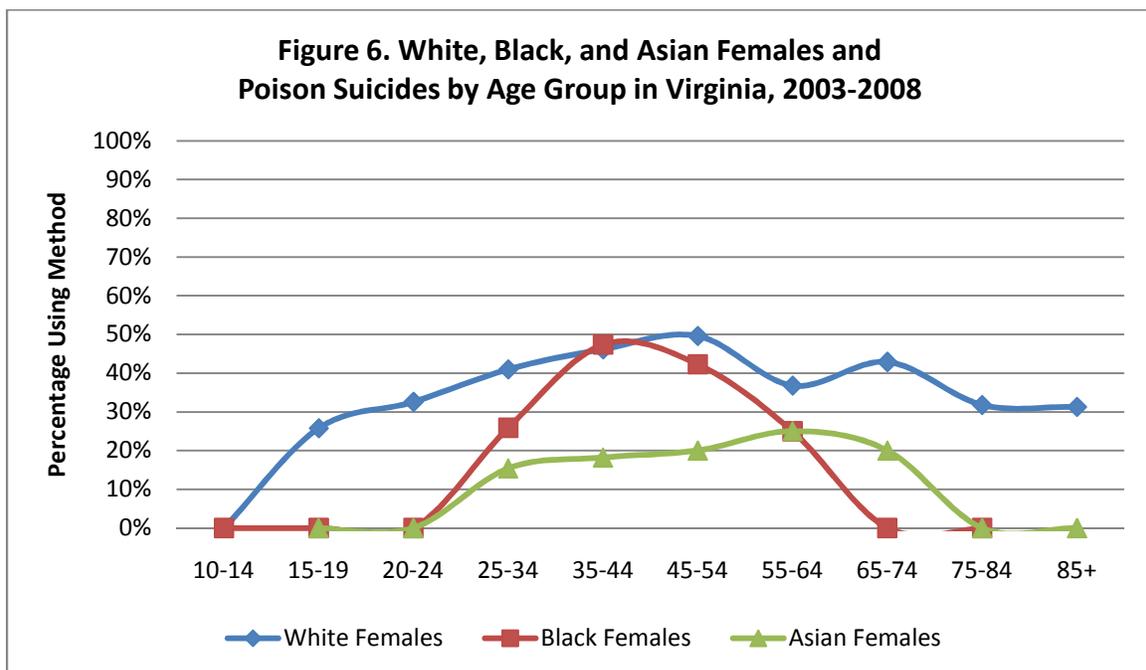
Figure 5. White, Black, and Asian Females and Firearm Suicides by Age Group in Virginia, 2003-2008



White females have a relatively steady percentage of persons choosing a firearm across the lifespan; between 30% and 40% for ages 15-54, and between 40% and 50% for ages 55-84. In other words, the pattern of suicide by firearm across the lifespan is analogous for White females and White males. The median ages of White females who used a firearm (48) and White females who used some other method (45) are relatively close.

Black and Asian females show a similar trend; firearm suicides tend to decrease with age, with some exceptions. The median age of Black females who used a firearm (30) is eleven years younger than those who used other methods (41); for Asian females these median ages are identical (36).

Figure 6 shows poison suicides by White, Black, and Asian females across the lifespan.



The pattern of poison use for White females looks remarkably similar to their pattern of firearm use; as White females age they tend to choose poison more frequently, and this holds relatively steady for most of the life span. The median ages of White females who committed suicide with poison and those who chose other methods is identical (46).

Black females have no poison suicides in the early (under 24) and later (over 65) age groups. In between, use of poisons increases, peaks at ages 35-44 (47%) and then declines. The median age of a Black female who used poison (43) is eight years older than those who chose some other method (35). Asian females follow a similar pattern as Black females: no poisoning suicides in the oldest and two youngest age groups, with a general incline and decline in between.

Birthplace

A further issue to explore is how cultural norms may impact suicide methods. VVDRS collects data on where persons were born. For this analysis, birthplace was divided into two mutually exclusive categories – either in the U.S. or in a foreign country/territory.

There are limits on the usefulness of birthplace information. Data on duration of residence in the birthplace or in the U.S. are not available. Persons born in a foreign country or territory may have been raised there by parents who were from that place, or may have been born on a military base to U.S.-citizen parents and lived there for a short time. Birthplace, therefore, is used as an *approximation* of the broad cultural differences for which this database has no other measure.

One common thread among foreign-born suicide victims is a Northern Virginia⁷ locality of residence. Most foreign-born victims (60%) lived in a Northern Virginia locality; by contrast, 15% of U.S.-born victims lived in this area of the state.

Whites and Birthplace

An important factor in understanding differences between U.S.-born and foreign-born Whites is Hispanic status. As a whole, most Whites (94%) were U.S.-born.⁸ Of the Whites who are foreign-born, 32% are Hispanic, compared with just 1% of U.S.-born Whites.⁹ Analysis of Whites and birthplace, therefore, is entangled with differences between Hispanics and non-Hispanics.

Foreign-born White Hispanics and White non-Hispanics come from different countries. Most foreign-born White non-Hispanics are from European countries (72%) most notably Great Britain (14%) and Germany (27%). White Hispanics who are foreign-born come primarily from Central and South America (78%), most commonly Mexico (18%) and El Salvador (27%).

Overall, White Hispanics and White non-Hispanics show some notable differences in method choices. White non-Hispanics use firearms 1.6 times more often and poison 3.5 times more often than White Hispanics, while White Hispanics use hanging/suffocation almost three times as frequently.

When comparing birthplace for White non-Hispanics, these differences are not as noticeable and the pattern does not hold as well. U.S.-born White non-Hispanics use firearms about 1.3 times as often, while foreign-born White non-Hispanics use hanging/suffocation and poison about 1.3 times as often.

White Hispanic suicide victims differ in method choices by birthplace. U.S.-born White Hispanics use firearms 1.5 times more often and poison 1.9 times more often than foreign-born White Hispanics. Foreign-born White Hispanics chose hanging/suffocation 1.4 times as often as U.S.-born White Hispanics.

⁷ “Northern Virginia” is defined as the counties of Arlington Fairfax, Loudoun, and Prince William, and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

⁸ Birthplace was unknown for 42 Whites (1%).

⁹ Most persons identified as Hispanic were also identified as White (89%).

Blacks and Birthplace

Of the 565 Black suicide victims, most (94%) were born in the U.S., and 5% were born in a foreign country or territory.¹⁰ Most foreign-born Black suicide victims were from African countries (62%), most notably Ethiopia (35%). The majority of these persons (69%) lived in Northern Virginia localities.

As with Whites, U.S.-born Black suicide victims chose firearms more often than those born abroad (56% and 38%, respectively), while those who are foreign-born use hanging/suffocation more often than their U.S.-born counterparts (38% and 24%, respectively). These differences persist when gender is considered, but are more pronounced among women.

Asians and Birthplace

Asian suicide victims present a unique opportunity to examine the influence of another culture on their method choices, because the majority of these persons (87%) were born outside of the U.S., and most (96%) were born in Asian countries.

The birthplaces of the foreign-born Asians represent 20 countries and territories; the most common were Korea, Vietnam, India, China, and the Philippines.¹¹ Nearly three-fourths (72%) of the foreign-born Asians in this database were residents of Northern Virginia localities.¹² Similarly, 71% of U.S.-born Asians in this database lived in a Northern Virginia locality.

Table 3 compares method choice by birthplace for Asians.

Table 3. Method of Fatal Injury for Asian Suicide Victims by Birthplace in Virginia, 2003-2008*

	U.S.-Born		Foreign-Born		All Asians	
	#	%	#	%	#	%
Firearm	7	41.2	23	21.1	30	23.8
Hanging/Suffocation	5	29.4	52	47.7	57	45.2
Poison	0	0.0	17	15.6	17	13.5
Fall	4	23.5	6	5.5	10	7.9
Sharp Instrument	1	5.9	6	5.5	7	5.6
Drowning	0	0.0	4	3.7	4	3.2
Fire/Burns	0	0.0	1	0.9	1	0.8
Other Transport Vehicle	0	0.0	1	0.9	1	0.8
Total	17	-	109	-	126	-

*More than one method may be reported per suicide victim.

U.S.-born and foreign-born Asian suicide victims made dissimilar method choices. U.S.-born Asians chose firearms almost twice as often as foreign-born Asians. A notably smaller proportion of U.S.-born Asians chose hanging/suffocation than their foreign-born counterparts. Finally, no U.S.-born Asians used poison, compared to 16% of foreign-born Asians. These differences are similar for men and women who are Asian.

¹⁰ Birthplace was unknown for 4 Blacks (1%).

¹¹ "Korea" includes North and South Korea as the Death Certificate often read only "Korea." "China" includes Hong Kong and Taiwan, given historical issues and the debate over Taiwan's independence.

¹² Of all Asians in this database, 63% were foreign-born *and* living in a Northern Virginia locality.

The method choice differences between U.S.-born and foreign-born suicide victims suggest that cultural norms of the birthplace influence method choice. It is unlikely that these differences are related to cultural norms learned in the U.S., as the majority of foreign-born suicide victims lived in the same area of the state. It is also unlikely that the variability is related to access to certain methods. Poison was more common among foreign-born suicide victims who were White non-Hispanic and Asian; access to poisons is not likely linked to birthplace. Firearm access may be increased for U.S.-born suicide victims because of citizenship or alien status (which is not known for persons in this database), but this is doubtful given Virginia's laws on gun ownership.¹³ There are no meaningful "access" issues for hanging/suffocation that would favor one group over another in making this method choice.

Conclusion

Method choice differences by race, gender, age, and birthplace, show that suicide is a phenomenon with variability at the group and individual level. These nuances are lost in traditional statistical reports that paint a broad picture of method choice. Similarly, while this report begins to explore how certain social traits affect method choice, it does not involve other, additionally complicating factors, such as regionality and urban/rural status.

This report is not intended to imply that certain demographic factors *predetermine* method choice, or that individuals will always act predictably within the bounds of the demographic groups to which they were born. If 64% of White males used a firearm then 36% did not; group patterns do not preordain individual choices. However, these results show that method choice is influenced by membership in a larger demographic group, and that social traits provide some predictability of individual behavior. These findings, while acknowledging suicide as an individual act subject to variability, should provide some new considerations for prevention programs.

¹³ Virginia law permits "lawful aliens" to own firearms. <http://www.vsp.state.va.us/Firearms.shtm> (accessed 2/22/11).