



Violent Deaths Reporting System Puerto Rico

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Violent Deaths - Puerto Rico 2022

Editors

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Introduction

The Puerto Rico Violent Death Reporting System (PRVDRS) is an epidemiological surveillance system designed to obtain a complete census of violent deaths in Puerto Rico. The PRVDRS, affiliated to the Puerto Rico Institute of Statistics, began its participation in the National Violent Death Reporting System (NVDRS) in September 2016 through a collaborative agreement funded by the Centers for Disease Control and Prevention (CDC) of the Department of Health and Human Services. By 2017, 40 states, the District of Columbia (D.C.) and Puerto Rico participated in the NVDRS. Since 2018, all 50 states have participated, in addition to D.C. and Puerto Rico.

The PRVDRS collects, consolidates, analyzes, and publishes information on all violent deaths in Puerto Rico. Violent deaths occur mainly by suicide or homicide, but also include deaths from unintentional firearm injuries, deaths due to legal intervention (excluding legal executions), and deaths with undetermined intent.

The documentation of violent deaths is carried out through a collaborative agreement with the Institute of Forensic Sciences, the Puerto Rico Police Bureau, and the Demographic Registry (Vital Statistics) of the Puerto Rico Department of Health.

To learn more about data sources, definitions of violent deaths, circumstances, firearms, data quality and integrity, and mortality rates, please refer to the first edition of the Annual Report of Violent Deaths in Puerto Rico - 2017 available at: <https://www.estadisticas.pr.gov/productos/sistema-de-notificacion-de-muertes-violentas-de-puerto-rico>. Previous annual reports can also be accessed from this website.

Puerto Rico Population – 2022

In 2022, the median age of the population of residents in Puerto Rico was 45 years old. In the male population the median age was 43 years, and in the female population it was 47 years. Table 1 shows the distribution of the population by sex and age groups, while Figure 1 illustrates the population pyramid by age and sex (U.S Census Bureau 2024^a). The proportion of children under 15 years of age (12.6%) is lower than the proportion of the adult population over 59 years of age (30.2%), which reflects the aging of Puerto Rico's population. There is no official classification of race in Puerto Rico; however, in the 2020 Census, 59.0% of Puerto Rico residents identified themselves as white or in combination with another race. Census results indicate that 98.9% of the population in Puerto Rico is Hispanic/Latino and 95.4% Puerto Rican (U.S. Census Bureau, 2020).

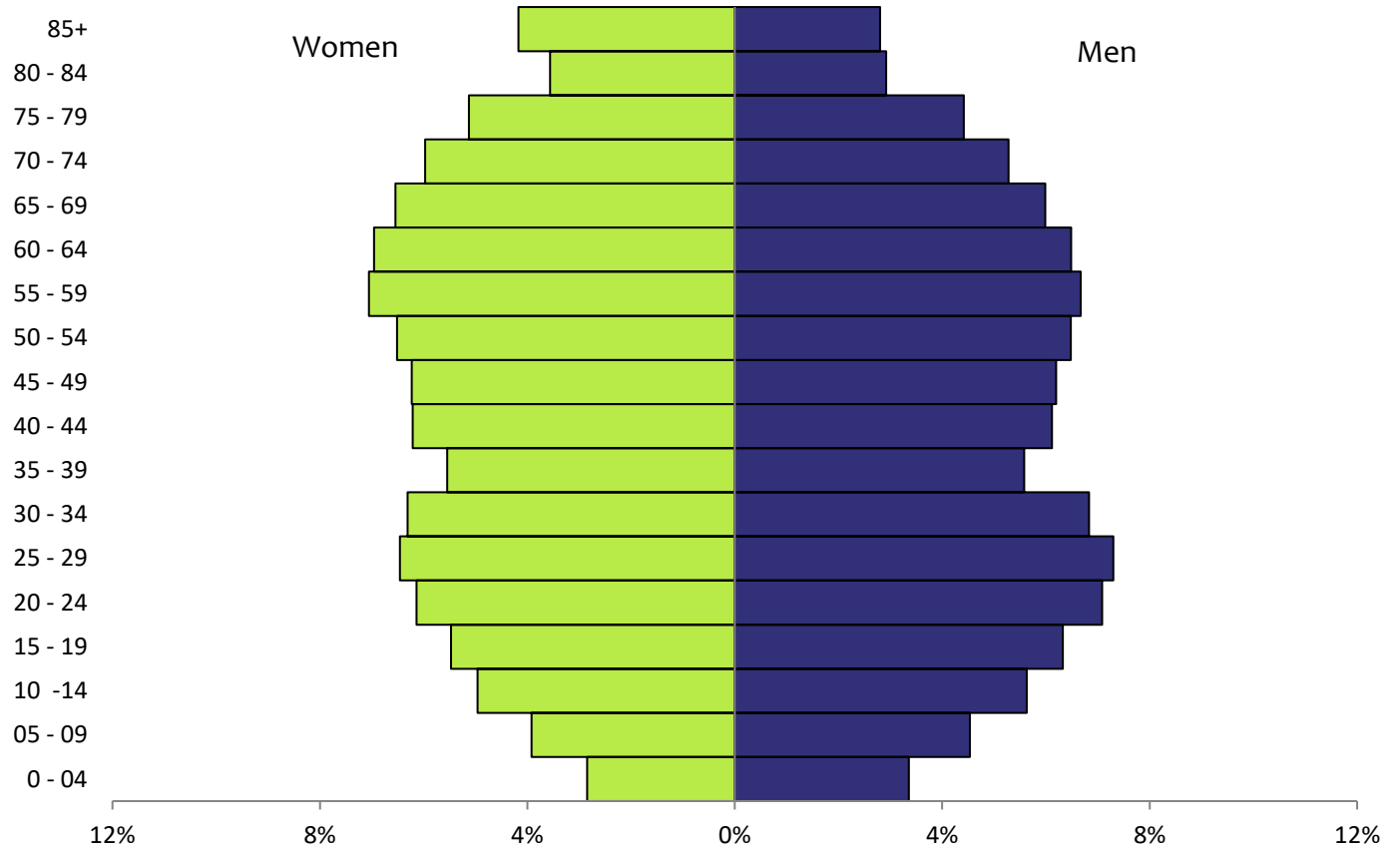
Figure 2 shows Puerto Rico in the Caribbean Region. The map in Figure 3 shows Puerto Rico's 78 municipalities including the islands of Vieques and Culebra.

Table 1. Puerto Rico Population by Age and Sex, 2022

Age group	Both sexes	Male	Females
0 - 4	99,505	51,115	48,390
5 - 9	135,574	69,024	66,550
10 - 14	169,946	85,671	84,275
15 - 19	189,175	96,261	92,914
20 - 24	212,042	107,785	104,257
25 - 29	220,814	111,100	109,714
30 - 34	211,121	103,967	107,154
35 - 39	179,066	84,912	94,154
40 - 44	198,584	93,098	105,486
45 - 49	200,098	94,280	105,818
50 - 54	209,269	98,638	110,631
55 - 59	221,344	101,495	119,849
60 - 64	216,893	98,736	118,157
65 - 69	202,201	91,064	111,137
70 - 74	181,704	80,305	101,399
75 - 79	154,319	67,218	87,101
80 - 84	104,911	44,413	60,498
85 +	113,547	42,653	70,894
Total	3,220,113	1,521,735	1,698,378
Median age (years)	44.9	42.8	46.7

Source: U.S. Census Bureau, 2024^a

Figure 1. Puerto Rico Population Pyramid, 2022



Source: U.S. Census Bureau, 2024^a

Figure 2. Caribbean Region and Puerto Rico



Source: Google Earth

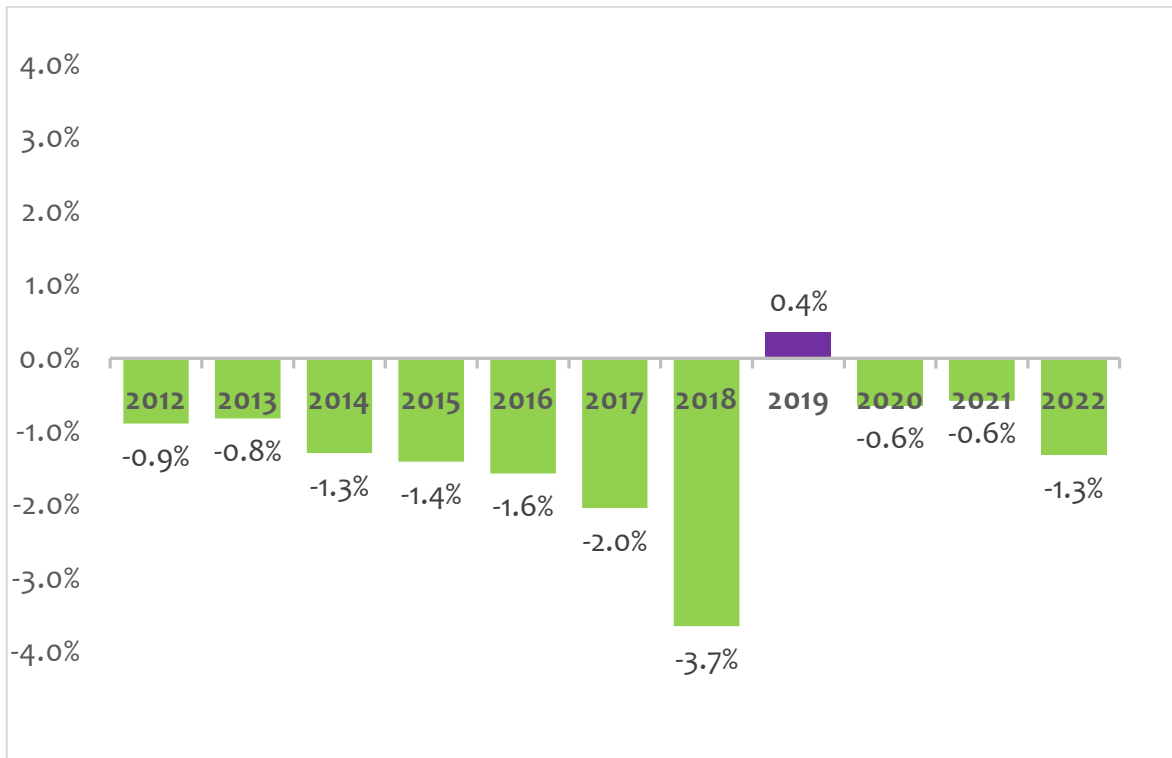
Figure 3. Map of Puerto Rico's 78 Municipalities



Changes in Puerto Rico's Population after Hurricane María

The estimated population for Puerto Rico as of July 1, 2022, was 3,220,113, which represents a 13.6% decrease from the 2010 Census population of 3,725,789. Hurricanes Irma and Maria fostered one of the largest emigrations of Puerto Rican residents to the U.S. mainland in 2017. According to a report released on September 26, 2019, by the U.S. Census Bureau, an estimated 142,000 people (4.4% of the population) emigrated from Puerto Rico in the wake of Hurricane Maria, (Glassman, 2019). Figure 4 shows the annual relative population changes from the years 2012 to 2022, utilizing population estimates between 2010 and 2020 (U.S. Census Bureau, 2024^{a,b}). According to these estimates, Puerto Rico has had continuous populational decline except for a minimal increase in 2019 (0.4%). According to U.S. Census postcensal estimates, Puerto Rico's 2022 population is assessed to be -1.3% lower than its 2021 population (U.S. Census Bureau, 2024^a).

Figure 4. Population Growth Rate with Respect to Previous Year: Puerto Rico, 2012 - 2022



Source: U.S. Census Bureau, 2024^a and 2024^b.

VIOLENT DEATHS IN PUERTO RICO 2022

OVERVIEW

Violent Deaths - 2022

During 2022, 727 incidents of violent deaths were reported, resulting in 809 victims, mostly from single or multiple homicides (598 victims, 73.9%) and suicides (190 victims, 23.5%). Notably, of the total number of homicides and suicides reported in 2022, 14 victims (1.8%) were recorded in seven homicide-suicide incidents. Homicide-suicide incidents are those where the aggressor, after killing the victim, commits suicide. In addition, 6 violent deaths are attributed to legal intervention incidents (0.7%). One law enforcement officer was killed in one of these legal interventions. There were 4 violent deaths registered due to unintentional self-inflicted injury with a firearm (0.5%). Finally, 11 violent deaths with undetermined intent were documented (1.4%). Table 2 shows the distribution of all victims of violent deaths that occurred in 2022 by incident type and sex. Figure 5 illustrates the relative distribution of these violent deaths in males and females, respectively. Approximately 9 out of 10 of violent death victims (89.6%) were male.

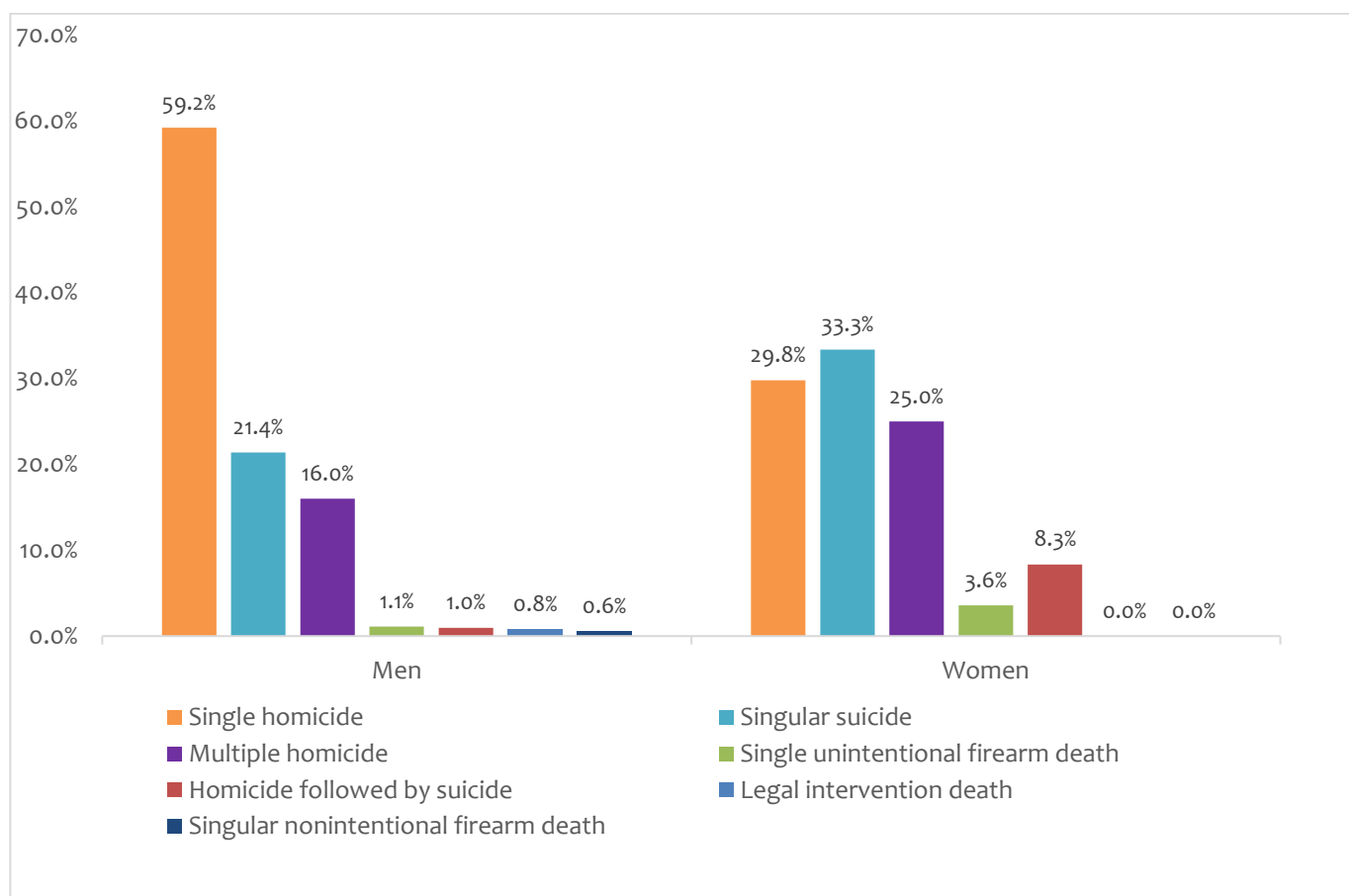
The crude rate of violent deaths for Puerto Rico in 2022 was 25.1 per 100,000 inhabitants: 47.6 in men and 4.9 in women. The estimated lifetime risk of a violent death (cumulative to age 74) was 1 in every 53 inhabitants: 1 in every 29 men and 1 in every 251 women. The primary mechanism of all violent deaths was the use of firearms. Approximately, three out of four incidents of violent deaths (n=535, 73.6%) involved a firearm. Of these incidents, 93.1% occurred in males (n=498) and 6.9% in females (n=37). Of the 535 incidents of violent deaths involving firearms, 91.2% were homicide incidents (n=488), suicides accounted for 7.9% (n=42), and the rest is represented by five of the seven homicide-suicide incidents. Firearms were used in all six incidents of legal intervention.

Given that 97.4% of all violent deaths in Puerto Rico in 2022 were homicides (n=598) and suicides (n=190), this report focuses on these two types of violent deaths.

Table 2. Victims of Violent Deaths by Type of Incident and Sex in Puerto Rico, 2022

Violent death type of incident	Sex of victims		
	Men	Women	Total
Singular homicide	428	25	453
Multiple homicide	114	21	135
Mutual homicide/shootout	2	0	2
Single homicide followed by suicide	7	7	14
Multiple homicide followed by suicide	0	0	0
Singular suicide	155	28	183
Singular legal intervention death	3	0	3
Multiple legal intervention deaths	2	0	2
Homicide followed by legal intervention	2	0	2
Single unintentional firearm death	4	0	4
Single death of undetermined death	8	3	11
Total	725	84	809

Figure 5. Percent Distribution of Violent Death Incidents by Sex in Puerto Rico, 2022

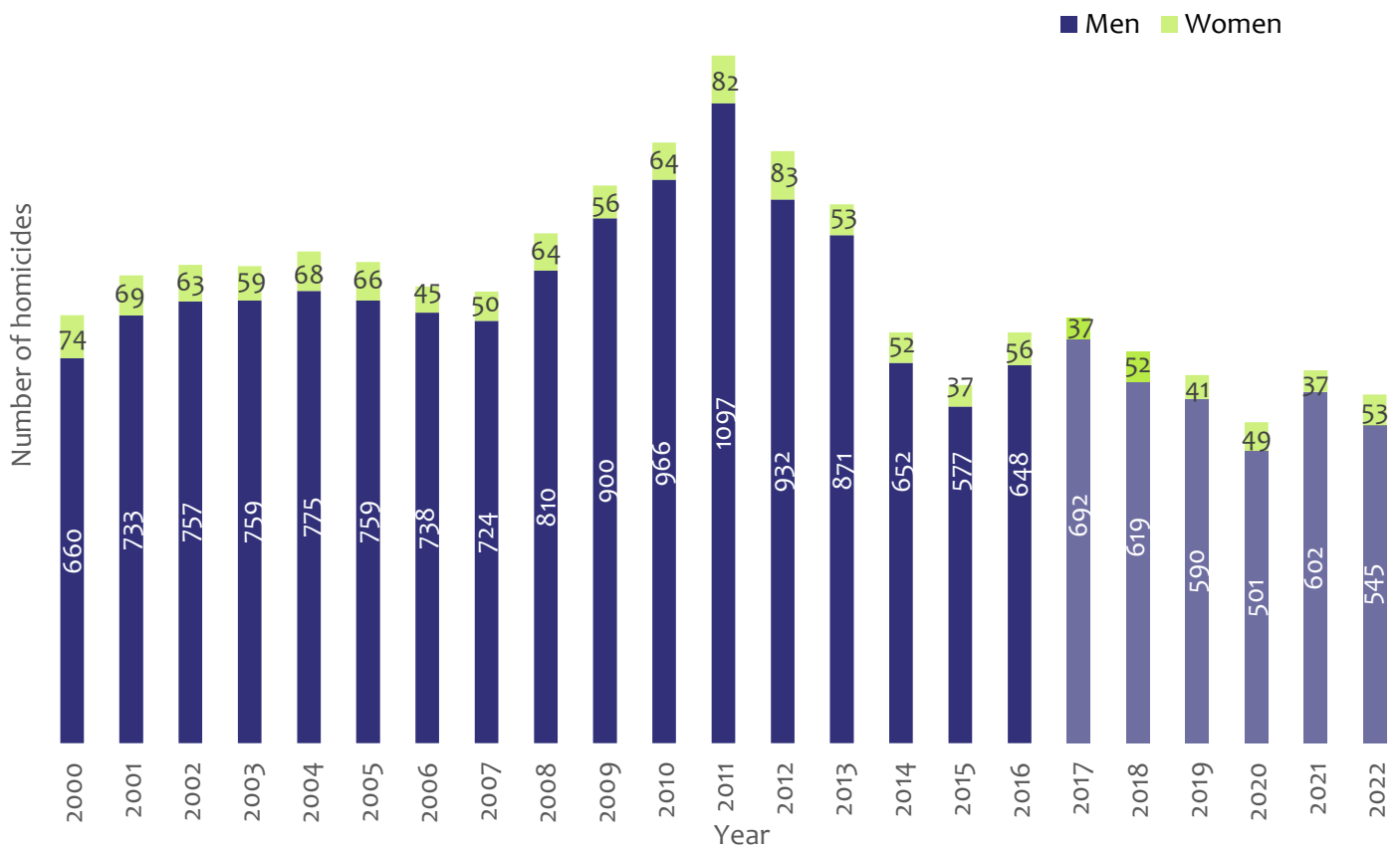


VIOLENTS DEATHS IN PUERTO RICO 2022
HOMICIDES

Homicides

Of the 809 violent deaths registered in 2022, 598 were homicides (73.9%). Homicides are more frequent in men (n=545, 91.1%) than in women (n=53, 8.9%). This sex profile has been maintained for decades. According to historical data (2000–2016) from the Institute of Forensic Sciences, combined with PRVDRS data (2017–2022), a total of 18,223 homicides were recorded: 16,907 in males (92.8%) and 1,311 in females (7.2%). This information is illustrated in Figure 6.

Figure 6. Number of Homicides by Sex: Puerto Rico, 2000-2022*

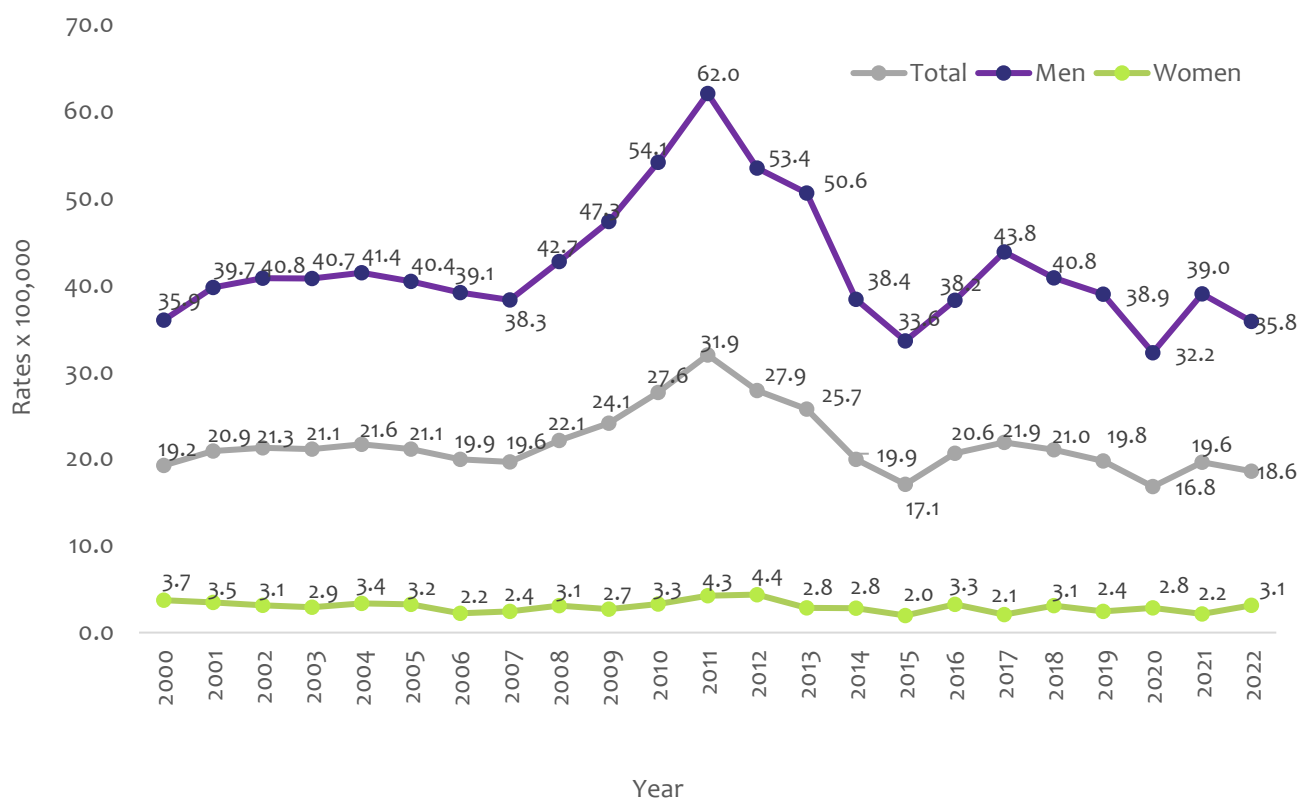


* 1 homicide in 2011, 3 homicides in 2014, and 1 homicide in 2020 have no sex classification.

Figure 7 illustrates the trend in annual crude homicide rates from 2000 to 2022. During this period, the highest homicide rates were recorded in 2011 with 31.9 homicides per 100,000 inhabitants: 62.0 per 100,000 males and 4.3 per 100,000 females. The crude female homicide rates during the years 2000 to 2022 have fluctuated between the lowest rate recorded in 2015 (2.0 per 100,000 females) and the highest in 2012 (4.4 per 100,000 females). During 2016 and 2017, an increase in the crude homicide rates in Puerto Rico was observed. However, by 2020, when restrictions were imposed during the

COVID-19 pandemic, the homicide rate decreased to 16.8 per 100,000 population (32.2 in males). In women, homicide rates increased slightly (2.8). In 2022, male homicide rates decreased from the previous year while female homicide rates increased minimally. According to these data, the risk of dying from homicide in 2022 for males was approximately 12 times greater than the risk for females (RR=11.5).

Figure 7. Homicide Crude Annual Rates by Sex: Puerto Rico, 2000-2022



Demographic Profile of Homicides

Age and Sex

Table 3 shows the number and rates of homicides in Puerto Rico by sex and age groups in 2022 and includes the calculation of the cumulative rate and the approximation of the cumulative risk up to age 74 (lifetime risk). This statistic does not consider the risk for other causes of death, and its interpretation is easy and comparable between populations, even with different age structures. The highest homicide rates recorded in 2011 reflected a cumulative risk of 1 in 42 inhabitants, 1 in 22 males and 1 in 315 females. In 2022, the cumulative risk was 1 in 69 people: 1 in 37 males and 1 in 391 females. To compare Puerto Rico with other U.S. populations and other countries, Table 3 includes age-adjusted rates using the U.S. standard population (2000) and the world standard population (2000).

Age-specific rates are important for identifying age groups at higher risk of homicide death. The contrast in homicide rates by sex in the age groups from 15 to 39 is striking (framed in Figure 8). In these age groups, 73.2% of all homicides in males occur and 66.0% in females. Homicide rates in men between 20 and 34 years of age reflect rates greater than 70 per 100,000 men. When comparing the risk of death from homicide in men and women between the ages of 15 and 39, the risk in young men between 20 and 24 years of age is 23 times higher than the risk of death in women of the same age. In 2022, there were two homicides of persons younger than 15 years of age (0.3%) and 25 homicide victims were older adults (60 years or older, 3.3%).

Table 3. Number and Rates of Homicides by Age and Sex: Puerto Rico, 2022

Age Group	Number of cases			Rates per 100,000*		
	Sex			Sex		
	Men	Women	Total	Men	Women	Total
0-4	0	~	~	-	~	1.0
5-9	0	0	0	-	-	0.0
10-14	~	0	~	~	-	0.6*
15-19	34	~	38	35.3	~	20.1
20-24	95	~	99	88.1	~	46.6
25-29	109	10	119	98.0	9.1*	53.8
30-34	96	12	108	92.2	11.2*	51.1
35-39	65	~	70	76.5	~	39.1
40-44	57	~	60	61.2	~	30.2
45-49	34	~	39	36.0	~	19.5
50-54	17	~	19	17.2*	~	9.1*
55-59	15	~	18	14.8*	~	8.1*
60-64	10	~	13	10.1*	~	6.0*
65-69	~	0	~	~	-	~
70-74	7	~	8	8.7*	~	4.4*
75-79	0	0	0	-	-	-
80-84	0	0	0	-	-	-
85+	0	0	0	-	-	-
Unknown	1	0	1			
Total	545	53	598	35.8	3.1	18.6
Age-adjusted rate (US 2000)				37.9	3.5	20.3
Age-adjusted rate (World, 2000)				39.2	3.6	21.1
Cumulative rate to 74 years of age (%)				2.73	0.26	1.46
Cumulative risk (1 in...)				37	391	69
Rate Ratio Men: Women by age-groups:						
RR	15-19	20-24	25-29	30-34	35-39	
	8.2	23.0	10.8	8.2	14.4	
Confidence interval (95%)	2.9, 31.8	8.7, 86.0	5.6, 23.1	4.5, 16.5	5.9, 45.9	

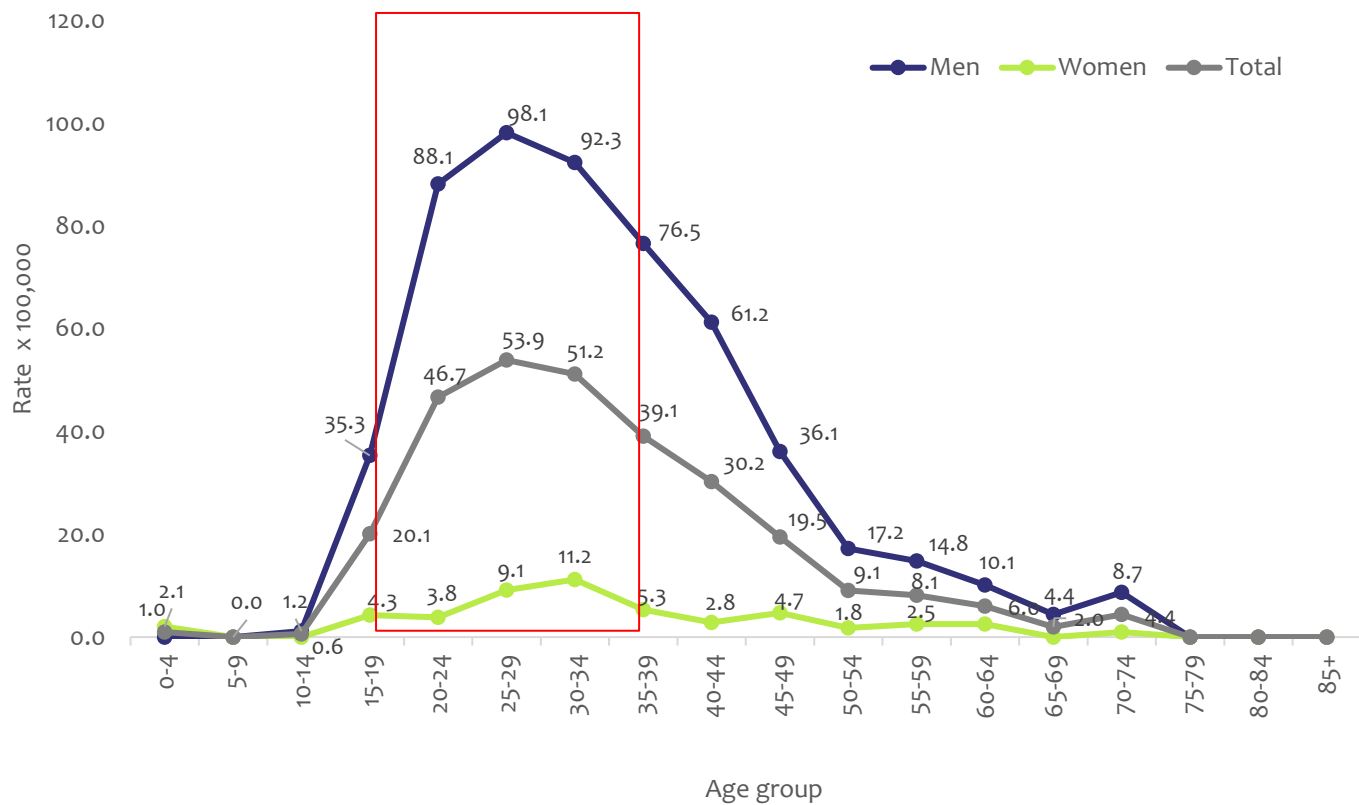
~Numbers and rates are not presented when fewer than six cases are reported to ensure confidentiality of the information.

*Rates calculated with fewer than 20 observations are unreliable and should be interpreted with caution.

RR: Rate Ratio is an indicator of risk in men in relation to the risk in women.

Table 4 shows the age-adjusted homicide rates for men and women in 2022 for Puerto Rico and compares them with White, African American, Hispanic, and Native American populations in the U.S. (CDC, 2024). To compare the probability of the occurrence of homicides between two different populations, the rate ratio (RR) was calculated. The risk of dying from homicide for men in Puerto Rico was the second highest of all populations compared. Men in Puerto Rico had a risk 8.8 times higher than that of white men in the U.S. This risk was lower than that of the population of African American men, whose risk of dying from homicide was the highest: 12.5 times greater than that of white men in the United States. The risk of dying from homicide in women in Puerto Rico was 1.8 times greater than that of White women in the United States. However, this risk was less than that of African American women (4.5) and Native American women (3.7) relative to the risk in White women.

Figure 8. Homicide Rates by Age-group and Sex: Puerto Rico, 2022



According to the statistics provided by the United Nations Office on Drugs and Crime (UNODC, 2024), the average homicide rate worldwide in 2022 was 5.6 per 100,000 inhabitants, while the average in Latin America and the Caribbean was 19.6 per 100,000 inhabitants. The Turks and Caicos Islands, Jamaica and Saint Vincent and the Grenadines had the highest homicide rates of 76.6, 53.3 and 40.4 per 100,000 inhabitants, respectively. Puerto Rico, with a rate of 17.6, is ranked sixteenth out of 34 countries in the region with available data (UNODC, 2024).

Table 4. Age-adjusted Homicide Rates (US 2000): Puerto Rico and US, 2022

Men					
Race Ethnicity	No. of deaths	Population	Crude Rate	Age-adjusted rate	RR**
White, non-Hispanic	4,097	97,521,380	4.20	4.31	1.0
Hispanic	3,684	32,276,938	11.41	10.87	2.5
African American, non-Hispanic	11,352	20,226,190	56.13	53.84	12.5
American Indian, non-Hispanic*	302	1,197,400	25.22	25.64	5.9
Puerto Rico, Hispanic, all races	545	1,521,735	35.81	37.86	8.8
Women					
Race Ethnicity	No. of deaths	Population	Crude Rate	Age-adjusted rate	RR**
White, non-Hispanic	1,883	98,704,586	1.91	1.94	1.0
Hispanic	798	31,387,408	2.54	2.50	1.3
African American, non-Hispanic	1,884	21,844,281	8.63	8.67	4.5
American Indian, non-Hispanic*	84	1,223,572	6.87	7.26	3.7
Puerto Rico, Hispanic, all races	53	1,698,378	3.12	3.47	1.8

*include Alaskan Natives

** RR: is an indicator of risk in a population in relation to the risk of the reference population (Whites, Non-Hispanic). A RR = 1 means that there is no difference between the groups. A RR > 1 indicates an increased risk for the group in the numerator.

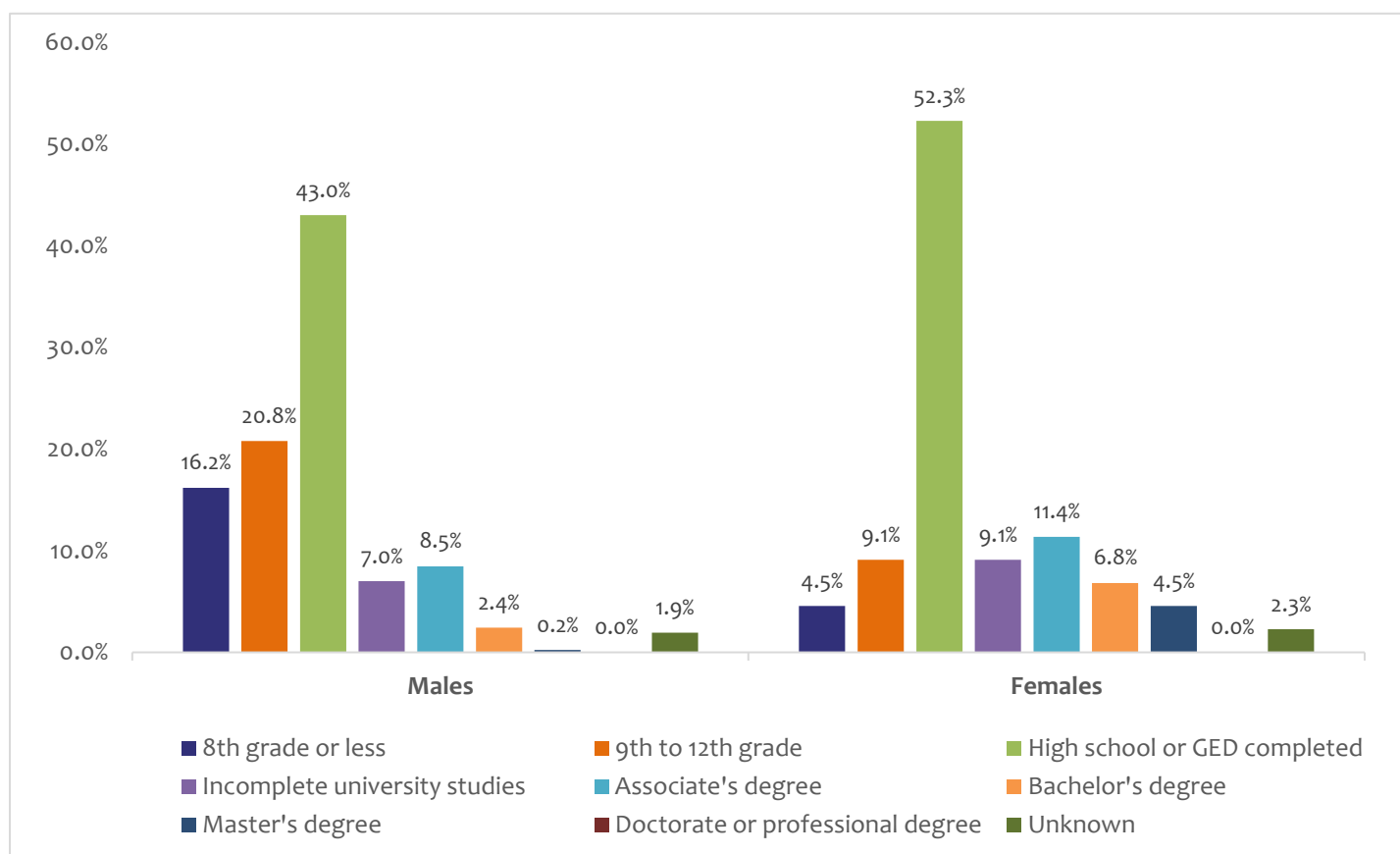
Education

Table 5 presents the highest level of education attained by homicide victims aged greater than 24 years, representing 76.6% of all homicide victims. Most of these victims (78.6%) did not complete or graduate high school, nor obtain a high school equivalency diploma (GED). Figure 9 shows the percentage distribution of education of these victims by sex: 80.0% of males and 65.9% of females did not complete education beyond high school. There is a notable difference in the proportion of female homicide victims with college and postgraduate education (11.4%), compared to males (2.7%).

Table 5. Highest Level of Education Attained by Homicide Victims Greater than 24 Years of Age: Puerto Rico, 2022

Highest educational level attained	Sex of the victim		
	Men	Women	Total
8th grade or less	67	2	69
9th to 12th grade, no diploma	86	4	90
High School graduate or GED completed	178	23	201
College credits, but no degree	29	4	33
Associate's degree	35	5	40
Bachelor's degree	10	3	13
Master's degree	1	2	3
Doctor's degree	0	0	0
Unknown	8	1	9
Total	414	44	458

Figure 9. Highest Level of Education Attained by Homicide Victims Greater than 24 Years of Age: Puerto Rico, 2022



Current Occupation

In 31.0% of male and 32.1% of female victims, occupation information was unknown. The proportion of victims with a known occupation in men (56.7%) was higher than in women (32.1%). The most frequent jobs for men included jobs in installation, maintenance and repair (14.9%), construction (14.3%), and to a lesser extent, cleaning and maintenance of buildings and grounds (4.8%). The most frequent jobs for women include food preparation and serving (5.7%), protective or security services (5.7%), cleaning and maintenance of buildings and grounds (3.8%) and health care aides (3.8%). Some 12.3% of men and 35.8% of women did not work because they were students, housewives, minors, patients, or persons in correctional institutions.

Mechanism

Historically, the use of firearms has been the primary mechanism of homicides in Puerto Rico (Zavala, et al; 2012). Data from the Institute of Forensic Sciences from 2000 to 2016 and PRVDRS data from 2017 onwards reflect that the use of firearms to inflict fatal injuries increased from 83.8% in men and 54.1% in women in 2000 to 94.3% in men and 86.8% in women in 2022. Table 6 shows all mechanisms used in

homicides by sex for 2022.

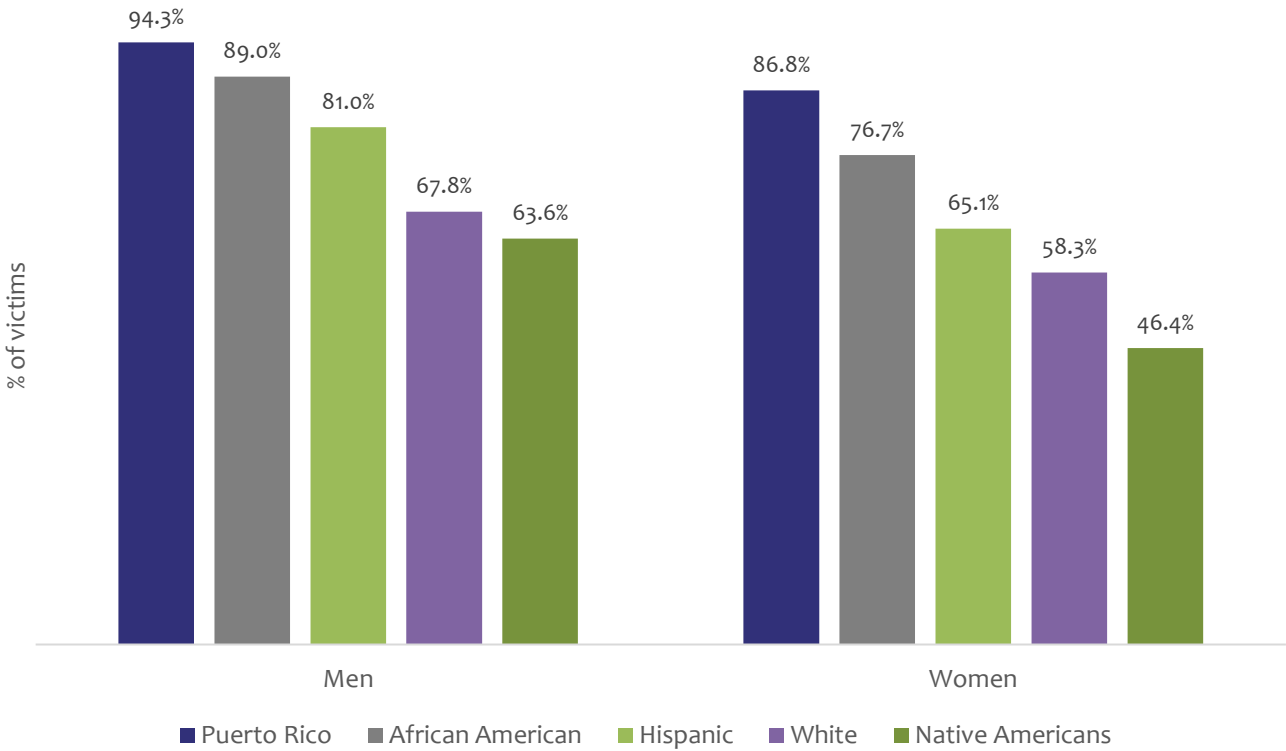
Figure 10 shows the proportion of firearm homicides for four racial groups in the U.S. compared to Puerto Rico in 2022 (CDC, 2024). Puerto Rico had the highest proportion for males (94.3%), followed by African American (89.0%) and Hispanic males (81.0%). Similarly, Puerto Rican females also had the highest proportion of firearm homicides (86.8%), followed by African American (76.7%) and Hispanic (65.1%) females.

Globally, 69.5% of homicides were committed with a firearm (UNODC, 2024). This figure is based on information available for 56 countries worldwide with notable omissions from the Americas region such as Brazil, Venezuela and Trinidad and Tobago (UNODC, 2024). In the Americas and Caribbean region, the use of firearms in homicides reached 71.3%. In 2022, three countries stood out for having even higher rates, where more than 90% of murders were committed with firearms: Puerto Rico with 93.6%, Bahamas with 91.4% and Antigua and Barbuda with 90.0% (UNODC, 2024). Figure 11 shows the list of the 15 countries in Latin America and the Caribbean with the highest proportions of homicides committed with firearms in 2022 (UNODC, 2024). Puerto Rico ranks first place (93.6%), followed by other Caribbean countries such as, Bahamas (91.4%), Antigua and Barbuda (90.0%) and Jamaica (83.8%).

Table 6. Primary Mechanism for Infliction of Fatal Injury in Homicides: Puerto Rico, 2022

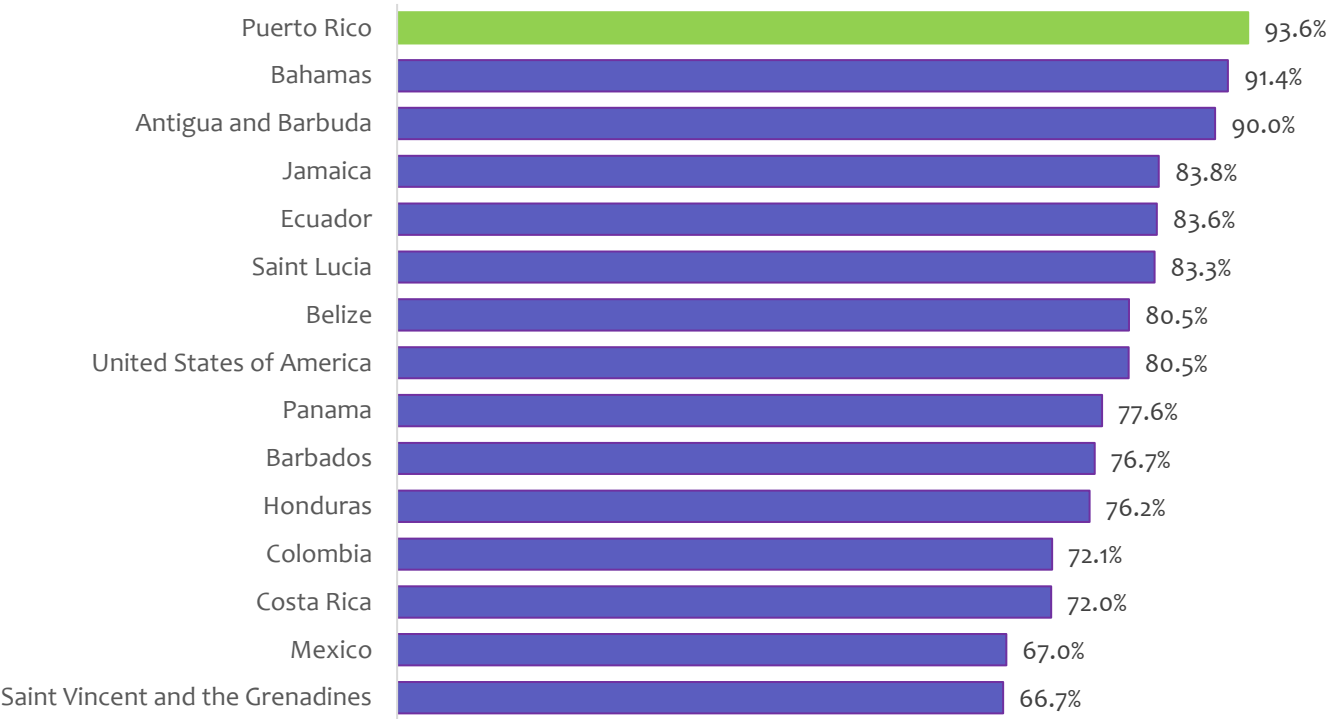
Mechanism	Sex of victim		
	Men	Women	Total
Firearm	514 (94.3%)	46 (86.8%)	560 (93.6%)
Sharp instrument	13 (2.4%)	3 (5.7%)	16 (2.7%)
Blunt instrument	6 (1.1%)	1 (1.9%)	7 (1.2%)
Personal weapons (hands, fists, etc.)	5 (0.9%)	0	5 (0.8%)
Hanging, strangulation, suffocation	2 (0.4%)	1 (1.9%)	3 (0.5%)
Fire or burns	2 (0.4%)	0	2 (0.3%)
Other (e.g. poisoning, fall)	3 (0.6%)	0	3 (0.5%)
Unknown	0	2 (3.8%)	2 (0.3%)
Total	545 (100%)	53 (100%)	598 (100%)

Figure 10. Proportion of Homicides by Firearms: Puerto Rico and U.S. Populations, 2022



Source: CDC 2024

Figure 11. Proportion of Homicides by Firearms in Latin America and the Caribbean, 2022



Source: UNODC, 2024

Because of the high proportion of firearm homicides in Puerto Rico, firearm homicide rates were calculated and compared to the four populations in the U.S. described above. Table 7 shows the age and sex-adjusted firearm homicide rates in 2022 (CDC, 2024). The risk of being a victim of firearm homicide for Puerto Rican men is 12 times the risk for White men in the U.S. This risk is lower than for African American men, with a risk 16.2 times that of White men. The risk of firearm homicide in Puerto Rican women (2.5) is lower than that of African American women (5.7) and Native American women (3.0), compared with White women in the U.S.

Figure 12 shows the age-specific rates of firearm homicides for males in Puerto Rico and the four U.S. populations described above (CDC, 2024). The male population in Puerto Rico and the African American population in the United States, between the ages of 15 to 44, has a higher risk of homicide death than any other population in the United States. For ages 20 to 34, homicide rates were greater than 80 per 100,000 males in Puerto Rico and more than 100 per 100,000 African American males in the United States. This level of risk in these age groups is comparable to homicide rates in other regions of the world where armed conflicts exist. This pattern of violent deaths in young people is the same pattern observed mainly in Latin America and the Caribbean (IHME, 2018).

Table 7. Age-adjusted Firearm Homicide Rates (US 2000): Puerto Rico and US Populations, 2022

Homicides

Men

Race Ethnicity	No. of Deaths	Population	Crude Rate	Age-Adjusted Rate	RR**
White, non-Hispanic	2,735	97,521,380	2.81	2.95	1.0
Hispanic	2,977	32,276,938	9.22	8.59	2.9
African American non-Hispanic	10,127	20,226,190	50.07	47.81	16.2
American Indian, non-Hispanic*	185	1,197,400	15.45	15.55	5.3
Puerto Rico, Hispanic, all races	514	1,521,735	33.78	35.75	12.1

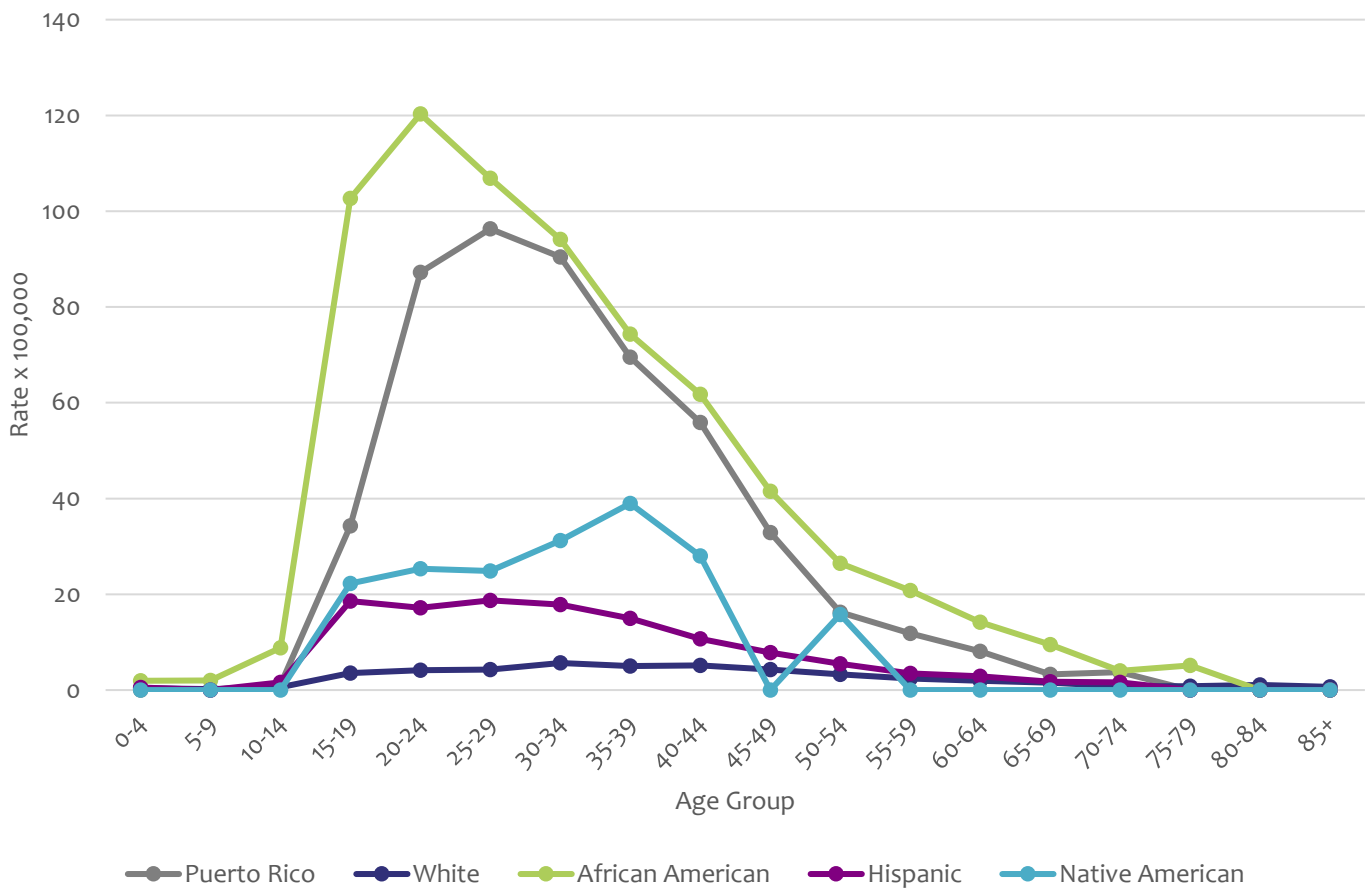
Women

Race Ethnicity	No. of Deaths	Population	Crude Rate	Age-Adjusted Rate	RR**
White, non-Hispanic	1,095	98,704,586	1.11	1.16	1.0
Hispanic	523	31,387,408	1.67	1.61	1.4
African American non-Hispanic	1,448	21,844,281	6.63	6.65	5.7
American Indian, non-Hispanic*	39	1,223,572	3.19	3.52	3.0
Puerto Rico, Hispanic all races	46	1,698,378	2.71	2.93	2.5

*Include Alaskan natives

** RR: is an indicator of risk in a population in relation to the risk of the reference population (Whites, Non-Hispanic). A RR = 1 means that there is no difference between the groups. A RR > 1 indicates an increased risk for the group in the numerator.

Figure 12. Age-specific Firearm Homicide Rates in Men: Puerto Rico and U.S. Populations, 2022



Circumstances

As a result of the criminal and medicolegal investigation of homicide incidents, multiple circumstances related to the crime were identified. The circumstances in which homicides occur include the interpersonal relationships between victims and suspects, the context of the crime, the mental health of the victims, among others.

It is important to maintain a differentiation between homicides that occur in the community, to adequately distinguish the context between community violence and collective violence. Community violence is defined as "violence that occurs between unrelated people who may or may not know each other and usually occurs outside the home" (Krug, E., Dahlberg, L., & Mercy, J., 2002). Collective violence is defined by the possible motives for the use of violence including social, political and economic reasons.

Collective violence and community violence are related concepts, but differ in their scope,

context, and the actors involved. Unlike community violence, collective violence can be perpetrated by the State or by organized groups of individuals, including criminal groups. Such is the case in Puerto Rico, where homicides are perpetrated mostly by individuals belonging to groups involved in the illegal drug trade. The context of these homicides is organized crime, and it is important to differentiate them from fatal incidents that occur in the community between individuals who are not associated with criminal groups and that occur in other circumstances, such as street fights or confrontations between individuals in public or private places. For example, an argument that precipitates a homicide with a firearm.

Interpersonal Violence

Interpersonal violence occurs in two circumstances: family violence and community violence. Family violence (violence between family members) includes child or elder abuse and intimate partner violence (Krug, E., Dahlberg, L., & Mercy, J., 2002).

Family Violence (n=30)

In 2022, 30 fatal victims of family violence were reported. Most of these cases were related to violence in an intimate partner or ex-partner relationship (19 cases, 63.3%), and the rest were related to violence between family members (11 cases, 36.7%).

Intimate Partner Violence (n=19)

The PRVDRS uses the World Health Organization's definition of intimate partner violence. This definition is widely used internationally to refer to violence perpetrated by spouses, partners, or friends involved in a current or past close personal or sexual relationship. Intimate partner violence includes not only violence against women, but also violence by women against men and between same-sex partners (Krug, Dahlberg & Mercy, 2002). The United Nations defines femicide/feminicide as the gender-related killing of women that can take many forms including intimate partner homicide (UN, 2012), recognizing that femicides/feminicides are an extreme manifestation of violence against women perpetrated or condoned by public and private actors (Grzyb et al., 2018).

Of the 19 victims of homicide by an intimate partner reported in 2022, 13 were female (68.4%) and 6 were male (31.6%). Most of the females were victims of their male ex-partner/ex-spouse (n=8, 61.5%) or by their current partner or spouse (n=4, 30.8%). Six of the femicides/feminicides occurred in homicide-suicide incidents (46.2%). In 6 femicides/feminicides it was documented that an argument or

a recent separation had occurred. In 10 of the 13 femicides/feminicides a firearm was used (76.9%), and in the other 3 femicides/feminicides a sharp or blunt instrument was used (23.1%). In 3 of the 6 male victims of homicide due to intimate partner violence a firearm was used, and in the other three a sharp weapon was used.

Within the context of intimate partner violence, 10 additional deaths occurred of a third person who was directly linked to a past intimate relationship in which there was a history of violence (e.g., current partner of the suspect's ex-partner, ex-partner of the suspect's current partner, friend or acquaintance of the victim). All victims were male, and the use of a firearm predominated (n=7, 70.0%). In addition, seven other people were murdered without having any intimate relationship with the aggressor or the aggressor's partner or ex-partner, becoming indirect victims of conflicts between partners or ex-partners. Six of these victims were men. Firearms were the predominant weapons used in all these cases.

Community Violence (n=283)

Of the 598 homicides that occurred in 2022, 283 (47.3%) took place within a context of community violence. The victims were mainly men (n=259, 91.5%) aged between 15 and 39 (70.7%), with an education level of high school graduate or lower (81.1%). In the case of female victims of community violence (n=24, 8.5%), 79.2% were between the ages of 15 and 39, and 66.7% of the victims had a high school education or less. The use of a firearm was the primary mechanism of death in incidents of community violence (n=266, 94.0%). Firearms were used in 94.2% of homicides among men and 88.0% of homicides among women. Community violence homicides exclude incidents of violent deaths due to legal intervention, unintentional firearm deaths, and deaths of unknown intent.

The most common documented circumstances were arguments (n=60, 21.2%), fights between two people (n=15, 5.3%), and robbery (n=11, 3.9%). In addition, 15.5% (44 victims) of homicides occurred in shootings from vehicles. A total of 20.8% percent of community violence homicides were recorded as multiple homicides (n=59), with most victims in these circumstances being men (83.1%). Five homicides involved collateral victims (1.8%), all of whom were women.

Collective Violence (n=266)

In Puerto Rico, 266 of the 598 homicides (44.5%) recorded in 2022 occurred in a context of collective violence, related to criminal groups involved in the trafficking of illicit drugs. There was evidence of drug trafficking in 261 victims (98.1%), and evidence of membership in criminal groups in 255 victims (95.9%). In these incidents, there were 72 victims in multiple homicides (27.1%), of which 4 (5.4%) were bystanders and all males. In addition, 47 victims involved in organized crime or drug trafficking died in shootings from moving vehicles (17.7%).

The victims of collective violence are mostly men (95.1%), especially between 15 and 39 years old (78.7%) and with a high school diploma or less (84.6%). Of the 13 female victims of collective violence (4.9%), most were between the ages of 15 and 39 (76.9%) with a high school diploma or less (69.2%). Firearms were used in virtually all homicides related to organized crime and/or drug trafficking (98.9%). The rest of the homicides in a context of collective violence were related to arguments, robbery, or assault.

Table 8 summarizes the contrast in demographic characteristics and circumstances of victims of community violence and collective violence. In both classifications of violence, most victims are young men between the ages of 15 and 39 (71.4% and 78.6%, respectively). However, a higher proportion of victims of collective violence had an education level of high school graduate or lower (83.8%), when compared to victims of community violence (79.9%). 1.9% of victims of collective violence had a bachelor's or postgraduate degree, compared to 2.8% of victims of community violence. The proportion of victims of fatal firearm injuries in both types of violence is high: 94.0% for community violence and 98.9% for collective violence. In incidents of collective violence, multiple homicides are more frequent than in incidents of community violence (27.8% and 20.8%, respectively). Finally, it is important to note that drive-by shootings are not exclusive to homicides in circumstances of collective violence (16.9%), 15.5% of community violence homicides involved shootings from vehicles.

Table 8. Demographic Profile and Circumstances of Community and Collective Violence – 2022

The victim's sociodemographic profile and incident circumstances	Type of Violence	
	Community Violence n=283	Collective Violence n=266
Demographics		
<i>Sex</i>		
Men	259 (91.5%)	253 (95.1%)
Women	24 (8.5%)	13 (4.9%)
<i>Victims in the 15-39 age group</i>		
Men	183 (70.7%)	199 (78.7%)
Women	19 (7.2%)	10 (7.9%)
<i>Educational level</i>		
High School or less	226 (79.9%)	223 (83.8%)
Men	210 (81.1%)	214 (84.6%)
Women	16 (6.7%)	9 (6.9%)
Associate degree	22 (7.8%)	16 (6.0%)
Men	20 (7.7%)	14 (5.5%)
Women	2 (8.3%)	2 (15.4%)
College credits, no degree	19 (6.7%)	20 (7.5%)
Men	16 (6.2%)	19 (7.5%)
Women	3 (12.5%)	1 (7.7%)
Bachelor's/post-graduate	8 (2.8%)	5 (1.9%)
Men	6 (2.3%)	4 (1.6%)
Women	2 (8.3%)	1 (7.7%)
Unknown	8 (2.8%)	2 (0.8%)
<i>Mechanism of death</i>		
Firearms	266 (94.0%)	263 (98.9%)
Men	244 (94.2%)	250 (98.8%)
Women	22 (91.7%)	13 (100%)
<i>Incident Circumstances</i>		
Multiple homicide	59 (20.8%)	72 (27.1%)
A fight between two people	15 (5.3%)	0
Argument	60 (21.2%)	2 (0.8%)
Innocent victim	5 (1.8%)	8 (3.0%)
Vehicle shootout	44 (15.5%)	45 (16.9%)
Drug trafficking	0	261 (98.1%)
Associate with criminal organization	0	255 (95.9%)
Robbery	11 (3.9%)	1 (0.4%)

Puerto Rico and the US Virgin Islands have been designated as High Intensity Drug Trafficking Areas (HIDTA) for being the main maritime transshipment points for cocaine in the Caribbean (DEA 2020).

The DEA has established a "strong connection" between violent crime, illicit drug trafficking, gang activity, and possession of illicit weapons (DEA, 2017). The latest HIDTA report for Puerto Rico and the US Virgin Islands region for 2021 notes that cocaine seizures “were dramatically higher than national levels...” (Office of National Control Policy, 2024). In 2021, approximately 70,190 kilograms of cocaine were seized in the Puerto Rico, US Virgin Islands HIDTA region. Using DEA’s conversion factor of 1 kg of cocaine equivalent to 5,556 dosages sold on the street, in 2021 close to 390,000,000 dosages were seized (Office of National Control Policy, 2024).

Firearms and Ammunition

Access to firearms is a determining factor in the homicides that occur in Puerto Rico. A total of 94.0% of the victims of community violence and 98.8% of the victims of collective violence died from firearm injuries. Restrictions on legally accessing a firearm in Puerto Rico continue to be stricter than in many U.S. jurisdictions (Puerto Rico Firearms Statutes and Codes, ATF). However, in neighboring states such as Florida, the purchase of firearms is less restricted, so the accessibility of these weapons in Florida extends to Puerto Rico (Zavala et al., 2012). The 2022 report of the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF, 2023) Firearms Tracing System provides detailed information on 5,147 firearms selected for tracing in Puerto Rico. This year, the number of firearms for tracing is higher than that reported in 2021 (847 firearms). Most of these firearms were pistols or revolvers (85.6%), mainly 9mm caliber (44.3%), .40 caliber (20.7%), and .38 caliber (7.6%). According to this report, the firearms submitted for tracing were mostly weapons under investigation (n=2,054, 40.6%), illegal possession (n=1,090, 21.5%), and family offense (n=1,063, 21.0%).

Firearms recovered in a homicide incident accounted for 1.3% of all firearms traced in 2022. This figure suggests that firearms are not found at most homicide scenes in Puerto Rico. However, numerous shell casings of different calibers are recovered and sent to the Institute of Forensic Sciences for analysis through the National Integrated Ballistics Information Network (NIBIN), which could lead to their association with other homicides or crimes. In addition, ATF was able to identify the state of origin of the firearm in 3,920 of the 5,147 firearms analyzed (76.2%). A significant change in 2022 was that most of these traced guns came primarily from Puerto Rico (73.1%), followed by the state of Florida (13.9%) and Texas (4.0%) (ATF, 2022). In 2021, the ATF reported that the primary origin of 628 firearms was the state of Florida (49.7%), Texas (14.3%), and Puerto Rico (14.0%) (ATF, 2022).

Data on the number of firearms in legal or illegal possession in Puerto Rico is difficult to obtain. A

Small Arms Survey report estimated that, in 2017, 422,000 firearms in Puerto Rico were in legal (registered by the Police) and illegal possession; that is, approximately 12 out of every 100 people owned a firearm (Small Arms Survey, 2018). This number contrasts with the large amount of ammunition available annually in Puerto Rico. According to Puerto Rico Foreign Trade statistics, in 2022, 28,063,947 cartridges with projectiles for shotguns, rifles, or pistols were imported for a value of \$9,654,646, an increase of 48.5% or 9,162,740 additional cartridges from the amount of ammunition imported in 2021 (18,901,207 for a value of \$5,453,913) (Puerto Rico Planning Board, 2022).

Mental Health Circumstances

Most homicide incidents had no available or documented mental health history information. Table 9 shows the available mental health history documented in homicide victims. The percentage of each circumstance is in relation to the total number of homicides by sex. The most documented circumstance was a non-alcohol substance abuse problem (15.4%), this being more common in men than in women. In addition, 3.5% of victims were documented as having a current mental health problem, and 2.8% had a problem of alcohol dependence or abuse.

Table 9. Mental Health Circumstances in Victims of Homicide: Puerto Rico, 2022

Mental health circumstances in homicides	Victim's sex		
	Men n=545	Women n=53	Total n=598
The victim had a non-alcohol-related substance abuse problem	88 (16.2%)	4 (7.6%)	92 (15.4%)
The victim had been identified as currently having a mental health problem	20 (3.7%)	1 (1.9%)	21 (3.5%)
The victim had alcohol dependence or an alcohol abuse problem	15 (2.8%)	2 (3.8%)	17 (2.8%)
History of ever being treated for a mental health or substance abuse problem	14 (2.6%)	2 (3.8%)	16 (2.7%)
Currently in treatment for mental health problems or substance abuse	12 (2.2%)	1 (1.9%)	13 (2.2%)
The victim was perceived by self or others to be depressed at the time of the injury	12 (2.2%)	1 (1.9%)	13 (2.2%)

VIOLENT DEATHS IN PUERTO RICO 2022
SUICIDES

Suicides

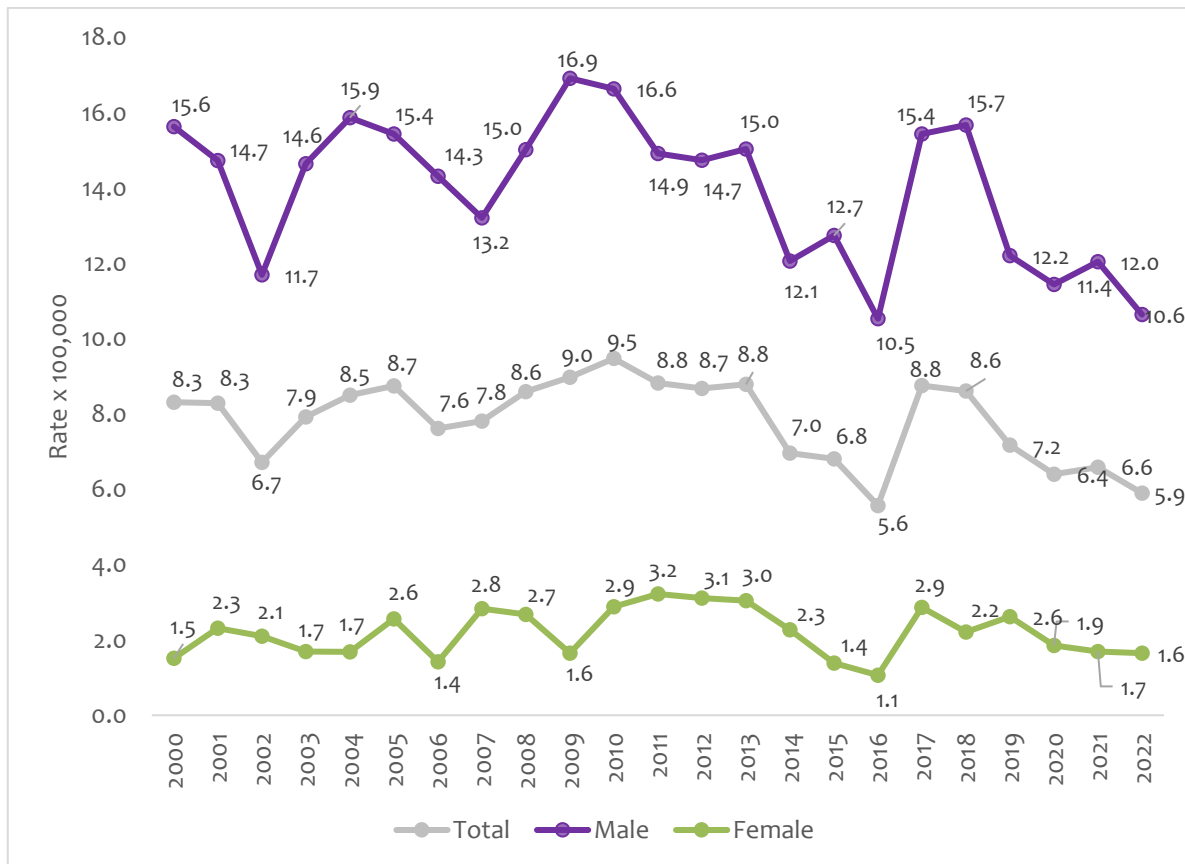
Data from PRVDRS provides information on the circumstances of deaths which, in the case of suicides, includes data on the individual's mental health and other factors that could precipitate a fatal self-injury. Figure 13 shows historical data from the Institute of Forensic Sciences from 2000 to 2016 and PRVDRS data from 2017 to 2022. In these 23 years, 6,580 suicides were reported. In Puerto Rico, the frequency of suicides is much lower than that of homicides; however, as with homicides, suicides are more frequent in males (5,628, 85.5%) than in females (952, 14.5%).

Figure 14 shows crude suicide rates by sex for the 2000–2022 period. In this 23-year period, the highest rates for males and females were recorded in different years. In 2009, the crude suicide rate was 16.9 per 100,000 males (1 in 77 males) and 1.6 per 100,000 females (1 in 777 females). In 2011, the highest female suicide rate was observed: 3.2 per 100,000 females (1 in 399 females), compared to 14.9 for males (1 in 88 males). Overall suicide rates decreased minimally from 6.6 per 100,000 people in 2021 to 5.9 per 100,000 in 2022. The crude suicide rate was 10.6 in men (1 in 145 men) and 1.6 in women (1 in 788 women). The risk of suicide in men was approximately seven times higher than the risk of suicide in women (RR=6.6).

Figure 13. Number of Suicides by Sex: Puerto Rico, 2000-2022



Figure 14. Annual Crude Suicide Rates by Sex: Puerto Rico, 2000-2022



Demographic Profile of Suicides

Age and sex

To minimize variability in age-specific rate calculations, Table 10 shows the number and rates of suicide specific to sex and age groups in 10-year intervals. However, age-specific rates based on fewer than 20 cases are unstable and should be interpreted with caution. For comparison with other populations, Table 10 includes age-adjusted rates using the US Standard Population (2000) and the World Standard Population (2000).

Table 10. Number and Age-sex Specific Rates for Suicides: Puerto Rico, 2022

Age group	Number of cases			Rate x 100,000		
	Men	Women	Total	Men	Women	Total
0-9	0	0	0	0.0	0.0	0.0
10-19	~	~	~	~	~	~
20-29	18	~	22	8.2	~	5.1
30-39	27	~	32	14.3	~	8.2
40-49	28	7	35	14.9	3.3	8.8
50-59	25	7	32	12.5	3.0	7.4
60-69	27	~	30	14.2	~	7.2
70-79	21	~	22	14.2	~	6.5
80 +	13	0	13	14.9	-	6.0
Unknown	0	0	0			
Total	162	28	190	10.6	1.6	5.9
Age-adjusted rate (U.S. 2000)				9.5	1.7	5.4
Age-adjusted rate (World 2000)				8.5	1.6	4.9
Cumulative rate (%)				0.70	0.13	0.40
Cumulative risk (1 in x persons)				143	788	251
Rate Ratio Men:Women by age-groups:						
RR	10-19	20-29	30-39	40-49	50-59	60-69
	2.9	4.4	5.8	4.5	4.2	10.9
Confidence interval (95%)	0.2, 153.0	1.4, 17.9	2.2, 19.1	1.9, 12.2	1.7, 11.3	3.3, 56.0

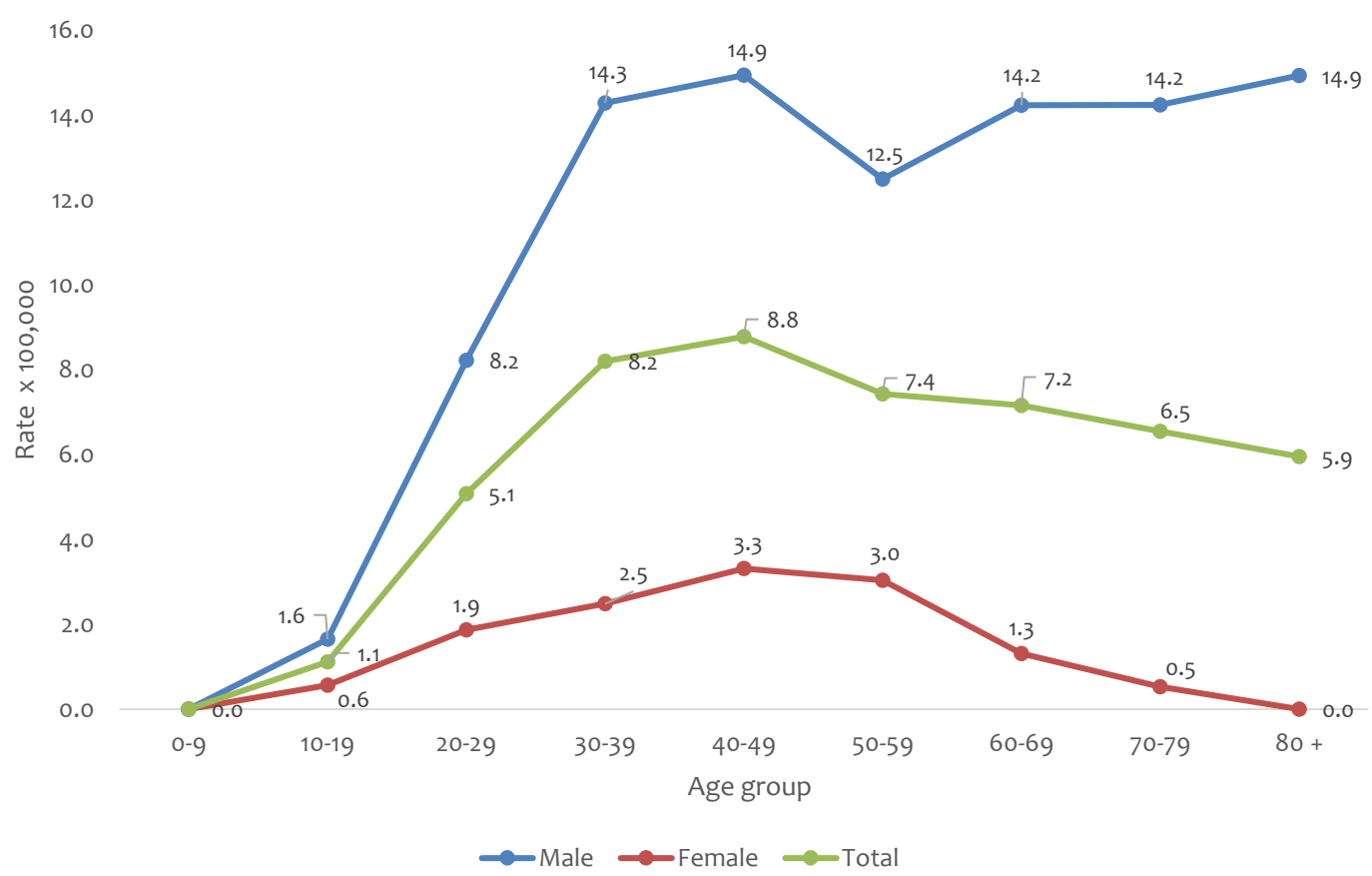
~ Numbers or rates are not presented when fewer than six cases are reported to ensure confidentiality of information.

* Rates calculated with fewer than 20 observations are unstable and should be interpreted with caution

RR: Rate Ratio is an indicator of risk in men relative to risk in women.

Overall, the risk of suicide in men is 6.5 times higher than in women, and 65.8% of all suicides occurred between the ages of 10 and 59 years. In 62.3% of men and 85.7% of women suicides occurred in the population under 60 years of age (see Table 10). Comparison of suicide risk by age group is limited by the instability of rates based on less than 20 cases observed in certain age groups in women. Nevertheless, it is in the older age groups in which suicide risk is higher in men than in women. These are 60-69 and 70-79 and their rate ratio is 10.9 and 26.8, respectively. In addition, Figure 15 shows the specific suicide rates by age group and sex in 2022. Beginning at age 30, the suicide rate in men remains at approximately 14.0 per 100,000 men, except in the 50-59 age group, where the rate declines to 12.5. The highest rates in women were observed in the 40-49 age group (3.3 per 100,000 women).

Figure 15. Suicide Death Rates by Age and Sex: Puerto Rico, 2022

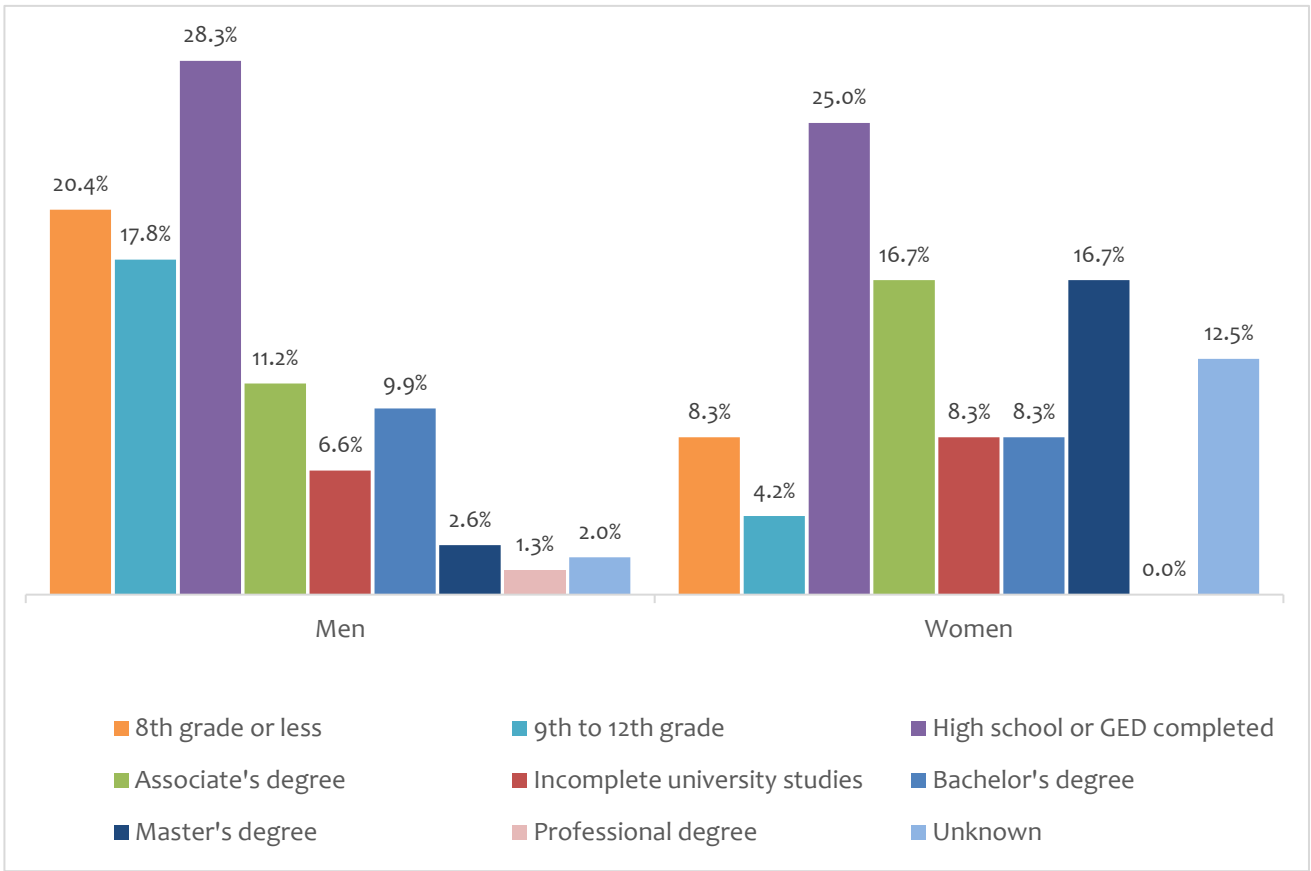


Education

Figure 16 shows the percentage distribution of the highest level of education obtained by suicide victims older than age 24 by sex. Like homicide victims, most suicide victims (63.2%) did not obtain more than a high school education: 35.1% did not graduate, while 28.2% completed high school or obtained a

GED. A total of 41.7% of female suicide victims had an associate's degree, college undergraduate studies, bachelor's, or graduate degree compared to 25.0% of male suicide victims.

Figure 16. Highest Level of Education Attained by Suicide Victims Greater than 24 Years of Age: Puerto Rico, 2022



Mechanism

In contrast with homicides, the use of firearms is not the most frequent mechanism employed in suicides. Table 11 shows the various mechanisms used in suicides in Puerto Rico by sex. The main one is asphyxiation (62.3% in men and 53.6% in women), and the second one is the use of firearms (23.5% in men and 14.3% in women). The third one in men is poisoning (6.8%), while in women it is jumping to one’s death (17.9%). The first three mechanisms in men represent 92.6% of suicides, while the first three mechanisms in women represent 85.7% of suicides.

Table 11. Mechanism Used to Inflict Fatal Injury in Suicides: Puerto Rico, 2022

Mechanism	Sex of the victim		Total
	Men	Women	
Hanging, strangulation, suffocation	101 (62.3%)	15 (53.6%)	116 (61.1%)
Firearm	38 (23.5%)	4 (14.3%)	42 (22.1%)
Poisoning	11 (6.8%)	3 (10.7%)	14 (7.4%)
Fall	3 (1.9%)	5 (17.9%)	8 (4.2%)
Fire or burns	3 (1.9%)	1 (3.6%)	4 (2.1%)
Sharp instrument	3 (1.9%)	0 -	3 (1.6%)
Other (e.g., motor vehicle, submersion, etc.)	2 (1.2%)	0 -	2 (1.0%)
Unknown	1 (0.6%)	0 -	1 (0.5%)
Total	162 (100%)	28 (100%)	190 (100%)

Circumstances

Documentation of suicide circumstances focuses on a history of mental health, legal, financial, family, and work-related issues. Table 12 shows the most frequent documented circumstances of suicide by sex. More women (42.9%) than men (22.8%) had a history of suicide attempts, just as a history of thoughts or plans to attempt suicide (women 46.4%, men 25.9%).

Of the 18 suicides in which the victim disclosed their suicidal thoughts and/or plans to another person during the previous month, the proportions were similar between women (n=3, 10.7%) and men (n=15, 9.3%). Among suicide victims of both sexes, 66.7% shared their suicidal intentions with a family member. Additionally, three men (20.0%) communicated their intentions to either a current or former intimate partner. In 12.3% of male and 7.1% of female suicide victims, it was noted that health problem(s) appeared to have contributed to the death. Leaving a suicide note was more frequent in female suicide victims compared to males (21.4% and 11.1%, respectively). Finally, problems with a

current or former intimate partner seem to have contributed to suicide in a higher proportion in men (14.8%) than in women (7.1%).

Table 12. Suicide Circumstances: Puerto Rico, 2022

Suicide Circumstances	Sex of the victim		Total n=190
	Men n=162	Women n=28	
The victim had a history of suicide attempts before the fatal incident	37 (22.8%)	12 (42.9%)	49 (25.8%)
The victim had a history of suicidal thoughts, plans, or attempts	42 (25.9%)	13 (46.4%)	55 (28.9%)
The victim disclosed thoughts and/or plans of suicide to another person in the last month	15 (9.3%)	3 (10.7%)	18 (9.5%)
To a current or former partner	3 (20.0%)	0	3 (16.7%)
To another family member	10 (66.7%)	2 (66.7%)	12 (66.7%)
To a health worker	1 (6.7%)	0	1 (5.6%)
To another known person	1 (6.7%)	0	1 (5.6%)
To another unknown person	0	1 (33.3%)	1 (5.6%)
The victim's health problem(s) appear to have contributed to the death	20 (12.3%)	2 (7.1%)	22 (11.6%)
The victim left a suicide note	18 (11.1%)	6 (21.4%)	24 (12.6%)
Financial problems appear to have contributed to the death	8 (4.9%)	0	8 (4.2%)
The death of a family member or friend due to a cause other than suicide appears to have contributed to the death	9 (5.6%)	1 (3.6%)	10 (5.3%)
Work problems(s) appear to have contributed to the death	5 (3.1%)	1 (3.6%)	6 (3.2%)
Problems with an intimate partner or ex-partner that may have contributed to the suicide	24 (14.8%)	2 (7.1%)	26 (13.7%)

There can be multiple mental health circumstances in suicide victims. Table 13 shows the frequency of mental health-related circumstances documented in suicides that occurred in 2022. The most frequently

reported circumstance was that the victim was perceived by self or others as depressed (42.6% in males and 60.7% in females). The second most frequently reported circumstance was that the victim had been identified as having a current mental health problem (37.7% in men and 64.3% in women). A history of ever having been treated for a mental health problem was more frequent in women (35.7%) than in men (25.9%). Also, it is important to note that intimate partner problems are more frequent in men (14.8%) than in women (7.1%).

Table 13. Mental Health Circumstances in Suicides: Puerto Rico, 2022

Mental Health Circumstances in Suicides (n=190)	Sex of the victim		Total n=190
	Men n=162	Women n=28	
The victim was perceived by self or others to be depressed at the time of the injury	69 (42.6%)	17 (60.7%)	86 (45.3%)
The victim had been identified as currently having a mental health problem	61 (37.7%)	18 (64.3%)	79 (41.6%)
History of ever being treated for a mental health or substance abuse problem	42 (25.9%)	10 (35.7%)	52 (27.4%)
The victim was in treatment for a mental health problem or substance abuse problem	33 (20.4%)	7 (25.0%)	40 (21.1%)
Victims had alcohol dependence or an alcohol problem	26 (16.1%)	1 (3.6%)	27 (14.2%)
The victim had a non-alcohol-related substance abuse problem	25 (15.4%)	1 (3.6%)	26 (13.7%)
Intimate partner problem	24 (14.8%)	2 (7.1%)	26 (13.7%)

Mental Health Diagnosis and Suicides Related to Disasters

In 41.6% of all suicide victims (n=79), there was documentation of one to four mental health diagnoses at the time of the fatal event. Of these, men represented 37.7% (n=61) and women 64.3% (n=18). Of the 79 victims, 65.8% had a single diagnosis, 32.9% had two, and 1.3% (a single case) had four. The most frequent diagnosis was depression or dysthymia (77.0% in men and 72.2% in women), followed to a lesser extent by anxiety (21.3% in men and 22.2% in women) and schizophrenia (13.1% in men and 11.1% in women). Finally bipolar disorder was significantly more common in women (33.3%) than in men (6.6%). In 2022, no disaster-related suicides were reported.

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