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Reported History of Traumatic Brain Injury among Suicide Decedents: National Violent Death Reporting System, 2003 – 2017

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Abstract

Introduction: Traumatic brain injury (TBI) is a major cause of death and disability in the U.S., and research shows that individuals who suffer TBI have increased risk for suicide. This study examines the characteristics of suicide decedents, with a documented TBI history, using a database containing circumstantial data on suicides, and examines differences in TBI and non-TBI-related suicides within the general population and individuals with history of military service.

Methods: Logistic regression models were used to estimate 95% CI and AOR of suicide among those with and without a prior TBI using data from the 2003–2017 National Violent Death Reporting System (NVDRS) (analyzed in 2020).

Results: From 2003–2017, 203,157 suicide decedents were identified in NVDRS and 993 had a documented TBI prior to suicide. Among those with a documented TBI, a higher percentage were White, non-Hispanic. Firearm injuries were the most common method of suicide for both groups. Poisoning was more common among decedents with a prior TBI compared to those without. Males, those who are single, and those who served in the military were 1.4 times more likely to have a documented TBI history prior to the suicide. Almost one in five (18.9%) suicides documenting TBI occurred among individuals with a history of military service.

Conclusions: Comprehensive suicide prevention approaches are imperative. Healthcare providers can play a role in assessing and identifying patients at increased risk of suicide,

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including those who have experienced falls or injuries that often result in TBI, and provide tailored interventions or referrals.

Introduction

Traumatic brain injury (TBI) is a major cause of death and disability in the U.S.. In 2014, TBI contributed to more than 2.5 million emergency department (ED) visits, almost 300,000 hospitalizations, and 56,800 deaths.[1] Recent research found that suicide was the leading cause of TBI-related deaths, surpassing motor vehicle crashes.[2] TBI can be caused by a bump, blow, or jolt to the head or a penetrating head injury that disrupts normal brain function, and TBIs can range from mild (i.e., a brief change in mental status or consciousness) to severe (i.e., an extended period of unconsciousness). Previous research indicates that 12.1% of individuals have had a TBI with loss of consciousness (LOC) during their lifetime;[3] however this is likely an underestimate of TBI prevalence, as 80% of TBIs are classified as mild and may not cause LOC (e.g., most sports related concussions).[4] The potential for TBI to result in the disruption of normal brain function and cognitive, physical, and/or emotional symptoms may increase suicide risk among TBI survivors.[5] Indeed, a meta-analysis identified a 2-fold higher risk of suicide among more than 700,000 patients diagnosed with a mild TBI or concussion (the most common form of TBI)[6] compared to more than 6.2 million individuals who had never experienced a TBI.[7]

Additionally, a systematic review that examined suicidal ideation subsequent to experiencing a TBI highlighted research that documented increased risk of suicide among those with TBI in both the general population and some specific populations, including U.S. Veterans and military personnel.[8,9] While these findings shed light on the prevalence of suicide among those who have experienced TBI, follow-up time has been limited in previous studies; thus, it may be that suicide risk among people with history of TBI could be even greater if longitudinal studies with longer follow-up periods were considered. Further, few research studies have sought to ascertain the amount of time that passed between when TBIs were incurred and subsequent suicidal behavior; thus, the amount of time needed to follow individuals who have experienced TBI in order to understand whether risk for suicide decreases as time since TBI increases is unknown. Finally, little is known about whether there are differences in the demographics and characteristics surrounding the suicides of individuals who did and did not have a history of TBI. Understanding differences in decedents who did and did not previously experience TBI, as well as the amount of time that passed between TBI and suicide could help identify potential opportunities to buffer the risk of TBI on suicide.

Therefore, this study has multiple aims. First, the study aimed to examine the characteristics of decedents with a documented TBI history and later died by suicide. Second, it sought to identify differences in the demographics and characteristics of decedents with and without documented TBI prior to the suicide. Finally, given the documented higher suicide risk among Veterans and military personnel who have previously experienced TBI, this study seeks to examine differences in characteristics among decedents with and without documented TBI history prior to suicide for individuals who ever served in the military.

Methods

Study Sample

CDC's National Violent Death Reporting System (NVDRS) is an ongoing, state-based, active surveillance system that collects data on violent deaths, including suicides (defined as deaths resulting from the intentional use of force against oneself, classified by ICD-10 underlying cause of death codes X60−X84, Y87.0, and U03.17). This analysis included data from 34 states, four California Counties, the District of Columbia, and Puerto Rico, participating in NVDRS between 2003−2017. For more information about included states see Appendix A. NVDRS data are collected from three sources: death certificates, coroner/medical examiner (CME) reports, and law enforcement (LE) reports. The sources are linked for each incident to provide a comprehensive picture of the death. Trained data abstractors in NVDRS jurisdictions enter data into the web-based system and construct written narratives based on CME and LE reports. NVDRS was selected due to its inclusion of circumstantial data via narratives in addition to the provided demographic data. The demographic information and suicide cause and manner of death contained in NVDRS are obtained from the death certificate. This analysis used data that was collected from 2003 to 2017.

Measures

For this analysis, decedents aged 10 years and older with a documented TBI history who later died by suicide were identified through a systematic search of TBI-related keywords (Appendix A) contained in the CME and LE narratives using SAS (version 5.4; SAS Institute).[¶] Narratives were then reviewed and coded independently by two of five trained reviewers to ascertain whether the narratives indeed documented a TBI and the timeframe within which the TBI occurred with respect to the suicide (i.e., 30 days prior, past year, past 1–5 years, past 6–10 years, or ≥11 years). The reviewers were graduate degree level scientists who were trained on NVDRS, case ascertainment, and coding. Reviewer pairs coded each narrative independently and an overall kappa statistic assessing inter-rater reliability was computed for each pair. Cases were excluded if the TBI occurred at the time of the suicide (e.g., by gunshot wound, falling).

Demographic characteristics and time between TBI occurrence and suicide were examined for all decedents and decedents who ever served in the military. Ever served in the military is defined as current or former military personnel who served in one of the five-armed service branches (Air Force, Army, Coast Guard, Marine Corps, or Navy).

Statistical Analysis

Descriptive analyses of the number and percentage of deaths by demographics, timing and method of injury, and military status among decedents with or without a documented TBI history prior to suicide were conducted. Tests of proportions were performed to determine

[¶]A SAS program was created to search narratives for the following key terms: brain injury, TBI, traumatic brain injury, concussion, head injury, head trauma, hit head, skull injury, skull fracture, fracture of facial bones or face, and/or facial fracture. All cases were independently coded by two reviewers; all discrepancies were discussed and coded to consensus. More information on inclusion can be found in Appendix A.

the statistical difference between the proportion with and without prior TBI. Two-tailed p-values <0.05 were considered statistically significant. Logistic regression models were used to estimate aOR of suicide among those with and without a documented prior TBI. Stata Version 15 (Stata Corp LP, College Station, TX) was used to conduct statistical analyses in 2020.

Results

The overall kappa assessing inter-rater reliability coding of prior TBI was 0.887 (p=.001).[10] From jurisdictions participating in NVDRS from 2003 through 2017, 203,157 individuals aged ≥10 years died by suicide and of those, 993 individuals had a prior TBI reflected in the CME and/or LE narrative. The percentage of deaths among those with a documented TBI history who later died by suicide from 2003 to 2017 increased from 0.22% to 0.66% (data not reported).

Males comprised a greater percentage of decedents with a documented TBI history who later died by suicide compared with those without a documented TBI history (Table 1). Among decedents with a TBI history who later died by suicide, a higher percentage were White, non-Hispanic and a lower percentage were Black, non-Hispanic relative to decedents without a documented TBI. Although firearms were the most common method of suicide for both groups, poisoning was more common among decedents with a TBI history who later died by suicide compared to decedents without a TBI history. Among decedents without a TBI history who died by suicide, the percentages that were married or widowed were higher than those with a TBI history (36.49% and 6.04%, respectively vs. 30.48% and 1.94% respectively, p<.001). Among those who died by suicide, males, those who were single, and those who served in the military were 1.4 times as likely to have a documented TBI history compared to the referent (CI=1.1–1.6; CI=1.2–1.7; CI=1.2–1.7, respectively). Those who were black, non-Hispanic, aged 65 and older, or widowed were less likely to have a documented TBI history prior to suicide compared to the referent (aOR=0.4, CI=0.3–0.6; aOR=0.4, CI=0.3–0.7; aOR=0.5, CI=0.3–0.9), respectively). Among those who died by suicide, those who died by poisoning were 1.6 times (CI=1.4–2.0) as likely to have a documented TBI history compared to those who died by firearm.

Almost half (45.02%) of narratives documenting a TBI history did not indicate the date when the TBI occurred and 18.13% of documented TBIs had occurred within the past month or year of the suicide (Table 2); over 20% later died by suicide 6 or more years after the documented TBI occurred.

Of the 993 decedents with a TBI history who later died by suicide, 188 occurred among individuals with a history of military service (Table 3). Among decedents who had ever served in the military, a significantly higher percentage of individuals with documented TBI were aged 25–34 and 45–54 years compared with those without (26.06% vs. 9.55%, p<.001 and 23.40% vs. 15.79%, p=.0044, respectively) (Table 3). A significantly lower percentage of individuals who served in the military and had a documented TBI history were Black, non-Hispanic compared to those without a TBI history (0.53% vs. 5.39%, p=.0032). Comparatively, a significantly higher percentage of individuals who served in the military

and had a documented TBI history were Hispanic compared to those without a TBI history (5.85% vs. 2.85%, p=0.140). A significantly lower percentage of individuals who served in the military and had a documented TBI history were 65 years or older at the time of their death compared to those without a TBI history (11.70% vs. 41.47%, p<.001). A significantly higher percentage of individuals who served in the military and had a documented TBI history were single compared to those without a TBI history (26.88% vs. 16.56%, p<.001). However, a significantly lower percentage of individuals who served in the military and had a documented TBI history were widowed compared to those without a TBI history (3.76% vs. 12.12%, p<.001). Firearms were the most common mechanism of suicide overall among decedents who had served in the military; however, a lower percentage of military decedents with TBI history died by firearm compared to their counterparts without a TBI history (53.72% vs. 68.75%, p=.0003). Meanwhile, a higher percentage of military decedents with a TBI history died by poisoning compared to those without a TBI history (18.62% vs. 10.18%, p<.001).

Discussion

NVDRS, an active state-based surveillance system that contains circumstantial data on suicides was utilized to examine differences among decedents with and without a documented TBI history who later died by suicide. Although NVDRS was not designed to capture TBI prevalence, the CME and LE narratives designed to document the various circumstances that contributed to suicides contained in the system allow for the examination of differences among decedents with and without a documented TBI history who later died by suicide.

TBI is considered to be a risk factor for suicide;[5,11] however, suicides preceded by TBI within NVDRS were rare, as less than 1% of all suicides examined have a TBI history documented. This finding is in line with results of a longitudinal study of a large cohort of patients who sustained moderate-to-severe TBI having a 0.17% cumulative rate of suicide over 20 years follow up post injury.[12] Furthermore self-reported past-year suicide attempts among this cohort of patients were at least 2-times higher (1.1–1.7%) than in the general population (0.6%) during years 1–15 post injury indicating that although a rare outcome among TBI survivors, suicidal behavior can persist many years after the initial brain injury.[13] Of note, the percentage of deaths among those with a documented TBI history who later died by suicide increased from 2003 (0.22%) to 2017 (0.66%). This increase may be related to an increased awareness of TBI as a contributing factor to suicide.[14] This could result in more frequent documentation in CME or LE reports, and VDRS abstractors potentially including TBI more often in NVDRS narratives. Additionally, increased awareness of the sequelae of TBI particularly among Veterans may have resulted in more frequent reporting in source documents.[15]

Although deaths among those with a documented TBI history who later died by suicide is rare in this dataset, TBI remains a serious public health concern and individuals with TBI display higher rates of suicidal ideation and past-year suicide attempts compared with the general population.[12] Previous research has indicated that military personnel demonstrate an increased risk for TBI.[16] While the results demonstrate that military service did not

differ among those with and without a TBI history, almost 20% of the suicides in this study known to have involved a TBI occurred among individuals with a history of military service. History of TBI broadly spanned age groups, marital status, and racial/ethnic groups among those who had served in the military, suggesting that TBI may be a pervasive issue in the military. However, prior research suggesting that TBI was 92% more common in deployment settings compared to non-deployment settings and among specific arms of the military may help to target TBI prevention strategies for those serving in the military.[17]

Additionally, recent research has suggested that TBI risk among military personnel may be higher now than ever before given improvements in technology and the expanded use of weapons, such as the improvised explosive device, which was commonly used during recent conflicts in Iraq and Afghanistan.[18] Taken together, these findings can be used to help inform suicide prevention efforts among military personnel and Veterans. For example, healthcare providers and suicide prevention gatekeepers can be educated to assess for suicide risk in this population, particularly among those who have experienced TBI, so that proper referral and treatment can take place, if needed.

Research continues to emerge on the impact of risk factors on suicide. Previous studies suggest that the increased risk of suicide among individuals with TBI may be related to comorbid risk factors, including mental health sequelae (e.g., depression, substance abuse, post-traumatic stress disorder).[11,19] Suicide risk among those with TBI may also be associated with increased availability of lethal means, such as prescription and illicit drugs (for those who may have been prescribed medication for their TBI).[20,21] Our findings indicating that poisoning was significantly more common among decedents with a TBI history who later died by suicide than those without a TBI history for both those with and without a history of military service, combined with the fact that almost one in five decedents with TBI experienced the TBI within one year of their suicide, may point to increased access to, and potentially misuse of, prescription medications for TBI. The opioid overdose epidemic began to escalate in the late 1990s, with prescription opioids contributing substantially to the epidemic during much of the time period examined in this study.[22,23]

Prior research suggests that individuals with TBI in both the general population and military may be prescribed opioids often and also may be at increased risk of experiencing opioid use disorder and overdose.[20, 24, 25] Further, overdose risk, including intentional overdose risk, may be exacerbated among those with TBI, as they may experience other risk factors concurrently, such as mental health conditions, chronic pain, and substance use disorders.[24] To help address these risks, healthcare providers can educate patients about both TBI and its sequelae, assess suicide risk among patients impacted by TBI, and provide counseling on reducing access to lethal means among persons at risk for suicide; this may be particularly important in the first year after a TBI occurs given this study's findings and previous research.[11, 26]

The findings from this study are subject to several limitations. First, the availability, completeness, and timeliness of data varies by state and jurisdiction. Second, some data from CME and LE narratives are limited to information volunteered by next-of-kin, friends, and acquaintances during the death investigation. Thus, only information known to these

informants or gathered during the course of the CME or LE investigation were used to populate reports. NVDRS was not designed to collect this information, thus the 993 suicide decedents with a prior TBI is likely an underestimate, and severe TBIs are more likely to be recalled in the narratives. However, this study was unable to determine the severity of the prior TBI and thus no conclusions can be drawn about severity and risk. Third, the narratives did not include information to determine the lethality of prior suicide attempts or the number of prior attempts among suicide decedents. Fourth, while NVDRS data includes various circumstances related to suicide, it does not include circumstances related to TBI, such as whether decedents suffered TBI specifically as a result of military service, thus other potential correlates of both TBI and suicide are not measured in the analyses. Examples of other potential correlates that may occur after a TBI include PTSD, depression, and substance use disorder. Finally, this study used data from NVDRS jurisdictions that participated anytime between 2003–2017; thus, the results are not nationally representative. The number of jurisdictions included in this analysis increased over time, for example five jurisdictions began data collection in 2003 and 14 jurisdictions began data collection in 2014. Analysis was conducted to compare trends for each cohort of jurisdictions. Given that the trends were similar between cohorts, the combined data from 2003–2017 was used.

Conclusions

There are many factors that contribute to suicide and a comprehensive suicide prevention approach accounts for individual, relationship, community, and societal risk factors. TBI is but one individual-level factor that may increase suicide risk; however, it may be associated with risk factors at other levels of the social ecology, such as relationship problems, job problems, access to lethal means, and lack of mental health insurance coverage parity. CDC's technical package for suicide prevention outlines a number of prevention strategies based on the best available evidence. Strategies that strive to create protective environments by reducing access to lethal means among persons at risk for suicide and identify and support people at risk of suicide by providing effective gatekeeper training and treatment may be especially beneficial strategies for preventing suicide among individuals with TBI.[27] Healthcare providers can play a vital role in assessing and identifying patients at increased risk of suicide, including those who have experienced falls or other injuries that often result in TBI, so as to recommend and provide tailored interventions or linkage to additional care and resources for TBI.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1:

Analyses[a] examining deaths among suicide decedents with and without documented prior TBI, 2003–2017[b]

	Documented Prior TBI (n=993)		No Documented Prior TBI (n=202,164)			
	No.	**%**	**No.**	**%**	**p-value**	**aOR (95% CI)**
Sex						
Male	**808**	**81.37**	**157,098**	**77.71**	0.0057	**1.4 (1.1–1.6)**
Female	**185**	**18.63**	**45,007**	**22.26**	0.0060	Referent
Race/Ethnicity						
White, non-Hispanic	**860**	**86.61**	**168,155**	**83.18**	0.0039	Referent
Black, non-Hispanic	**29**	**2.92**	**12,614**	**6.24**	0.0000	**0.4 (0.3–0.6)**
American Indian/Alaskan Native, non-Hispanic	13	1.31	2,561	1.27	0.9257	0.9 (0.5–1.6)
Asian, non-Hispanic	12	1.21	3,737	1.85	0.1349	0.6 (0.4–1.1)
Other, non-Hispanic	14	1.41	4,008	1.98	0.1963	0.7 (0.4–1.2)
Hispanic[c]	65	6.55	11,089	5.49	0.1433	1.1 (0.8–1.4)
Age (years)						
10–17	35	3.52	6,404	3.17	0.5219	Referent
18–24	101	10.17	21,075	10.43	0.7943	0.9 (0.6–1.3)
25–34	**205**	**20.64**	**32,286**	**15.97**	0.0001	1.2 (0.8–1.7)
35–44	184	18.53	34,902	17.27	0.2926	1.0 (0.7–1.5)
45–54	**233**	**23.46**	**42,140**	**20.85**	0.0427	1.0 (0.7–1.5)
55–64	165	16.62	32,501	16.08	0.6442	1.0 (0.6–1.4)
65+	**70**	**7.05**	**32,829**	**16.24**	0.0000	**0.4 (0.3–0.7)**
Military Status[d]						
Yes	188	19.05	35,579	17.69	0.2711	**1.4 (1.2–1.7)**
No	762	77.20	152,578	75.87	0.3554	Referent
Marital Status						
Married	**299**	**30.48**	**72,732**	**36.49**	0.0001	Referent
Single	**427**	**43.53**	**71,115**	**35.68**	0.0000	**1.4 (1.2–1.7)**
Widowed	**19**	**1.94**	**12,041**	**6.04**	0.0000	**0.5 (0.3–0.9)**
Divorced	236	24.06	43,449	21.80	0.0818	**1.2 (1.0–1.5)**
Method of injury						
Firearm	**429**	**43.20**	**100,127**	**49.53**	0.0001	Referent
Hanging/strangulation/suffocation	253	25.48	52,056	25.75	0.8455	1.03 (0.9–1.2)
Poisoning	**217**	**21.85**	**31,471**	**15.57**	0.0000	**1.6 (1.4–2.0)**
All other	94	9.47	18,510	9.16	0.7352	1.2 (1.0–1.5)

NOTE: NVDRS= National Violent Death Reporting System, TBI=Traumatic Brain Injury; Boldface indicates statistical significant (p<0.05)

[a]Excludes decedents with missing or unknown information. Percentages may not total to 100% due to rounding.

[b]In 2003, NVDRS began data collection with six participating states (Maryland, Massachusetts, New Jersey, Oregon, South Carolina, and Virginia). Seven states (Alaska, Colorado, Georgia, North Carolina, Oklahoma, Rhode Island, and Wisconsin) began data collection in 2004, three (Kentucky, New Mexico, and Utah) in 2005, two (Ohio and Michigan) in 2010, and 14 (Arizona, Connecticut, Hawaii, Illinois, Indiana, Iowa,

Kansas, Maine, Minnesota, New Hampshire, New York, Pennsylvania, Vermont, and Washington) in 2015. Eight states (Alabama, California, Delaware, Louisiana, Missouri, Nebraska, Nevada, and West Virginia), the District of Columbia, and Puerto Rico began data collection in 2017. The final data includes data from 34 states, Four California Counties, the District of Columbia, and Puerto Rico.

[c] Includes persons of any race

[d] Military status is defined as ever served in the military

Table 2:

Analyses of suicides by time between TBI occurrence and suicide, 2003-2017[a]

	No.	%
Past month	72	7.25
Past year	108	10.88
Past 1–5 years	152	15.31
Past 6–10 years	57	5.74
≥ 11 years	157	15.81
No timing indicated	447	45.02

NOTE: NVDRS= National Violent Death Reporting System, TBI=Traumatic Brain Injury

[a]In 2003, NVDRS began data collection with six participating states (Maryland, Massachusetts, New Jersey, Oregon, South Carolina, and Virginia). Seven states (Alaska, Colorado, Georgia, North Carolina, Oklahoma, Rhode Island, and Wisconsin) began data collection in 2004, three (Kentucky, New Mexico, and Utah) in 2005, two (Ohio and Michigan) in 2010, and 14 (Arizona, Connecticut, Hawaii, Illinois, Indiana, Iowa, Kansas, Maine, Minnesota, New Hampshire, New York, Pennsylvania, Vermont, and Washington) in 2015. Eight states (Alabama, California, Delaware, Louisiana, Missouri, Nebraska, Nevada, and West Virginia), the District of Columbia, and Puerto Rico began data collection in 2017. The final data includes data from 34 states, Four California Counties, the District of Columbia, and Puerto Rico.

Table 3:

Analyses examining decedents[a] with a history of military service[b], 2003–2017[c]

	Documented TBI (n=188)		No Documented TBI (n=35,579)		
	No.	**%**	**No.**	**%**	**p-value**
Sex					
Male	179	95.21	34,324	96.47	0.3508
Female	9	4.79	1,255	3.53	0.3508
Race/Ethnicity*					
White, non-Hispanic	170	90.43	31,785	89.34	0.6293
Black, non-Hispanic	**1**	**0.53**	**1,918**	**5.39**	0.0032
American Indian/Alaskan Native, non-Hispanic	3	1.60	210	0.59	0.0739
Asian, non-Hispanic	2	1.06	210	0.59	0.3988
Other, non-Hispanic	1	0.53	441	1.24	0.3811
Hispanic[d]	**11**	**5.85**	**1,015**	**2.85**	0.0140
Age (years)					
10–17	0	0.00	2	0.01	0.9181
18–24	**14**	**7.45**	**1,546**	**4.35**	0.0378
25–34	**49**	**26.06**	**3,397**	**9.55**	0.0000
35–44	**33**	**17.55**	**3,728**	**10.48**	0.0016
45–54	**44**	**23.40**	**5,619**	**15.79**	0.0044
55–64	26	13.83	6,531	18.36	0.1096
65+	**22**	**11.70**	**14,755**	**41.47**	0.0000
Marital Status					
Married	84	45.16	16,446	46.62	0.6721
Single	**50**	**26.88**	**5,841**	**16.56**	0.0002
Widowed	**7**	**3.76**	**4,274**	**12.12**	0.0005
Divorced	45	24.19	7	24.71	0.8590
Method of injury					
Firearm	**101**	**53.72**	**24,461**	**68.75**	0.0000
Hanging/strangulation/suffocation	**38**	**20.21**	**5,236**	**14.72**	0.0340
Poisoning	**35**	**18.62**	**3,622**	**10.18**	0.0001
All other	14	7.45	2,260	6.35	0.5395

NOTE: NVDRS= National Violent Death Reporting System, TBI=Traumatic Brain Injury; Boldface indicates statistical significant (p<0.05)

[a] Excludes decedents with missing or unknown information. Percentages may not total to 100% due to rounding.

[b] Military status is defined as ever served in the military

[c] In 2003, NVDRS began data collection with six participating states (Maryland, Massachusetts, New Jersey, Oregon, South Carolina, and Virginia). Seven states (Alaska, Colorado, Georgia, North Carolina, Oklahoma, Rhode Island, and Wisconsin) began data collection in 2004, three (Kentucky, New Mexico, and Utah) in 2005, two (Ohio and Michigan) in 2010, and 14 (Arizona, Connecticut, Hawaii, Illinois, Indiana, Iowa, Kansas, Maine, Minnesota, New Hampshire, New York, Pennsylvania, Vermont, and Washington) in 2015. Eight states (Alabama, California, Delaware, Louisiana, Missouri, Nebraska, Nevada, and West Virginia), the District of Columbia, and Puerto Rico began data collection in 2017. The final data includes data from 34 states, Four California Counties, the District of Columbia, and Puerto Rico.

[d] Includes persons of any race