

Youth Suicide in Arizona:

*A special report prepared for the
Walter Cronkite School of Journalism*

Arizona Violent Death Reporting System

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Suicides Involving Youth Aged 24 Years and Younger

The analyses in this report primarily depended on 6,752 suicide decedents occurring in Arizona from January 1, 2015 through December 31, 2019. These cases represented all of the deaths attributed to suicide on the death certificates that occurred within Arizona. Some analyses, specifically those relying on examining the individual and incident-based circumstances surrounding the suicide, depended on a fewer number of cases, as data from medical examiners and law enforcement agencies were not comprehensively made available by the respective responsible agency for every suicide event. The CDC standards allow for 15 months from the end of the calendar year in which a death occurred for data collection and abstraction to be completed. Given this, data for 2015, 2016, and 2017 are presently considered complete, and 2018 data are near completion. For those suicide cases occurring in 2019, most of the abstractions are not complete, and analyses of circumstances are unreliable and subject to change as additional data are collected and abstracted. A total of 1,714 (25.4%) of the original cases (N=6,752) were without circumstance data. The analyses of circumstance data in this report, therefore, relied on 5,038 cases.

The analyses for this report focus on a subset of people based on their age at the time of their death. The United Nations (UN) defines Youth as individuals aged 15-24 years. The UN uses this for comparative statistical purposes, and this same measure is not uncommon in public health analyses in the United States. For this report, we define Youth as those decedents aged 24 years or younger (n=902, 13.4%); therefore, non-Youth are those decedents aged 25 years or older (n=5,850, 86.6%). Where presented, rates are calculated using the U.S. Census American Community Survey 5-year estimates, with the number of decedents per 100,000 population.

Exhibit 1 shows the number of suicides per year from 2015-2019 by Youth status. Rates are calculated by the number of suicides per 100,000 population. For the years 2015-2018, estimates published by the U.S. Census Bureau's American Community Survey (ACS) were used. Estimates from this source were not available for 2019 at the time of this report's publication, and a derived population projection from the ACS data was used instead. Notably, the only significant difference across years and within Youth status was the higher rate of suicide among Youths in 2018 (9.1 per 100,000 population) compared to any other year (e.g., 7.9 per 100,000 in 2017).

Exhibit 1: Annual Suicides by Youth Status, 2015-2019 (N=6,752)

	non-Youth			Youth		
	n	%	Rate	n	%	Rate
2015	1115	19.1	25.6	172	19.1	7.5
2016	1103	18.9	24.8	162	18.0	7.1
2017	1153	19.7	25.5	182	20.2	7.9
2018	1247	21.3	25.8	213	23.6	9.1
2019 †	1232	21.1	23.7	173	19.2	7.3
Total	5850	100.0	25.1	902	100.0	7.8

* Statistically significant at $p \leq .05$

Rates are calculated using U.S. Census American Community Survey 5-Year Estimates at number of occurrences per 100,000 population.

† Population estimates for 2019 were not available at the time of analysis; projected estimates are used instead.

Demographics and comparison

There were 902 (13.4%) suicides of Youth aged 24 years or younger. There was no significant difference between Youths and non-Youths across sex, as three-quarters of suicide victims were male among both Youth (n=713; 79.0%) and non-Youth (n=4535; 77.5%) populations (see Exhibit 1). Additionally, for both Youth and non-Youth victims, the rate of suicide per 100,000 population was more than three times higher for males than for females.

	non-Youth			Youth		
	n	%	Rate	n	%	Rate
Male	4535	77.5	38.3	713	79.0	11.9
Female	1315	22.5	10.6	189	21.0	3.3
	5850	83.1	24.2	902	12.8	7.7

* Statistically significant at $p \leq .05$

Rates are calculated using U.S. Census American Community Survey 5-Year Estimates at number of occurrences per 100,000 population.

Youth suicide victims were significantly more racially/ethnically diverse than non-Youth suicide victims (Exhibit 3). Specifically, 63.6% (n=3718) of non-Youth suicide victims were white, non-Hispanic compared to just 39.8% (n=359) of Youths. Perhaps most poignantly, Native American Youths represented 14.6% (n=132) of all Youth suicides, which was more than three times the proportion Native Americans represented among non-Youths (4.5%, n=265).

	non-Youth		Youth	
	n	%	n	%
White, non-Hispanic	3718	63.6	359	39.8
Black or African American	111	19.1	43	4.8
Native American	265	4.5	132	14.6
Asian or Pacific Islander	<5	na	<5	na
Hispanic, any race	678	11.6	242	26.8
Other †	1021	17.5	105	11.6

† Includes multiracial and unspecified race/ethnicity

* Statistically significant at $p \leq .05$

Rates are calculated using U.S. Census American Community Survey 5-Year Estimates at number of occurrences per 100,000 population.

Exhibit 4 shows the method of death for suicide victims. There was a statistically significant difference between Youths and non-Youths in the means used to carry out the suicide. Firearms were the dominant means for both groups, with the majority (n=3430; 58.6%) of non-Youths and half of the Youth population (n=448; 49.7%) using a firearm. The most pronounced differences between non-Youth and Youth victims were in hangings, strangulations, and suffocation (22.3% vs. 38.0%, respectively) and poisonings (13.9% vs. 5.4%, respectively).

Exhibit 4: Method of Death* by Youth Status, 2015-2019 (N=6,752)

	non-Youth		Youth	
	n	%	n	%
Firearm	3430	58.6	448	49.7
Sharp force trauma/instrument	101	1.7	<5	0.3
Blunt force trauma/instrument	134	2.3	46	5.1
Hanging, strangulation, or suffocation	1304	22.3	343	38.0
Poisoning	815	13.9	49	5.4
Other †	66	1.1	13	1.4

* Statistically significant at $p \leq .05$

† Includes falls, drowning, fire/burns, motor vehicle collisions, and other means.

Note: CDC policy dictates that results where the N<5 for a given cell, the exact number must be suppressed, unless it is actually N=0. These entries are displayed as "<5" in the table.

Locations of suicidal injury

Upon examining injury location between Youths and non-Youths, we did not find suicides to be proportionally distributed across counties. Comparing the rate of suicide per 100,000 population across counties by Youth status, we noted significant differences. Statewide, non-Youths experienced a higher suicide rate than Youths (25.1 and 7.8, respectively). Among Youths, Gila (20.8), Navajo (19.3), Coconino (18.7), Apache (16.8), La Paz (16.7), and Mohave (12.0) counties presented the most substantial concern, each with more than double the Arizona statewide suicide rate for this age group (see Exhibit 5).

Exhibit 5: County of Injury* by Youth Status, 2015-2019 (N=6,752)

	non-Youth			Youth		
	n	%	Rate	n	%	Rate
Apache	73	1.2	32.7	23	2.5	16.8
Cochise	133	2.3	30.1	17	1.9	8.6
Coconino	189	3.2	45.6	54	6.0	18.7
Gila	97	1.7	49.5	15	1.7	20.8
Graham	21	0.4	17.9	5	0.6	6.9
Greenlee	9	0.2	30.4	<5	na	5.8
La Paz	48	0.8	60.0	<5	na	16.7
Maricopa	2964	50.7	20.9	457	50.7	6.3
Mohave	334	5.7	42.5	30	3.3	12.0
Navajo	149	2.5	42.5	38	4.2	19.3
Pima	905	15.5	26.4	154	17.1	9.1
Pinal	331	5.7	22.5	47	5.2	7.1
Santa Cruz	24	0.4	16.3	<5	na	4.6
Yavapai	388	6.6	44.8	26	2.9	9.8
Yuma	139	2.4	21.2	20	2.2	5.2
Unknown †	46	0.8	na	7	0.8	na
ARIZONA	5850	100.0	25.1	902	100.0	7.8

* Statistically significant at $p \leq .05$

† Unknown Arizona county

Note: CDC policy dictates that when the $N < 5$ for a given results cell, the exact number must be suppressed unless it is actually $N = 0$. These entries are, therefore, displayed as "<5" and "na" in the table.

Rates are calculated using U.S. Census American Community Survey 5-Year Estimates at number of occurrences per 100,000 population.

Exhibit 6 shows the results examining the type of location where the injury occurred, such as a residential home, the street, a commercial business, etc. There were no significant differences between Youths and non-Youths in terms of the type of location where the suicidal injury occurred.

Exhibit 6: Type of Location of Injury by Youth Status, 2015-2019 (N=6,752)

	non-Youth		Youth	
	n	%	n	%
House or apartment	4201	71.8	612	67.8
Street/road, highway, alley	200	3.4	34	3.8
Motor vehicle	283	4.8	50	5.5
Commercial establishment (bar, store, service station, etc.)	37	0.6	<5	na
Parking lot or parking garage	86	1.5	17	1.9
Jail, prison, group home, shelter, other supervised residential facility	98	1.7	7	0.8
Park, playground, other public use area	57	1.0	15	1.7
Natural outdoor area	257	4.4	53	5.9
Hotel or motel	147	2.5	11	1.2
Other	428	7.3	86	9.5
Unknown	56	1.0	13	1.4

* Statistically significant at $p \leq .05$

Note: CDC policy dictates that when the $N < 5$ for a given results cell, the exact number must be suppressed, unless it is actually $N = 0$. These entries are, therefore, displayed as "<5" in the table.

Circumstances of the victim and incident

Data are collected detailing the circumstances and characteristics of the individual suicide victims and the conditions surrounding or directly influencing the incident. Exhibit 7 below displays the proportion of suicide victims for whom the given circumstance was present. It should be noted that circumstances are not mutually exclusive, and any particular decedent could have any number or combination of circumstances present for their death.

Overall, there were no significant differences between Youths and non-Youths in mental health circumstances. More problems with alcohol and other addictions were reported for non-Youths, but both groups were very similar in the frequency of drug abuse/misuse. Specifically, non-Youths were more than twice as likely to have had an alcohol problem (20.2% and 8.5%, respectively).

Youths were significantly more likely to have interpersonal relationship problems than non-Youths. Specifically, more family relationship, intimate partner, and other relationship problems were reported for Youths. Conversely, non-Youths were more commonly reported to have experienced life stressor problems than Youths, except for problems at school, as 9.3% ($n=61$) of Youths experienced this stressor in the time shortly before their death compared to just 0.3% ($n=13$) of non-Youths.

Youths were more likely to have had a history of suicidal thoughts than non-Youths (52.0% vs. 48.5%, respectively).

Exhibit 7: Circumstances of Suicide Victims in Arizona, by Youth Status (N=5,038)

	Non-Youth (n=4383)		Youth (n=656)		Total (5038)	
	N	%	N	%	N	%
Mental Health						
Current Mental Health Problem	2058	47.0	286	43.6	2344	46.5
Current Depressed Mood	1639	37.4	234	35.7	1873	37.2
Ever Treated for Mental Illness or Substance Misuse	1359	31.0	200	30.5	1559	30.9
Current Treatment for Mental Illness or Substance Misuse*	1030	23.5	128	19.5	1158	23.0
Any Mental Health Problem*	2787	63.6	413	63.0	3200	63.5
Substance Abuse / Addiction						
Alcohol Problem*	886	20.2	56	8.5	942	18.7
Other Substance Problem	805	18.4	125	19.1	930	18.5
Other Addiction (gambling, sexual, etc.)	33	0.8	<5	na	34	0.7
Any Addiction Problem*	1417	32.3	159	24.2	1576	31.3
Interpersonal						
Family Relationship Problem*	361	8.2	122	18.6	483	9.6
Intimate Partner Problem*	1135	25.9	200	30.5	1335	26.5
Other Relationship Problem*	78	1.8	27	4.1	105	2.1
Perpetrator of Interpersonal Violence in Past Month	124	2.8	15	2.3	139	2.8
Victim of Interpersonal Violence in Past Month	20	0.5	<5	na	23	0.5
Suicide of Friend/Family in Past 5 Years	88	2.0	16	2.4	104	2.1
Other Death of Friend/Family*	303	6.9	26	4.0	329	6.5
Any Interpersonal Problem*	1717	39.2	339	51.7	2056	40.8
Life Stressor						
Physical Health Problem*	1225	27.9	19	2.9	1244	24.7
Job Problem*	447	10.2	42	6.4	489	9.7
Recent Criminal Related Legal Problem	314	7.2	43	6.6	357	7.1
Other Legal Problems*	145	3.3	<5	na	149	3.0
Financial Problem*	467	10.7	22	3.4	489	9.7
School Problem*	13	0.3	61	9.3	74	1.5
Eviction or Loss of Home*	181	4.1	15	2.3	196	3.9
Any Life Stressor*	2181	49.8	169	25.8	2350	46.6
Suicide Event						
History of Suicide Attempts	1028	23.5	153	23.3	1181	23.4
Disclosed Intent to Complete Suicide	1331	30.4	203	30.9	1534	30.4
History of Suicidal Thoughts*	2127	48.5	341	52.0	2468	49.0
Any Indication of Suicide	2590	59.1	394	60.1	2984	59.2

* Statistically significant at $p < .05$

Note: CDC policy dictates that when the $N < 5$ for a given results cell, the exact number must be suppressed unless it is actually $N = 0$. These entries are, therefore, displayed as "<5" and "na" in the table. Circumstance characteristics are not mutually exclusive, and any particular victim may have any number of circumstances present.