

*Suicide and Self-Injury
Among Pennsylvania Youth
(Ages 10-24)*

Violence and Injury Prevention Program

Pennsylvania Department of Health

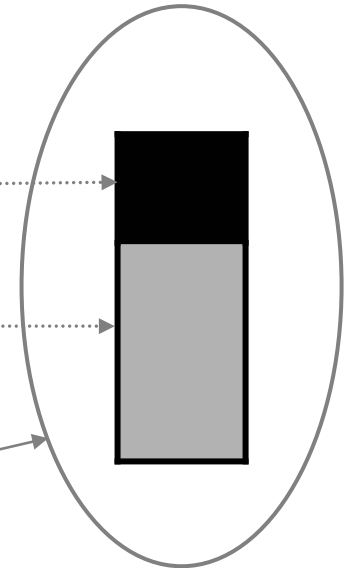
Bureau of Health Promotion and Risk Reduction



Data Sources and Terminology:

There are two main data sources used for self-inflicted injury, each illustrated in a distinct color as in the graphic at right.

- Suicides, or fatal self-injuries, are taken from PA death certificates.
- Non-fatal self-injury numbers are derived solely from PA inpatient hospitalization records – *note that this number does not include any emergency room visits or self-injuries that did not require treatment.*
- ‘Self-injury’ here refers to the sum of fatal and non-fatal self-injury; we define self-injury to apply only for populations age 10 and older.



Important to note is that non-fatal self-injury may not equate to a ‘suicide attempt’ – for example, youths who cut themselves may not be truly attempting to end their lives.

We only look at the outcome of self-injury events; whether fatal (suicide) or non-fatal (hospitalization), we do not differentiate based on suicidal intent.

All data in this presentation is from Pennsylvania over the seven-year period 2000-2006. Observations about general suicide and self-injury behavior are limited to this window.

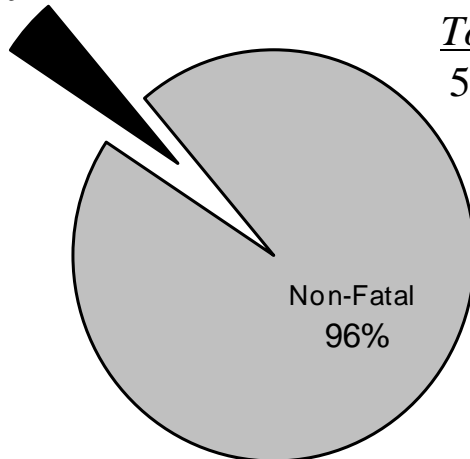
General Self-Injury Trends:

- Suicide is the second leading causes of death for males ages 10-44 and fourth for females.
- For every 1 female suicide, there are 22 non-fatal self-injury inpatient hospitalizations.
- For every 1 male suicide, there are 3.5 non-fatal self-injury inpatient hospitalizations.

Most self-injury events, for either gender, are ultimately non-fatal.

**Female Self-Injury,
PA 2000-2006**

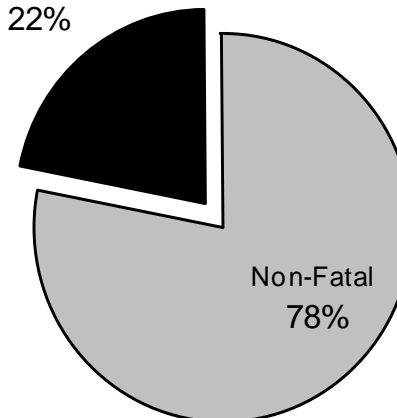
Fatal
4%



Total: average of
5,500 self-injury
events per year

Male Self-Injury, PA 2000-2006

Fatal
22%



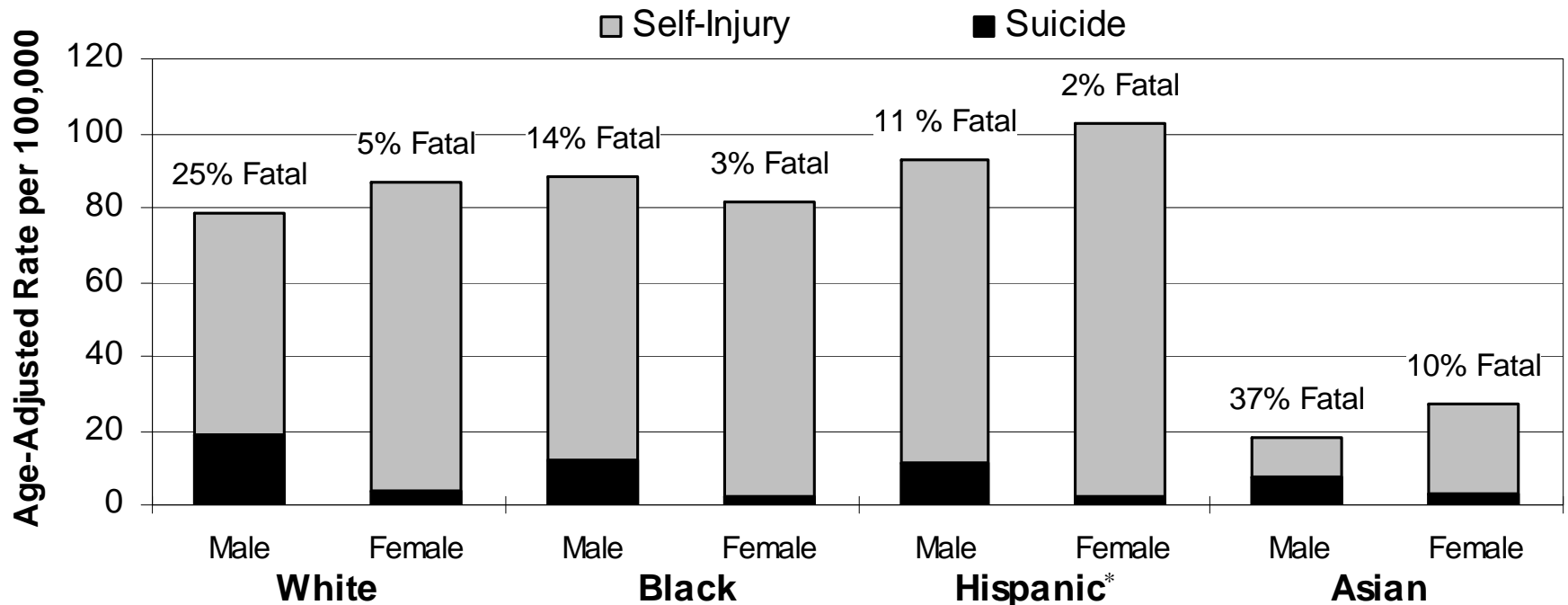
Total: average of
4,900 self-injury
events per year

Race and Ethnicity:

- Hispanics show the highest rates of self-injury.
- Whites show the highest rates of suicide.
- Asians show the highest overall percentage fatality.
- Blacks show higher self-injury rates for males than for females.

$$\% \text{ Fatality} = \frac{\# \text{ Fatal Self-Injuries}}{\text{Total \# Self-Injuries}}$$

Rates of Self-Injury and Suicide by Race and Ethnicity, PA 2000-2006



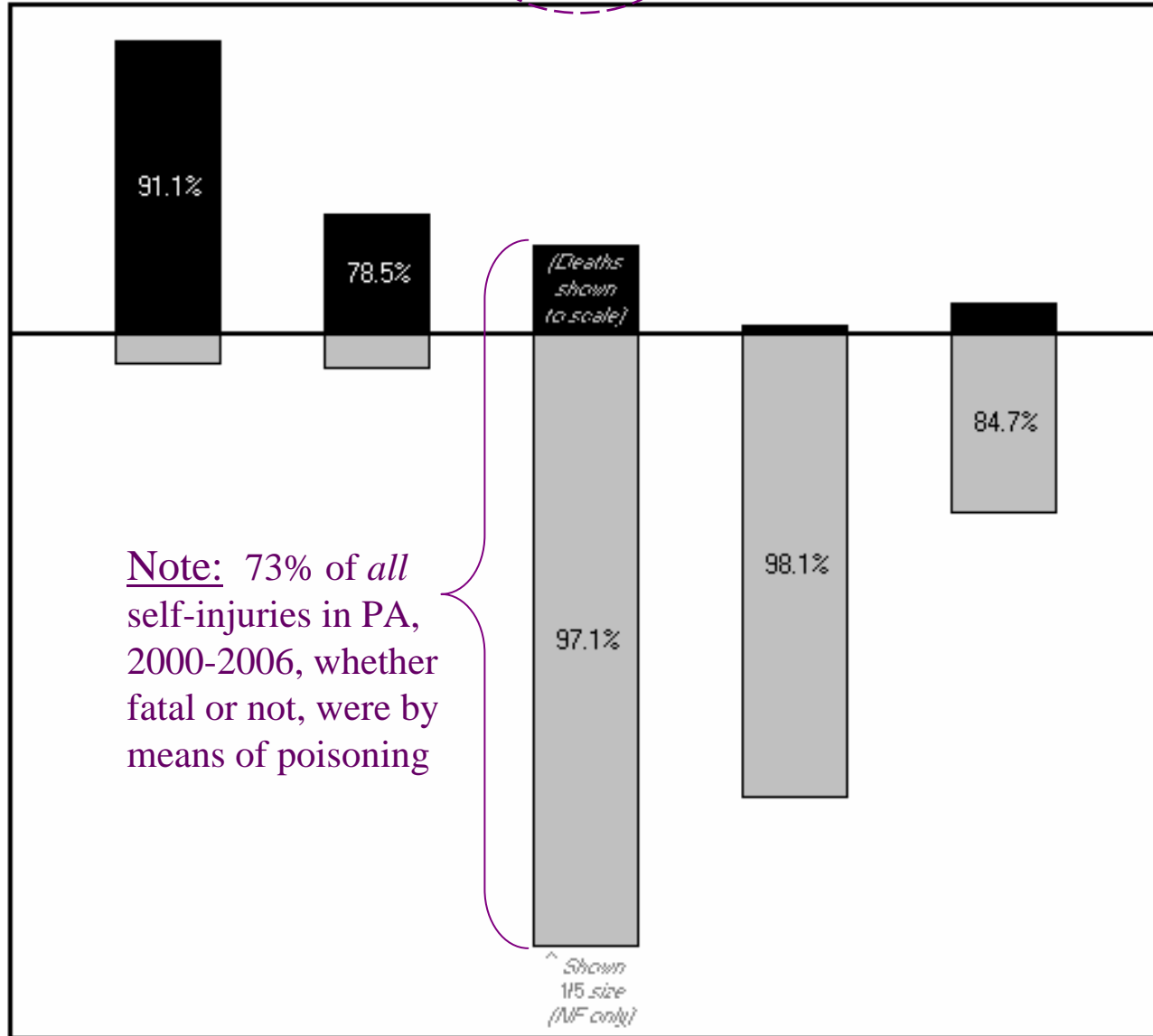
*Hispanics may be of any race.

Self-Inflicted Injury, PA 2000-2006

Method	Count
Firearm	5,469
Hanging	2,632
Poisoning	53,271
Cutting	7,982
Other	3,543

FATAL

NON-FATAL



Methods:

- Firearms have the highest percentage fatality of any major self-injury method, followed by hanging.
- Self-poisoning and cutting have among the lowest fatality percentage (2-3%).

Not all groups use the same methods for self-injury

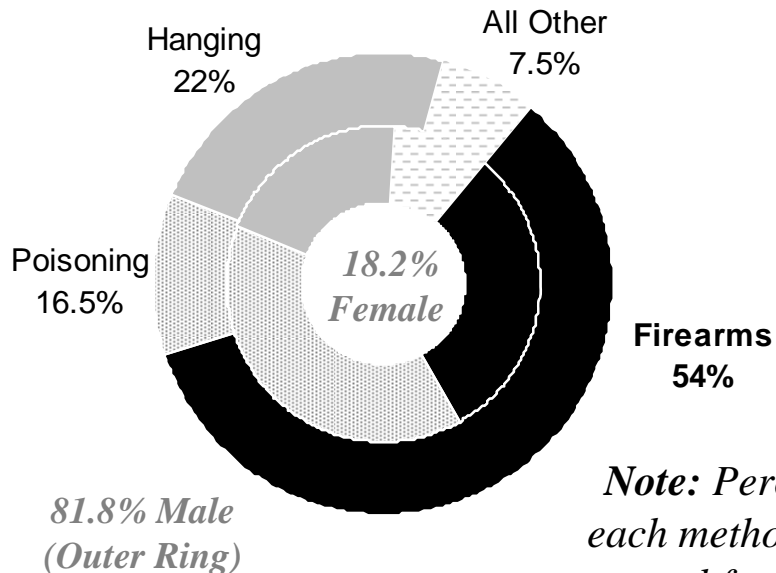
- All else being equal, groups using highly lethal methods for self-injury will suffer higher suicide rates.

Method and Outcome by Gender:

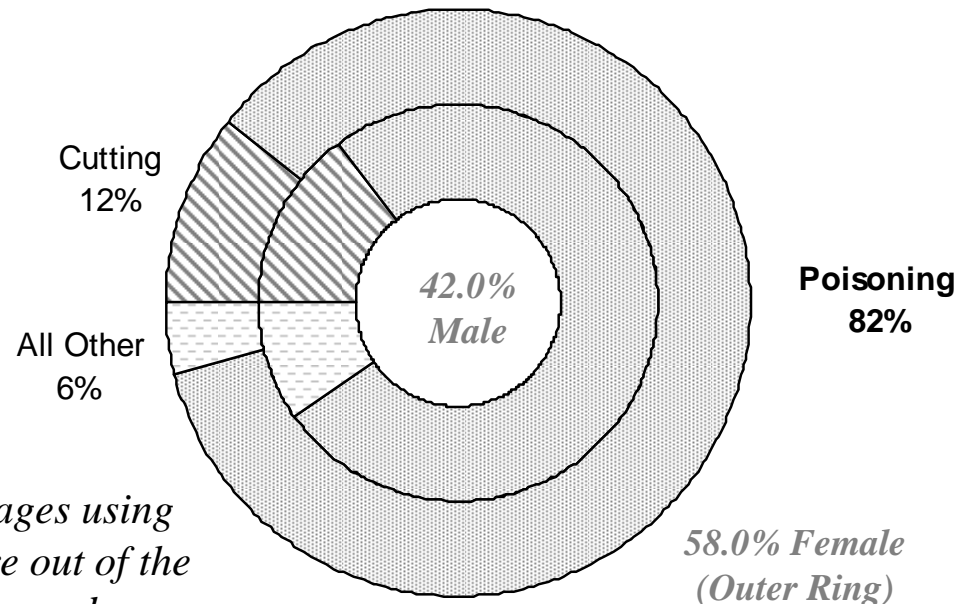
- Males dominate suicides, largely due to higher preference for firearms compared to females.
- Females outnumber males among non-fatal self-injuries, specifically non-fatal poisonings.
- Males show higher percentage fatality than females even when using the same method.

Males tend to use more lethal methods for self-injury than females.

Suicides by Method and Gender, PA 2000-2006



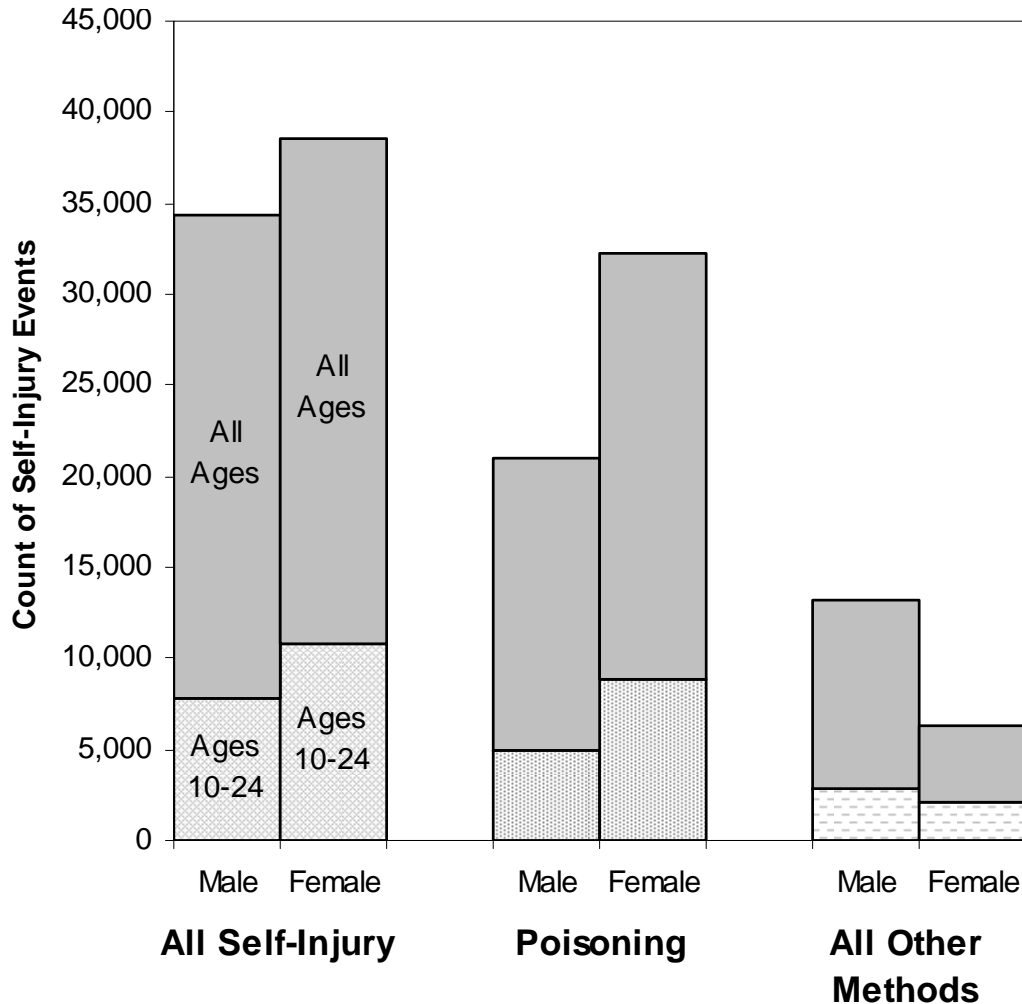
Non-Fatal Self-Injury by Method and Gender, PA 2000-2006



Note: Percentages using each method are out of the total for both genders

Self-Poisoning vs. Self-Injury:

Self-Injury by Gender and Method, PA 2000-2006



- Poisoning is such a large part of self-injury that it reverses some overall trends between the sexes.

Males suffer more suicides than females by all major self-injury methods, and – if poisonings are removed – experience more non-fatal self-injury hospitalizations by all major self-injury methods.

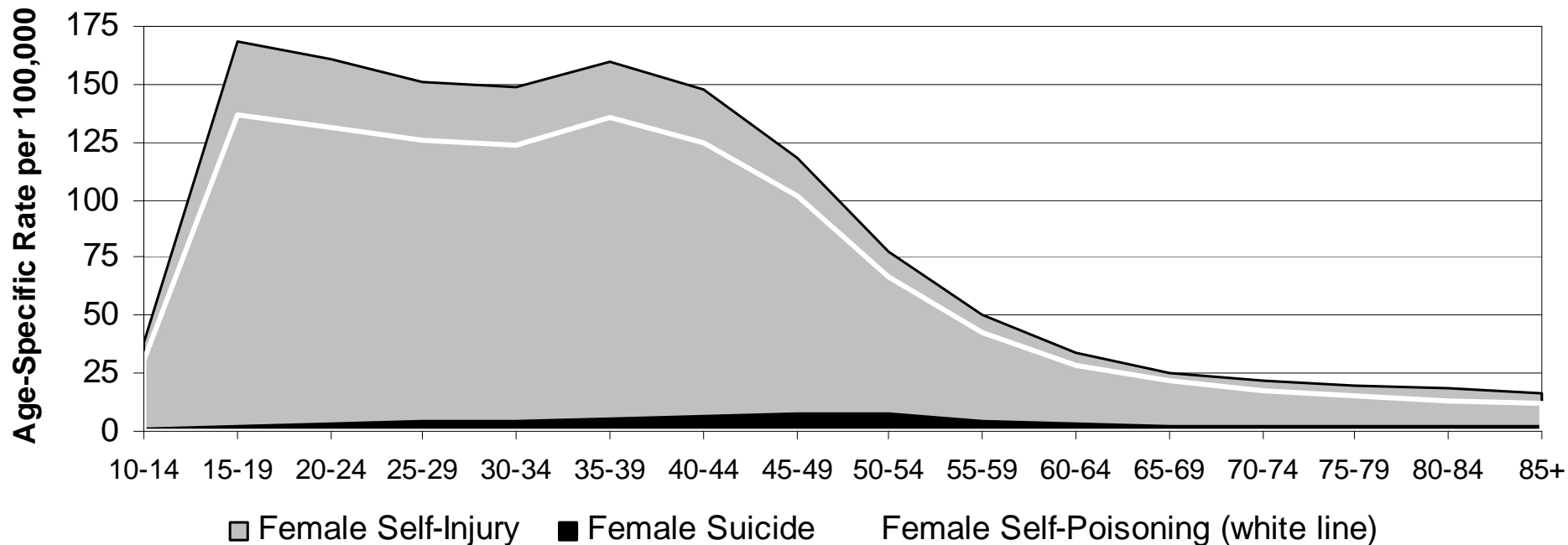
- Females poisonings outnumber male poisonings 3 to 2 overall, and even more so during youth.
- Males outnumber females 2 to 1 in all other methods of self-injury, but by a smaller margin for youth.

Female Self-Injury Trends:

- Female rates of self-injury and self-poisoning peak for ages 15-19, with a secondary peak for ages 35-39.
- 5 out of 6 self-injuries by females used poisoning; poisoning dominates female self-injury trends.
- Female suicide rates peak for ages 45-49 at 7 suicides per 100,000 population, much lower than the male peak.

While female self-injury generally shows a decreasing trend, female suicide rates show a unimodal trend with a peak during middle age.

Female Rates of Self-Injury, Self-Poisoning and Suicide, PA 2000-2006

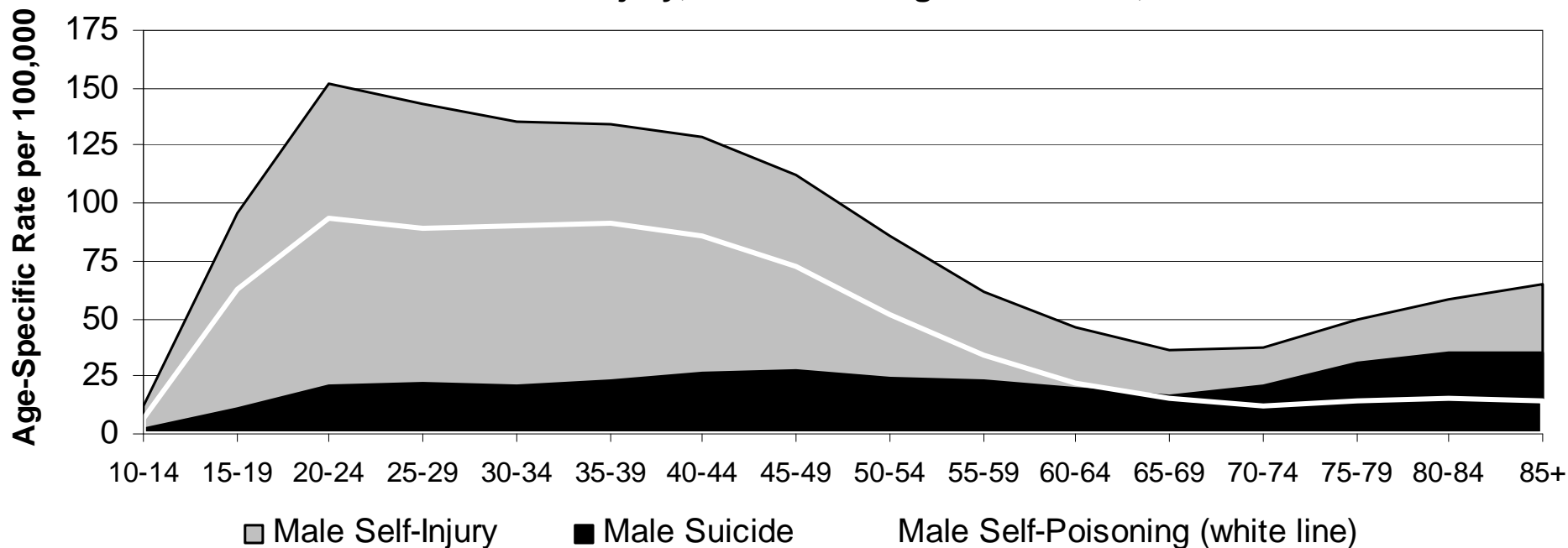


Male Self-Injury Trends:

- Male rates of self-injury and self-poisoning peak for ages 20-24, at lower peak rates than females.
- Male suicide rates first peak for ages 45-49 with a rate of 27 suicides per 100,000 population.
- Male suicide and self-injury rates peak again in later life, while rates of poisoning remain flat.

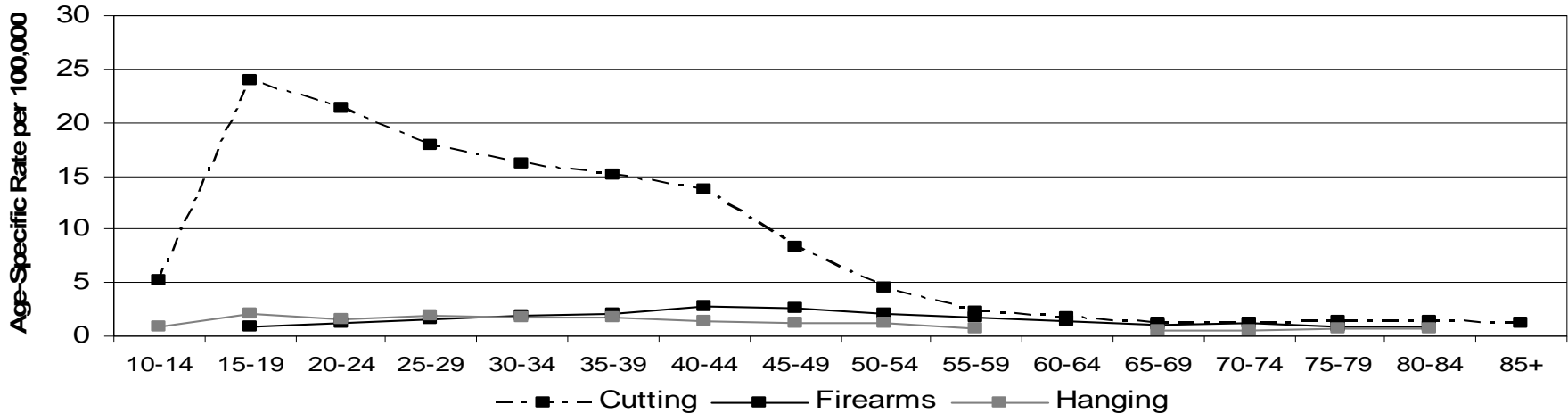
While poisoning influences male self-injury trends in early life, increasing rates of suicide during late life leads to a secondary peak for male self-injury overall.

Male Rates of Self-Injury, Self-Poisoning and Suicide, PA 2000-2006



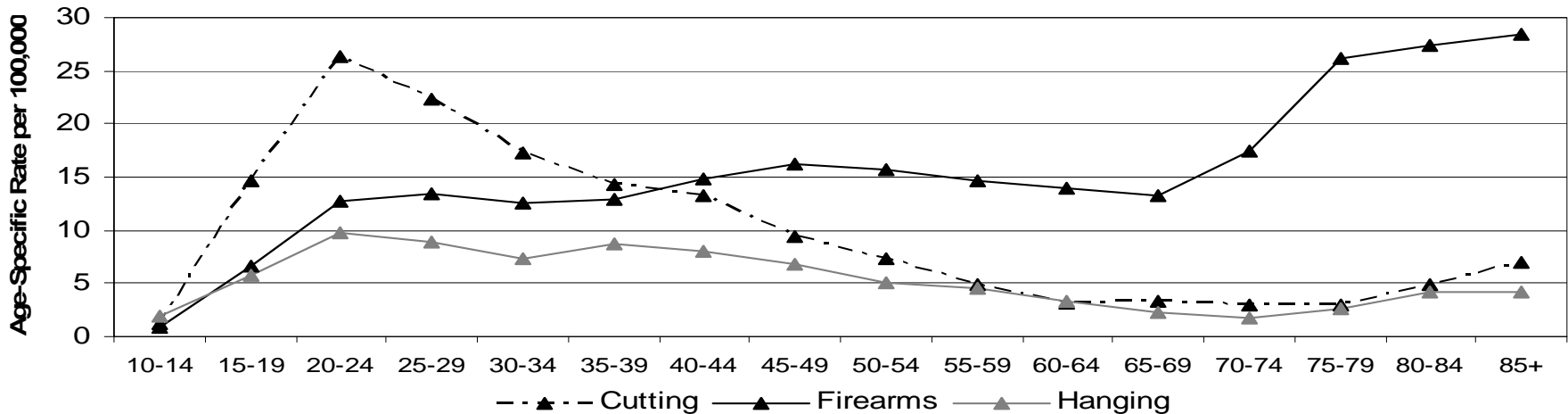
Trends for other common self-injury methods:

Female Rates of Self-Injury by Method, PA 2000-2006



Cutting follows self-injury trends; firearms follow suicide trends

Male Rates of Self-Injury by Method, PA 2000-2006



Focusing on Youth:

Target
groups

Females,
ages 15-19

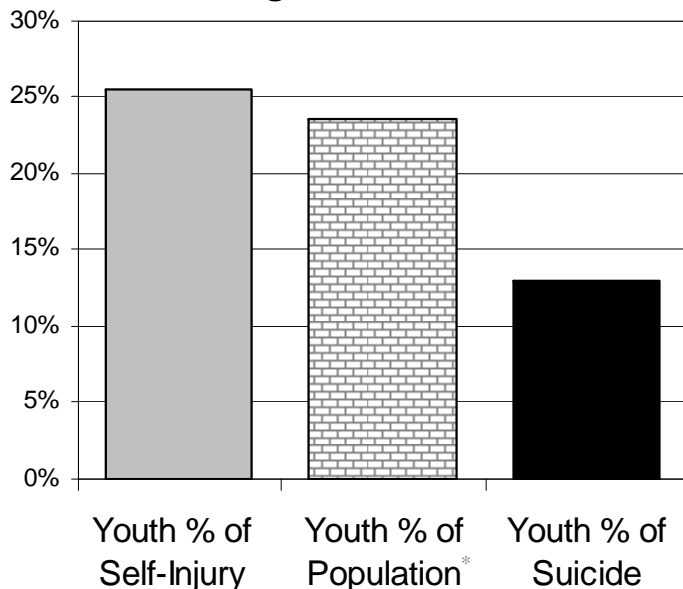
Males,
ages 20-24

- Overall rates of self-injury are at peak, as well as rates of self-poisoning, cutting and hanging.
- Rates reflect a massive increase from ages 10-14.

Firearms are the only major self-injury method not at peak rate during youth.

- Suicide rates are still increasing (**not** at peak).

Youth, Ages 10-24, PA 2000-2006

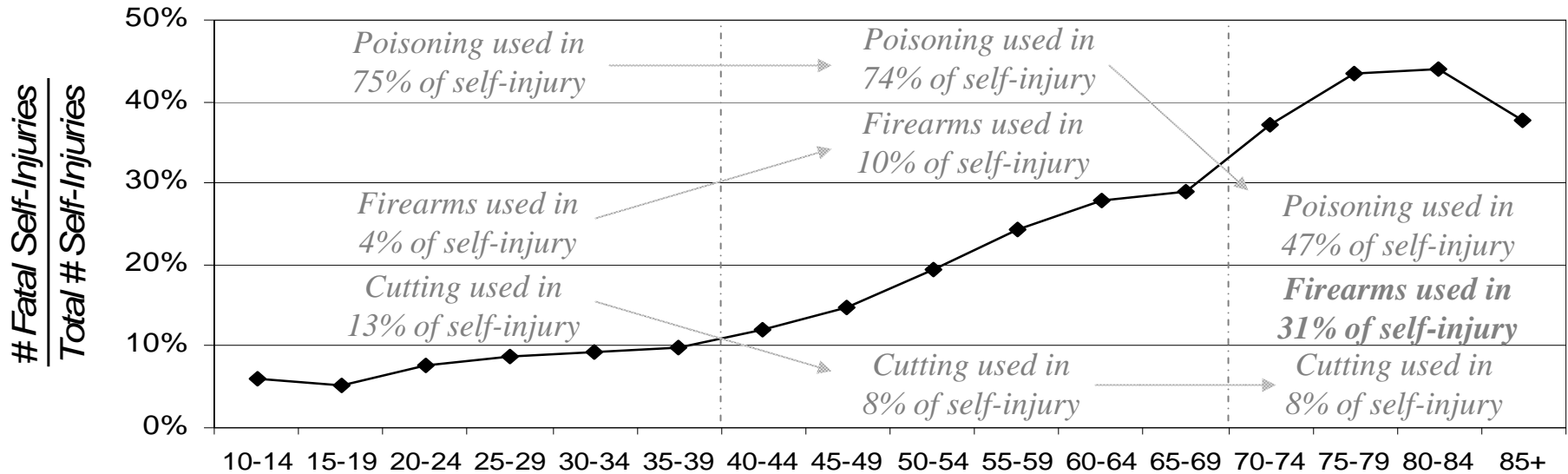


- Approximately 26 percent of all self-injury is inflicted by youth between the ages of 10 and 24, while only 13 percent of all suicides are to youth.
- While youth may not suffer an undue *proportion* of the total number of suicides and self-injuries, *methods* of self-injury employed by youths differ markedly from those used by older self-injurers.

* This population includes only those ages 10 and older, to better reflect the population of self-injurers

Changing Method Preferences:

Percentage Fatality by Age, all self-injuries, PA 2000-2006



Low fatality from youth self-injury largely reflects the methods used: relatively high usage of minimally lethal methods such as cutting, and comparatively little usage of highly lethal methods such as firearms.

Percentage Fatality by Method, PA 2000-2006 (refer to chart on slide 5)

Firearms	Hanging	Poisoning	Cutting	Other Methods
91.1%	78.5%	2.9%	1.9%	15.3%

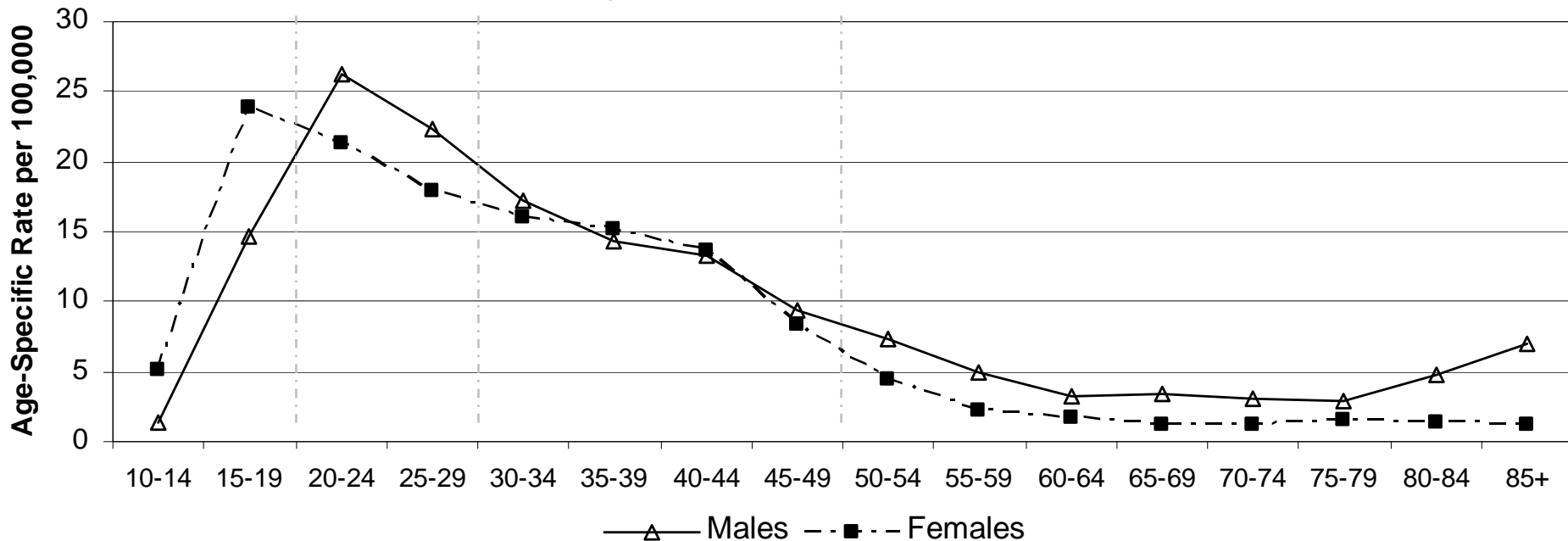
Cutting Demographics:

- Cutting self-injury is perhaps most commonly associated with female youth, however males dominate rates of cutting self-injury throughout much of the lifespan after age 20.
- Female rates of cutting are significantly higher than male rates only for ages 10-19, while male rates of cutting are significantly higher than female rates for ages 20-29 and over 50.

Female cutting is unique to youth – generally males cut more often.

- Fortunately, cutting rarely proves fatal – equal numbers of youth suicides resulted from cutting as drowning, but cutting was used 300 times more often (*PA, 2000-2006*).

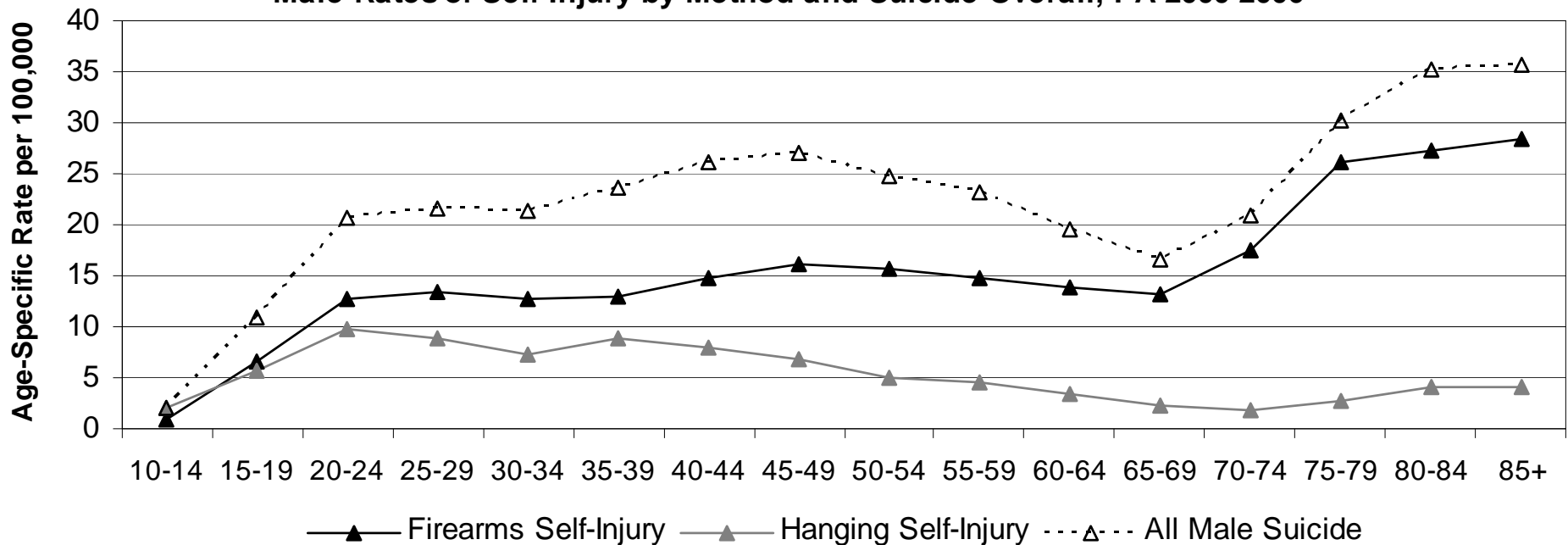
Rates of Cutting Self-Injury by Gender, PA 2000-2006



Hanging vs. Firearms:

Being the most lethal of common self-injury methods, self-injury rates for firearms and hanging drive the overall suicide rate, especially for males.

Male Rates of Self-Injury by Method and Suicide Overall, PA 2000-2006



- Over 37% of suicides among ages 10-24 used hanging, compared to only 20% of suicides using hanging among those over age 24.
- Among males, hangings exceed firearm self-injuries until age 15, among females hangings exceed firearm self-injuries until age 30.

Youth display a unique preference for hanging as a self-injury method.

Urban and Rural Male Youths:

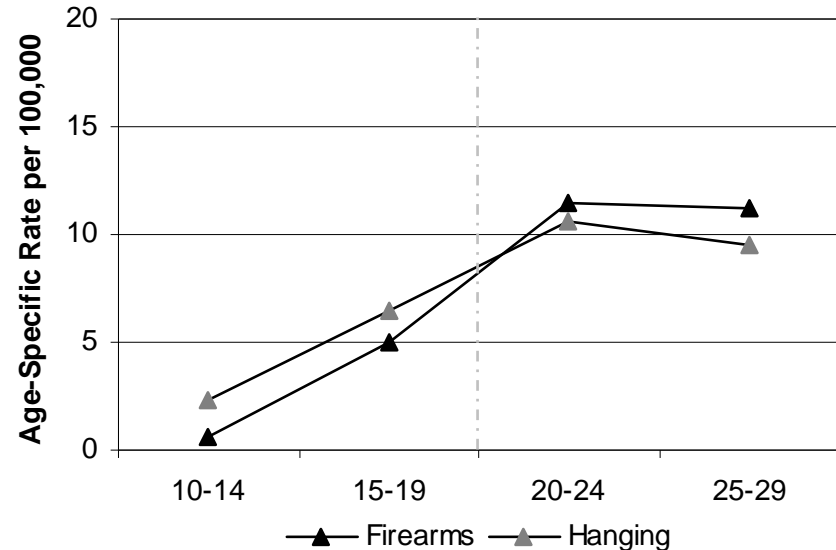
- If we look at male self-injury trends by urban and rural classification of county*, we notice a clear difference in behavior among urban and rural male youths.
- Among urban males, hangings exceed self-injury by firearm until age 20.
- Among rural males, however, self-injury by firearm exceeds hangings for all ages.

Changing method preference may reflect a change in circumstance.

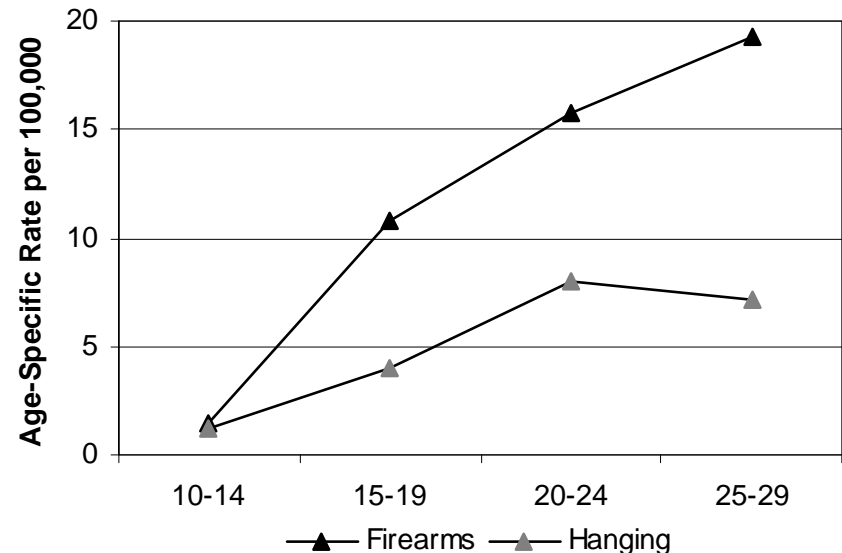
- Many factors may influence youth to use hanging as a self-injury method over guns, including legal restrictions on firearms for those under age 18 and differing levels of gun ownership among rural and urban PA.

* We use Center for Rural PA's definitions of 'urban' and 'rural' which are based on population density

Self-Injury Rates by Method,
Urban Males, PA 2000-2006

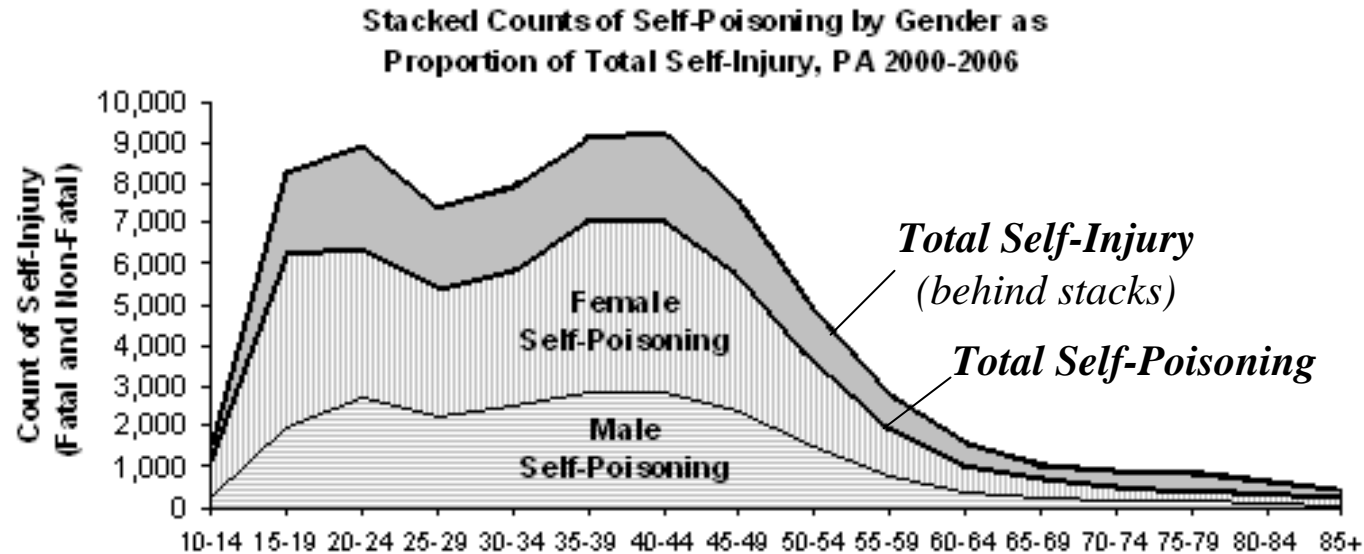


Self-Injury Rates by Method,
Rural Males, PA 2000-2006



Self-Poisoning:

- Poisoning is by far the most common method of self-injury, comprising:
 - **61.4%** of self-injury for males
 - **83.5%** of self-injury for females

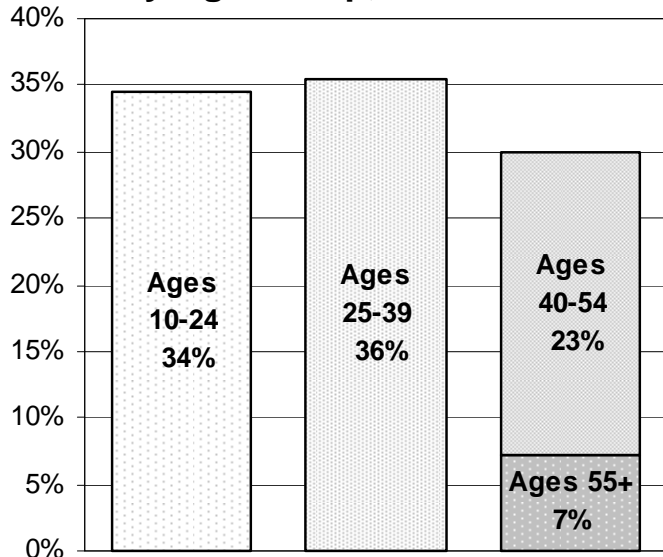


- Female self-poisoning rates are significantly higher than male rates from age 10 until age 75.

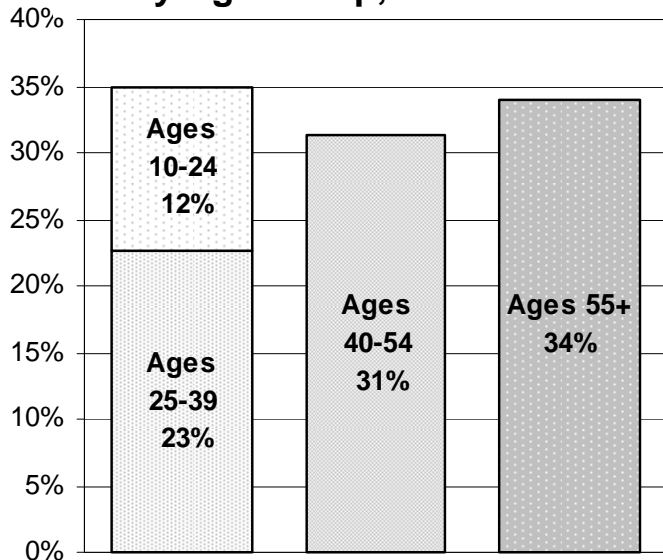
Females outnumber males in self-injury only among non-fatal self-poisonings.

- Male rates of self-poisoning peak at less than 100 events per 100,000 population (ages 20-24), while female rates of self-poisoning are over 125 events per 100,000 from age 15 until age 45.
- *For both males and females* the largest increase in rate of self-poisoning occurs between the ages 10-14 and 15-19, and the largest decrease occurs between the ages 45-49 and 50-54.
- Poisoning is the leading method of suicide for females and the third leading method for males.

Distribution of Cutting Self-Injury by Age Group, PA 2000-2006



Distribution of Firearms Self-Injury by Age Group, PA 2000-2006



Summary: Youth Methods

- Youth have higher usage of cutting for self-injury than the general population, and lower usage of firearms.
- For males, only during youth do hangings outnumber self-injuries by firearm, although not in rural regions.
- Rates of poisoning self-injury are highest during the peak years of youth self-injury for both genders:

Female self-injury peaks for ages 15-19
Male self-injury peaks for ages 20-24.

- Males self-injure more than females by all common methods other than poisoning – although males still have more suicides by poisoning than do females.
- Ages 10-24 include the years of greatest increase in self-injury behavior for both males and females.
- Fortunately, due to high use of poisoning and cutting, methods which rarely prove fatal, youth do not suffer high rates of suicide compared to older populations.

*For more information on youth suicide, or
about suicide and self-injury in general...*

Contact:

Violence and Injury Prevention Program

Pennsylvania Department of Health

Bureau of Health Promotion and Risk Reduction

Division of Health Risk Reduction

1008 Health and Welfare Building
625 Forster Street
Harrisburg, PA 17120-0701

Phone: (717) 787-5900
<http://www.health.state.pa.us>