



Guns and Suicide:

What do we know and what can we do?

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● My plan

- I am not here to:
 - Vilify gun owners
 - Claim superior experience with firearms
 - Claim that means safety will eliminate suicide
- I am here to:
 - Discuss the role of firearms in suicide
 - Leverage my knowledge in a specific area to offer evidence-based impactful solutions for lowering the suicide rate

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Firearm suicide in the US

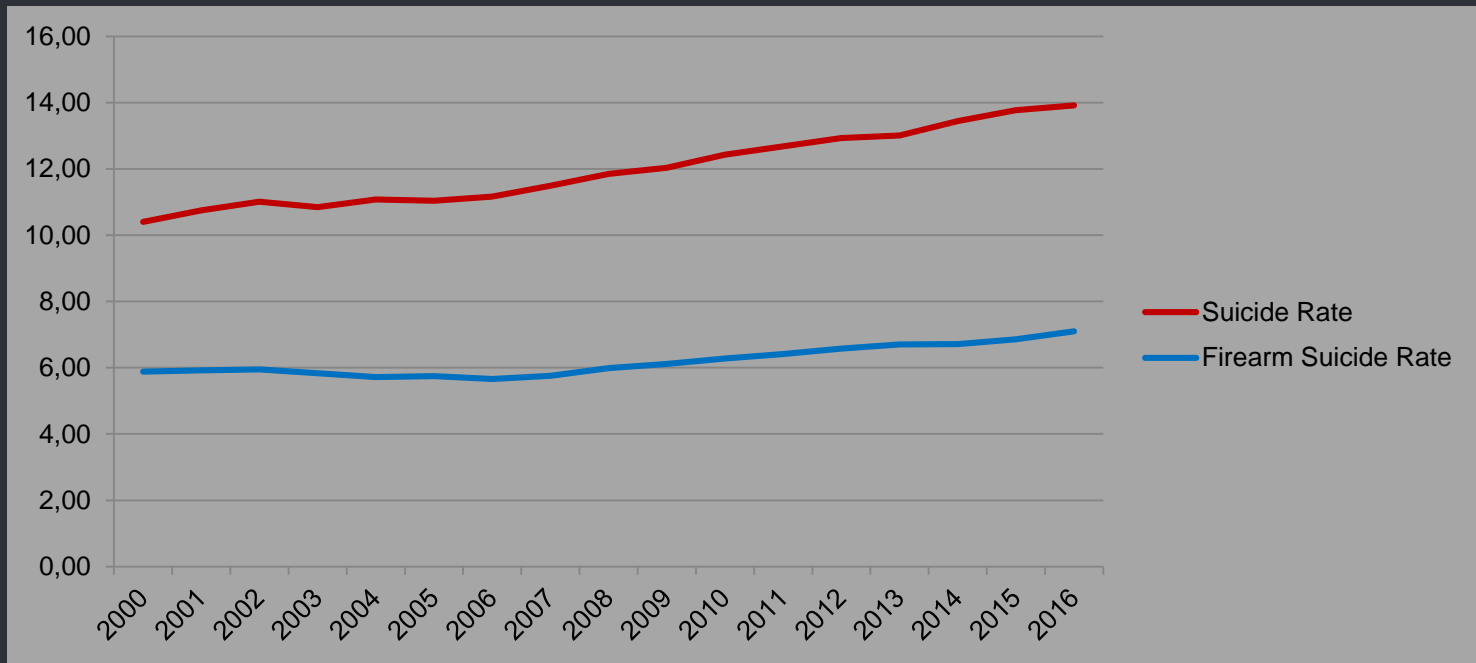
How big is the problem?



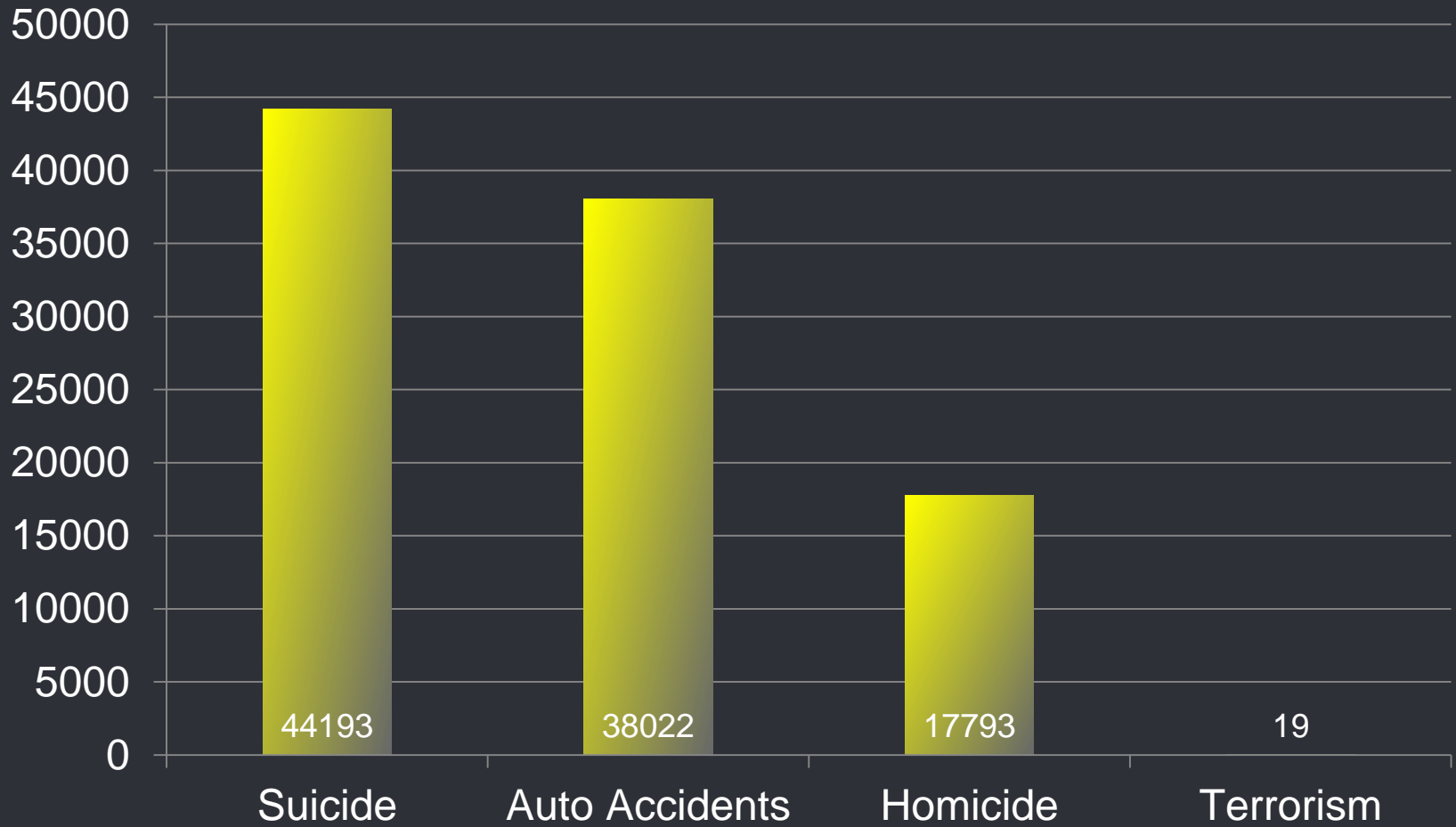
● How big is the problem?

○ 47,173 suicide deaths in US (2017)

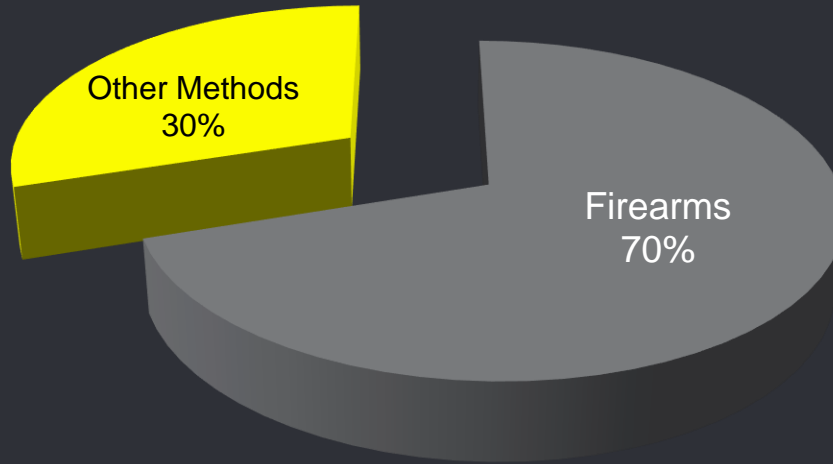
- 51% by firearms (23,854 deaths)
- Firearms were used in less than 5% of all suicide attempts



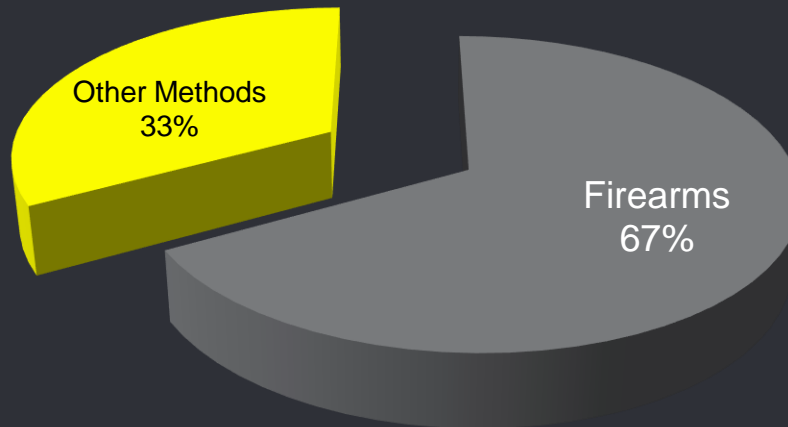
Deaths in the United States (2016)



Mississippi Suicide Deaths



US Military Suicide Deaths



● How big is the problem?

- Suicide is up to 5x as common in homes with firearms
- Risk increases further when firearm is stored unsafely
- 85-95% of all firearm suicide attempts are lethal
 - 2-3% of overdose suicide attempts are lethal





2

What we know

How firearms are related to suicide?



Ideation

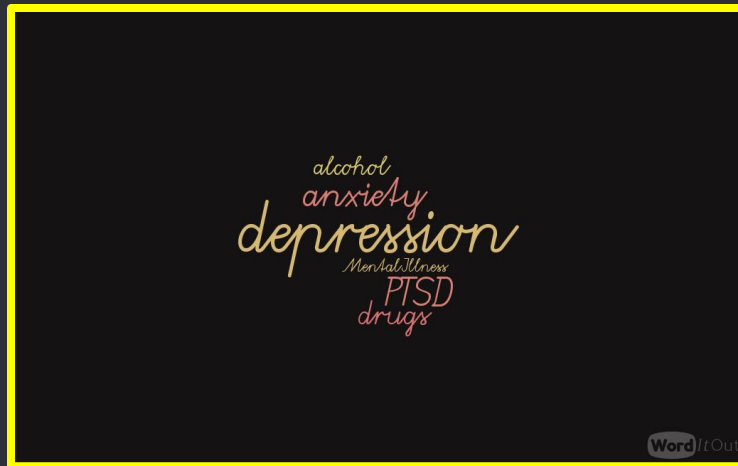
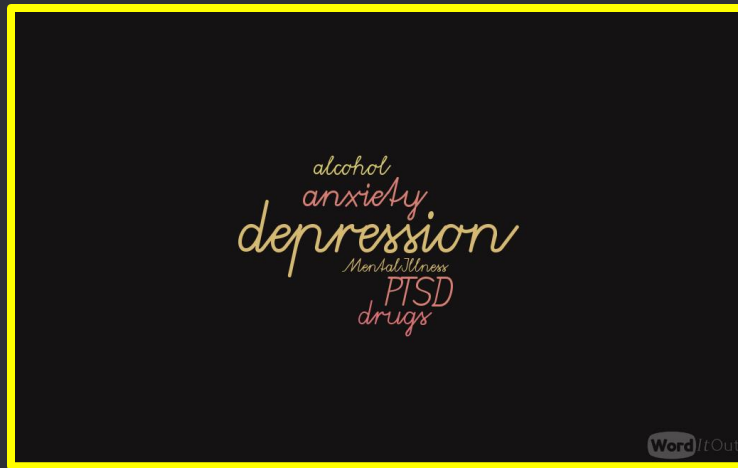


Attempt

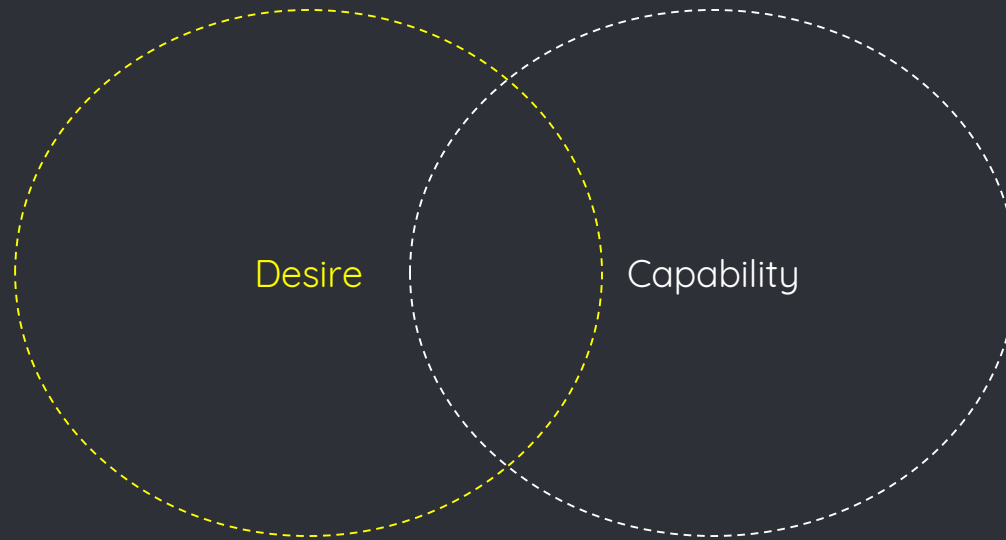


Death

- “Suicide risk factors” only predict suicidal thoughts, not suicidal behavior



- Using theory to understand the role of firearms in suicide



Firearm ownership does not cause an individual to think about or desire suicide

It may, however, increase an individual's capability for suicide

Capability

What is the capability for suicide?

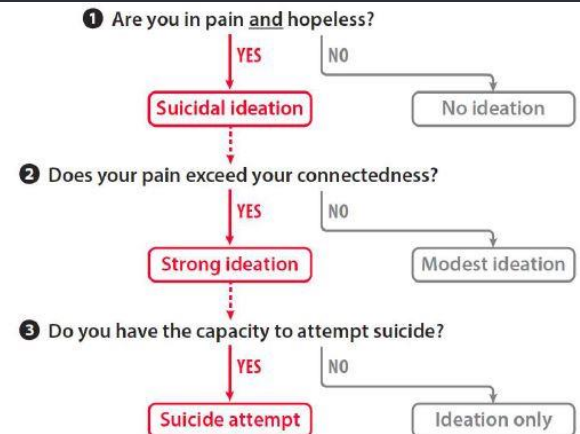
- Elevated pain tolerance
- Diminished fear of death/bodily harm
- Access to & comfort with lethal means

(Joiner, 2005; Klonsky & May, 2015)

JOINER'S THEORY OF SUICIDE



KLONSKY & MAY'S 3 STEP THEORY OF SUICIDE



● Anestis & Capron (2017). Deadly experience: The association between firing a gun and various aspects of suicide risk. *SLTB*.

○ Community sample (n = 100) from southern Mississippi:

- Oversampled for suicide attempts
- Low SES; 44% Black

Experience firing gun



Fearlessness about Death
Pain Tolerance
Pain Persistence
Lifetime Suicide Attempts

Not associated with suicidal ideation or simple pain detection

Anestis & Houtsma (2017). The association between gun ownership and statewide overall suicide rates. *SLTB*.

TABLE 3
Gun Ownership Predicting Statewide Overall Suicide Rate

| | R^2 | ΔR^2 | β | p | p^* | f^2 |
|---------------------------------------|-------|--------------|---------|------|-------|-------|
| | .901 | | | | | |
| % 25+ with college degree | | | -.38 | .007 | -.44 | |
| % White | | | .32 | .005 | .46 | |
| Median age | | | -.21 | .040 | -.34 | |
| Population density | | | .12 | .265 | .19 | |
| % Below poverty line | | | .08 | .410 | .14 | |
| % Christian | | | -.74 | .098 | -.28 | |
| % Religiously unaffiliated | | | .30 | .666 | .08 | |
| % Jewish | | | -.09 | .560 | -.10 | |
| % Muslim | | | .01 | .909 | .02 | |
| % Buddhist | | | -.04 | .744 | -.06 | |
| % Hindu | | | -.06 | .536 | -.11 | |
| % Atheist | | | .04 | .806 | .04 | |
| % Agnostic | | | -.27 | .146 | -.25 | |
| % No religion in particular | | | -.62 | .148 | -.25 | |
| Veterans per 100,000 | | | .56 | .000 | .68 | |
| Elevation | | | .46 | .000 | .72 | |
| | .905 | .004 | | | | |
| Drug/Alcohol use disorder per 100,000 | | | -.02 | .886 | -.03 | |
| Serious mental illness per 100,000 | | | .16 | .449 | .14 | |
| Serious suicidal thoughts per 100,000 | | | -.08 | .656 | -.08 | |
| Depressive episode per 100,000 | | | .00 | .984 | .00 | |
| % of Residents who own a gun | .926 | .021 | .33 | .008 | .47 | .28 |

Note. Psychopathology variables in Step 2 refer to past-year incidence.

Bryan, Bryan, Anestis, Khazem, Harris, May, & Thomsen (2019). Firearm availability and storage practices among military personnel who have thought about suicide: A cross-sectional study. *JAMA Open Network*.

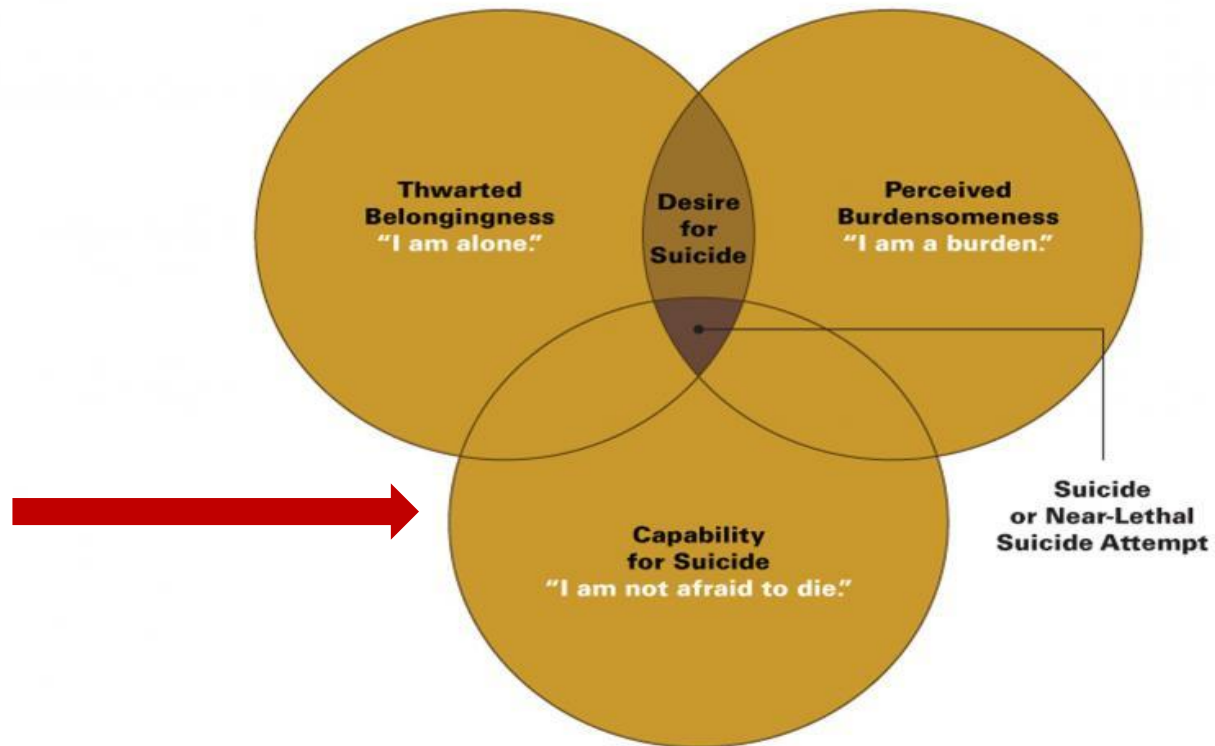
- Suicidal servicemembers less likely to have a firearm at home
- Suicidal servicemembers with firearms at home were far more likely to store them unsafely (loaded in a non-secure location)

Those at greatest risk – suicidal and with a firearm at home – are the ones most likely to store firearms unsafely

Guns don't make people suicidal

- They make suicidal people more likely to die

JOINER'S THEORY OF SUICIDE





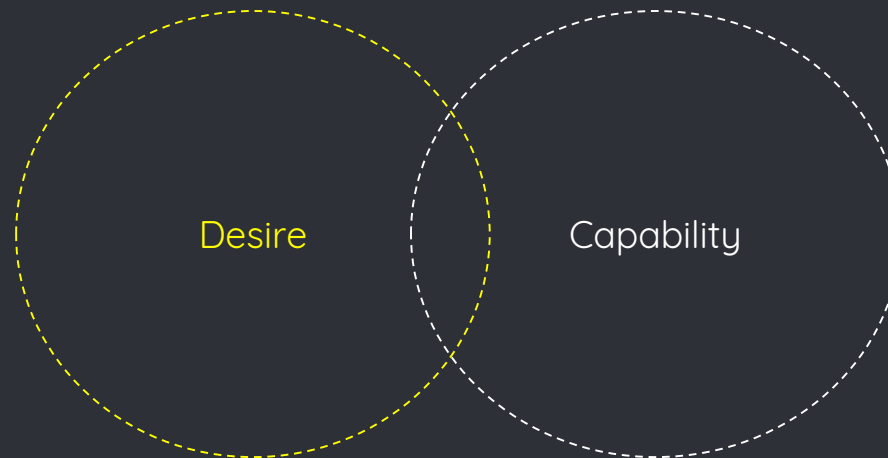
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What do we do?

Means Safety

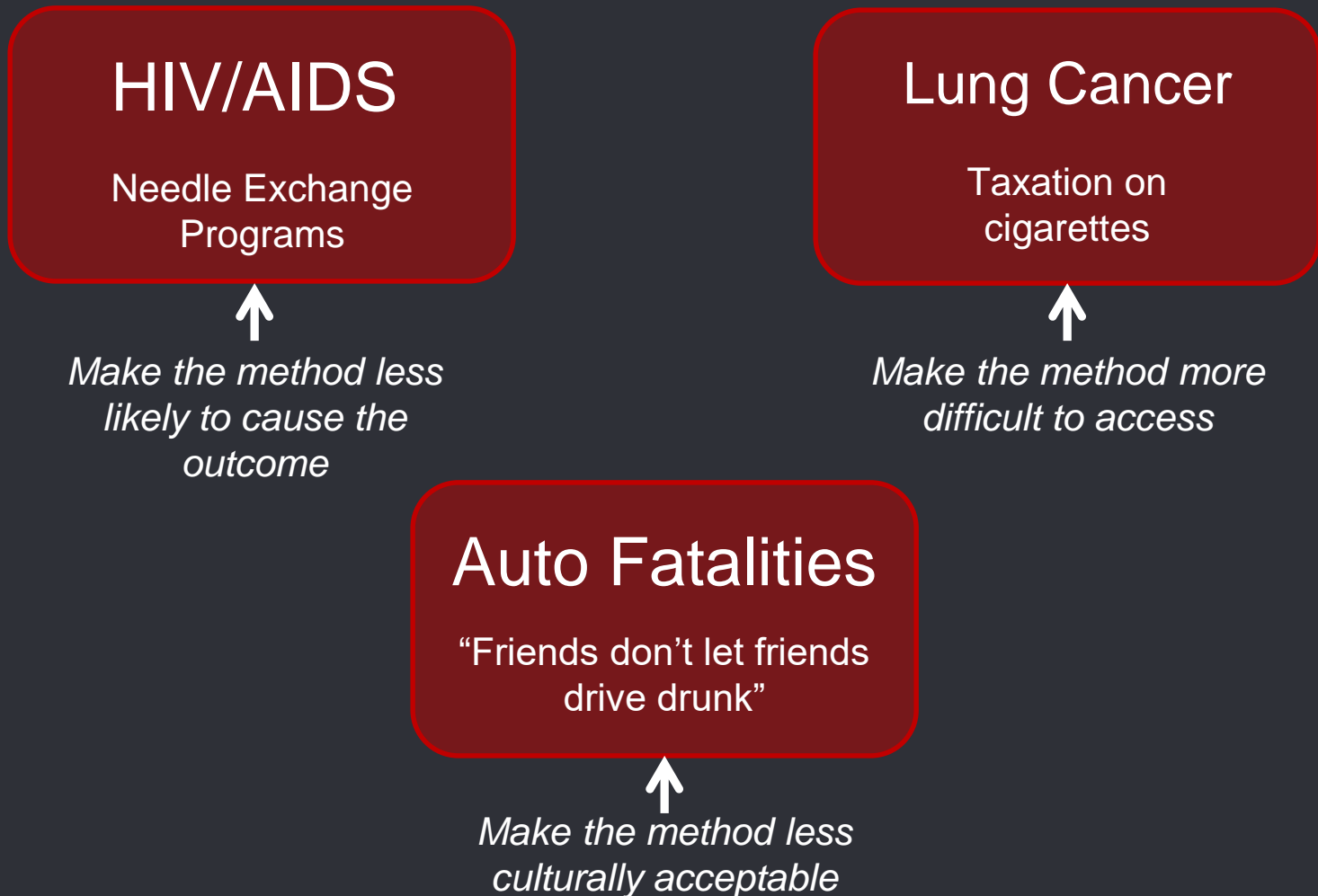
● Our tools are not reaching those who need them

- Those who die by suicide using a firearm are less likely to:
 - Seek mental health care
 - Disclose suicidal thoughts
 - Engage in a non-lethal suicide attempt
- We need tools that focus on capability for suicide because we often cannot detect suicidal desire
 - We are no better now at prospectively predicting suicide death than we were in the 1950s (Franklin et al., 2017)



● Means safety

Efforts that make an item less deadly or less available:



- Means Safety Works – Across the Globe & Across Methods



Permissive gun laws are the norm in the US

**GIFFORDS
LAW CENTER**

ANNUAL GUN LAW SCORECARD

MAP
RANKINGS
POLICIES



● Could firearm legislation promote suicide prevention?

○ Universal background checks & mandatory waiting periods

- Widely popular
- Do not threaten the 2nd Amendment

Laws associated with...

| | |
|---|--|
| ★ Lower statewide suicide rates | Anestis & Anestis (2015); <i>Am J Public Health</i> |
| ★ 2013-2014 state suicide rate decline | Anestis, Anestis & Butterworth (2017); <i>Am J Public Health</i> |
| ★ Less severe suicide rate trajectory over time | Anestis, Selby, & Butterworth (2017); <i>Preventive Medicine</i> |

● Is legislation plausible?

○ High gun ownership states tend to be more conservative

- Substantial resistance to legislation
- Will require federal action or cultural changes
- Also worth considering other laws (e.g. ERPOs)
- Promote safe storage as additional option

Legislation and safe storage are not mutually exclusive options

“If somebody truly wants to die and you stop them from using a gun, won’t they just find another way?”

“

No, and even if they did, it would be less lethal than a firearm.

- Among those who survive a suicide attempt

70%

Never attempt suicide again

90%

Never die by suicide

Owens et al., 2002

When you prevent somebody from attempting suicide using a specific method on a specific occasion there is a profound chance you have prevented them from ever attempting suicide by any method

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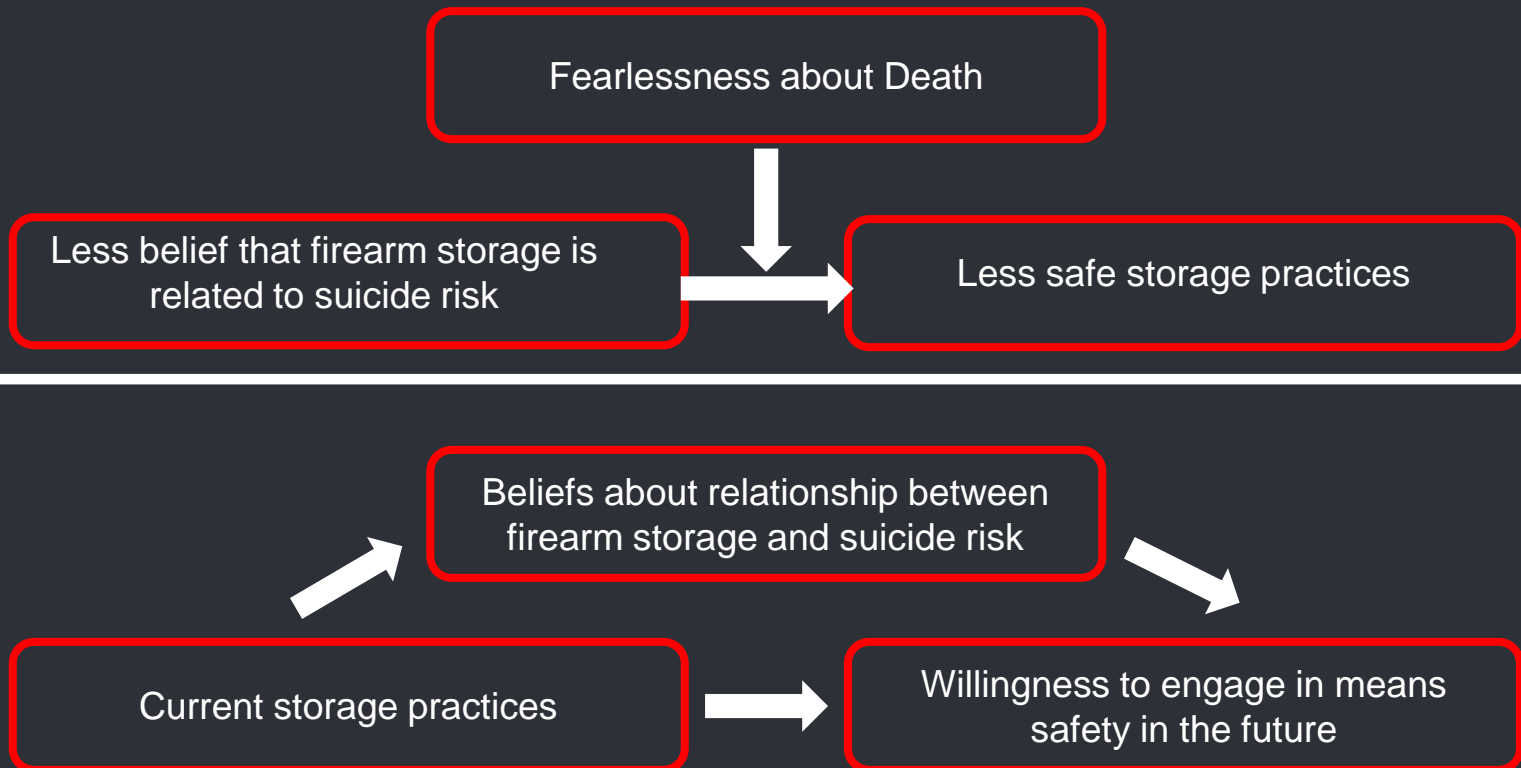
What might get in the way?

Misinformation and bad salesmanship



Anestis, Butterworth, & Houtsma (2018). Perceptions of firearms and suicide: The role of misinformation in storage practices and openness to means safety. *Journal of Affective Disorders*.

300 American firearm owners



Many firearm owners do not believe firearms are related to suicide

“

.....so why would they change their behavior or support legislation that regulates firearm acquisition?

5

Lethal Means Counseling

Shifting Culture & Safety Via Primary Prevention



PROJECT
SAFE
GUARD



Randomized controlled trial (2x2 design)

Single session prevention trial examining health and home safety

PI:

Mike Anestis, Ph.D

Co-Is:

Dan Capron, Ph.D

AnnaBelle Bryan, M.S.

Craig Bryan, Psy.D.



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI.



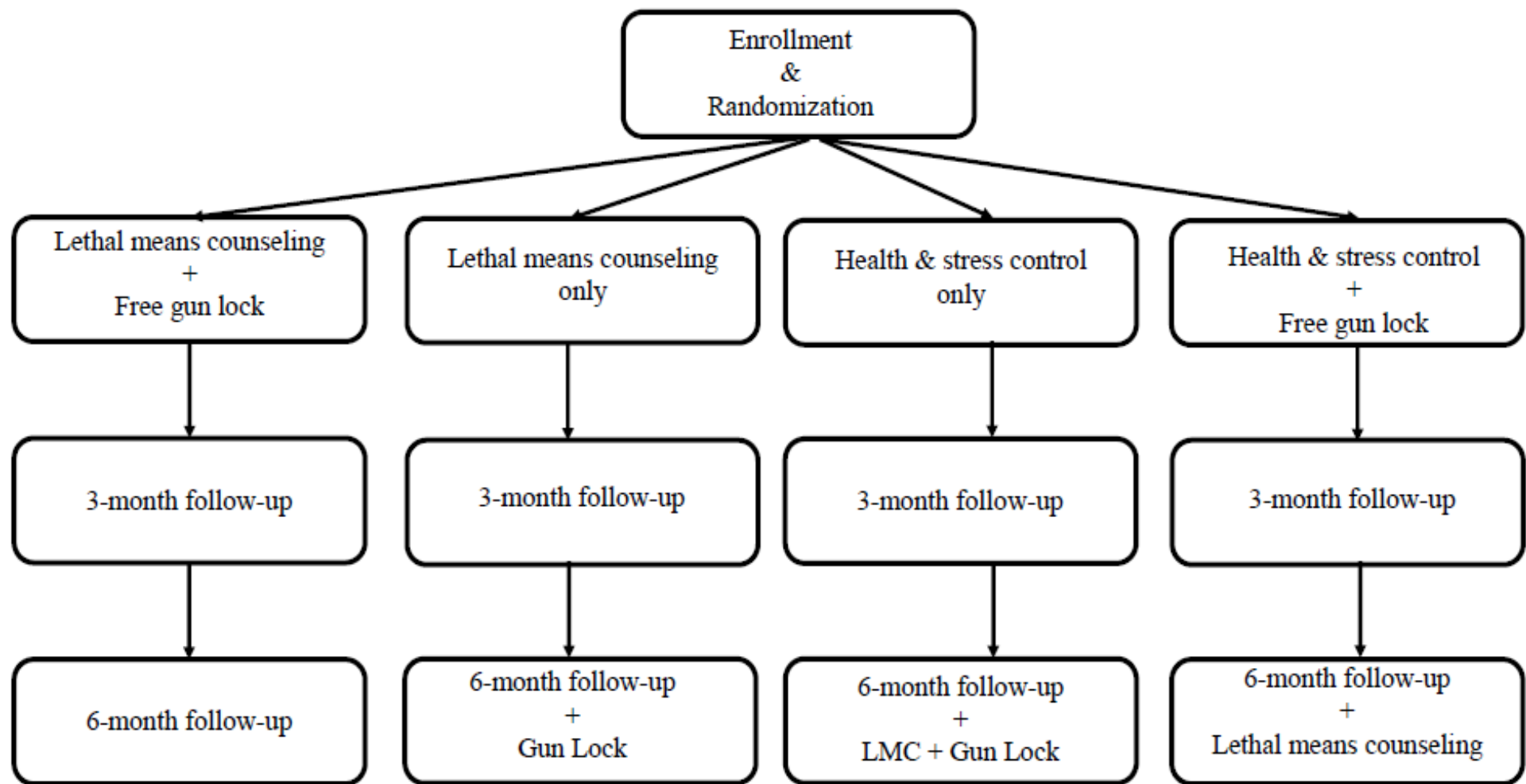
National Center for
VETERANS STUDIES
THE UNIVERSITY OF UTAH



● How does Project Safe Guard work?

- **Participants randomized to one of four conditions**
 - Discuss one of several health and home safety topics
 - Some randomized to discuss firearm storage
 - Single 15-20 minute interaction
 - All participants must be currently affiliated with the National Guard

- Sample: 232 firearm owning Mississippi National Guard personnel





Design Considerations

- Intentionally not recruiting on the basis of suicide risk
 - Overcoming obstacle of protecting those who hide ideation and avoid mental health care
- Uses motivational interviewing framework
 - Works with the firearm owner collaboratively to increase safety
- Intervention requires one brief (15-20 minute) interaction
 - Aim to test on peer-to-peer delivery basis in future
 - Larger goal would be to implement broadly upon entry to military
 - Create cultural expectation that servicemen and women store their personal firearms safely and take effective steps to reduce risk of firearm suicide risk
 - Does not require identifying suicide risk prospectively – focuses on reducing capability for suicide universally

| Category | | N (%) / M (SD) |
|-----------------|--------------------------------------|----------------|
| Age | | 34.16 (10.20) |
| Sex | | |
| | <i>Male</i> | 141 (86.0%) |
| | <i>Female</i> | 23 (14.0%) |
| Race | | |
| | <i>White</i> | 131 (79.9%) |
| | <i>Black</i> | 33 (20.1%) |
| Political Views | | |
| | <i>Extremely or Somewhat Liberal</i> | 8 (4.9%) |
| | <i>Moderate</i> | 70 (42.7%) |
| | <i>Somewhat Conservative</i> | 64 (39.0%) |
| | <i>Extremely Conservative</i> | 22 (13.4%) |
| Rank | | |
| | <i>Enlisted</i> | 107 (65.2%) |
| | <i>Non-Commissioned Officer</i> | 15 (9.1%) |
| | <i>Warrant Officer</i> | 3 (1.8%) |
| | <i>Officer</i> | 36 (22.0%) |

| Category | N (%) / M (SD) |
|---|--|
| Diagnostic Status | |
| <i>Past or Recurrent Depressive Episode</i> | 45 (27.5%) |
| <i>Current or Lifetime Panic Disorder</i> | 15 (9.1%) |
| <i>Generalized Anxiety Disorder</i> | 2 (1.2%) |
| <i>Current or Lifetime Alcohol Use Disorder</i> | 4 (2.4%) |
| Suicidality | |
| <i>Lifetime Suicidal Ideation</i> | 33 (20.1%) |
| <i>Past Year Suicidal Ideation</i> | 10 (6.0%) |
| <i>Past Month Suicidal Ideation</i> | 1 (0.6%) |
| <i>Lifetime Suicide Plan</i> | 8 (4.9%) |
| <i>Plan Involved Firearms</i> | 5 (62.5%) |
| <i>Plan Involved Multiple Methods</i> | 2 (25.0%) |
| <i>Lifetime Suicide Attempt</i> | *6 attempts involved firearm* 8 (4.9%) |

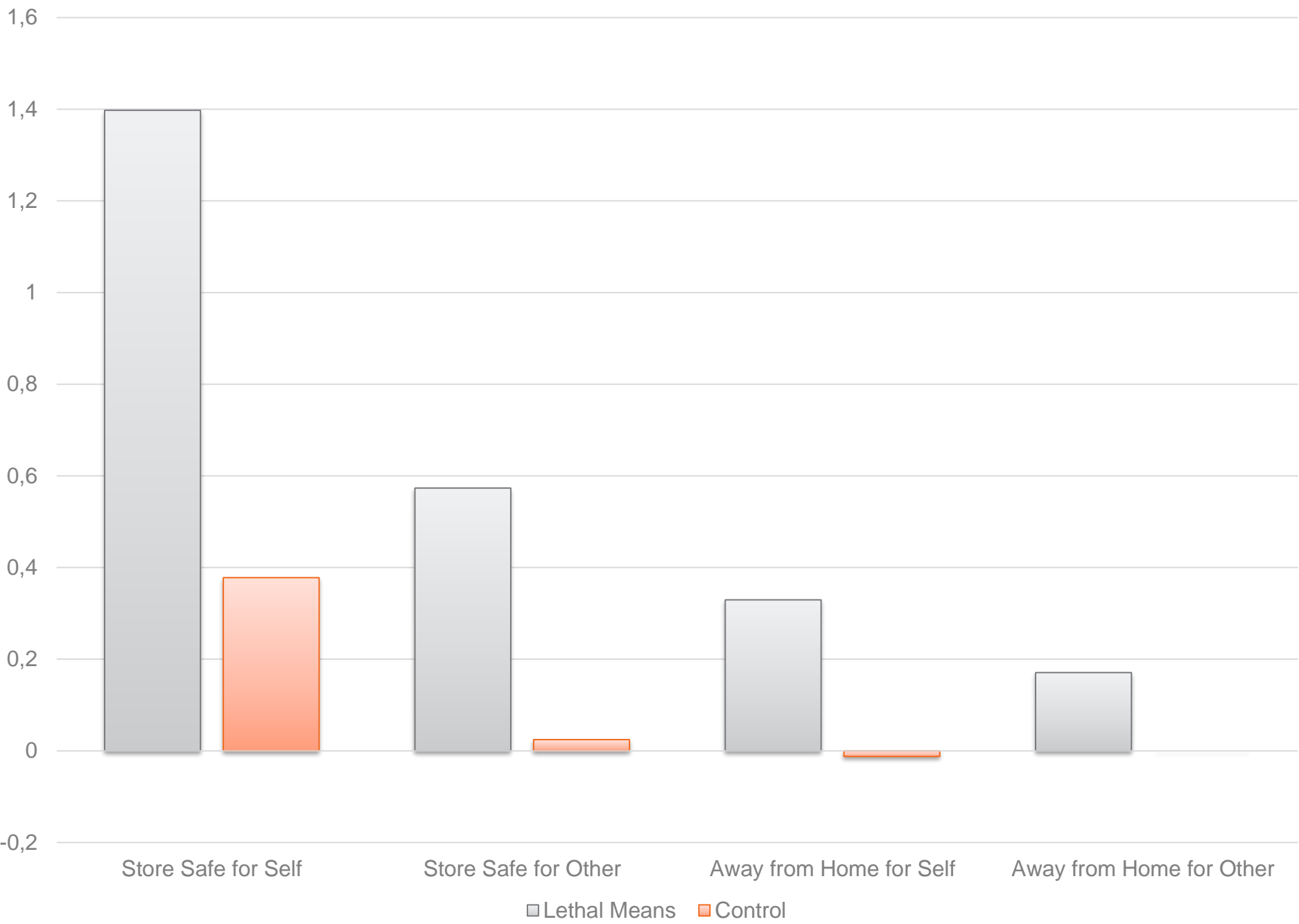
Most attempts were aborted or interrupted, although one involved Russian Roulette



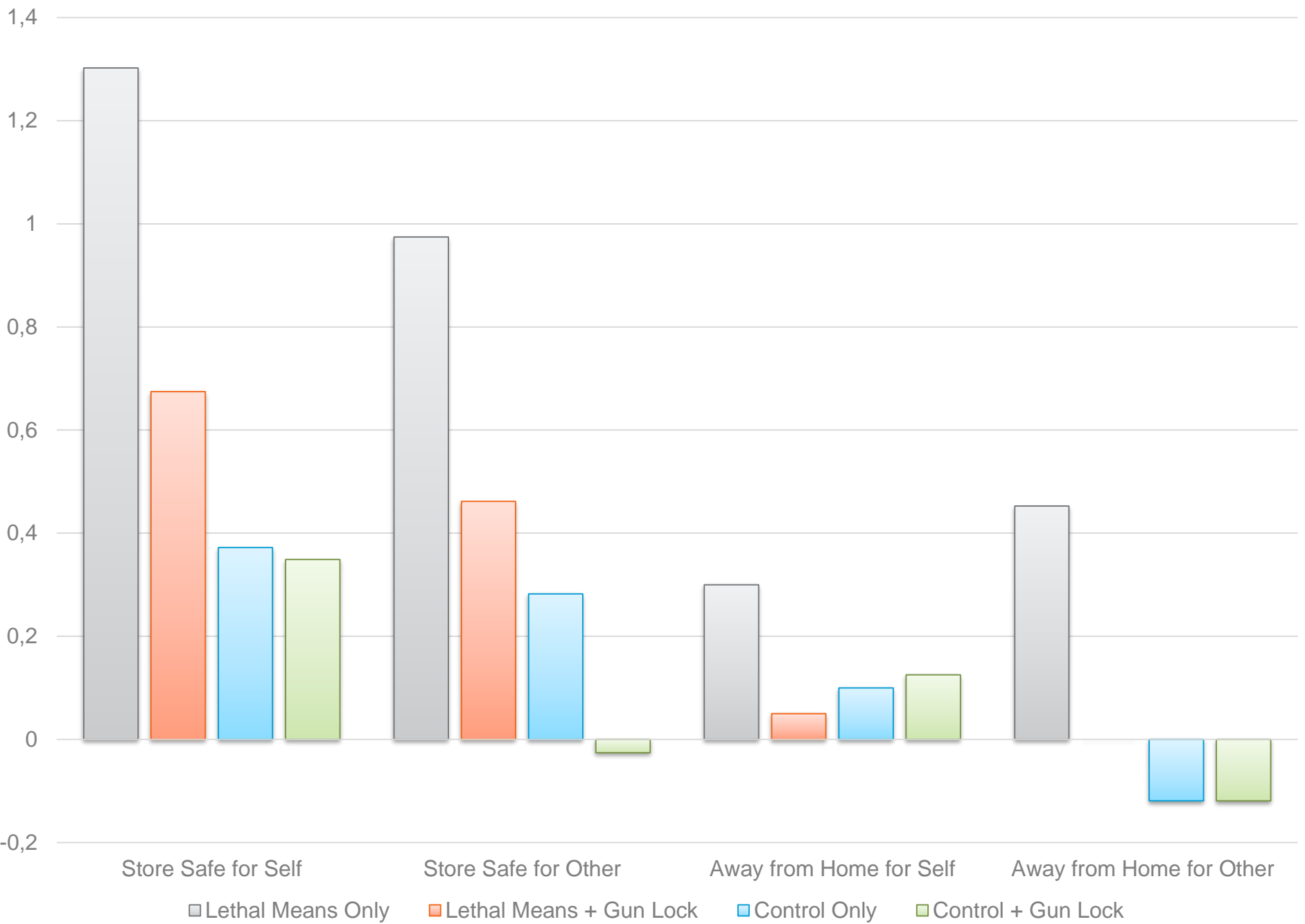
Firearm ownership characteristics

- On average, participants own 6.70 firearms (range = 1-80)
- Type
 - Handgun – 91.5%
 - Shotgun – 56.1%
 - Rifle – 70.7%
 - Other – 4.3%
- Storage Practices
 - At home – 95.7%
 - Gun safe – 32.3%
 - Locking device – 28.0%
 - Unloaded – 49.4%
- Primary reason for ownership
 - Safety at or away from home – 53.6%
 - Recreational purposes (e.g. hunting) – 24.4%
 - Basic interest (e.g. maintaining a collection) – 1.2%
 - Expression of freedom – 3.7%
 - Other – 17.1%

Changes in Openness to Means Safety Immediately Post-Treatment



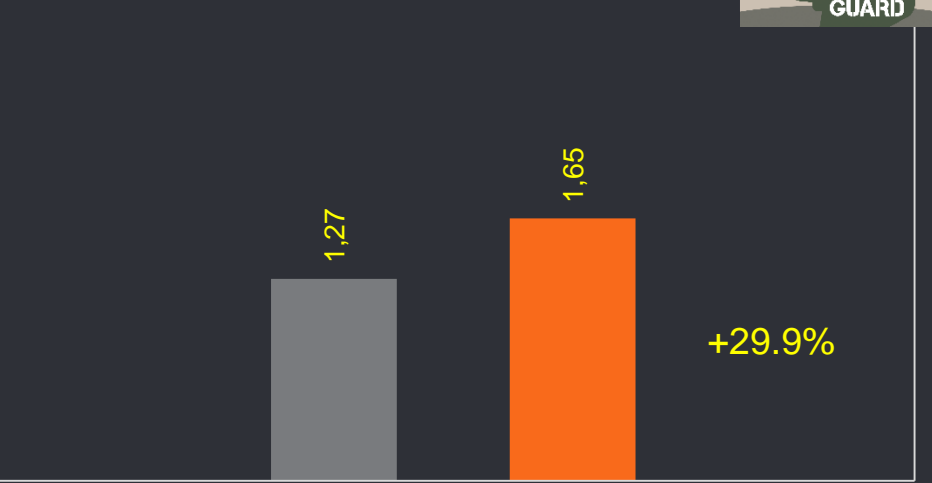
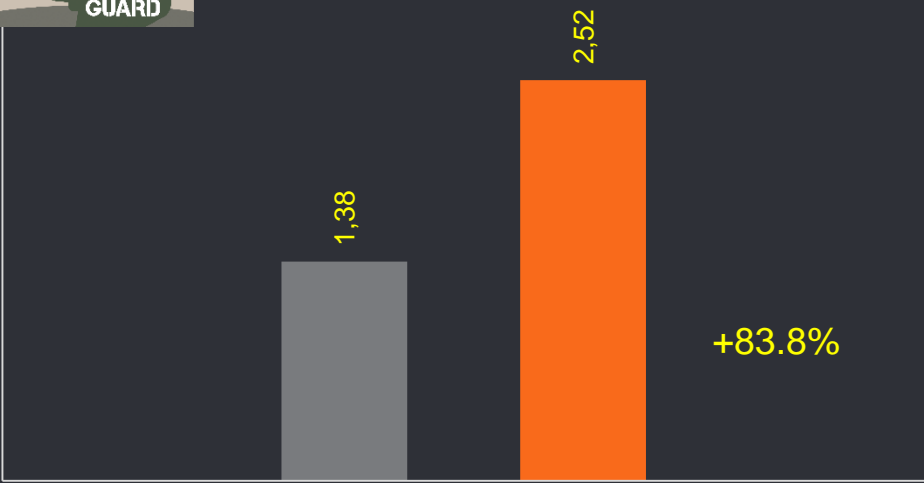
Changes in Openness to Means Safety Immediately Post-Treatment



STORE FIREARMS SAFETY TO PREVENT OWN SUICIDE



■ Pre-Treatment ■ Post-Treatment

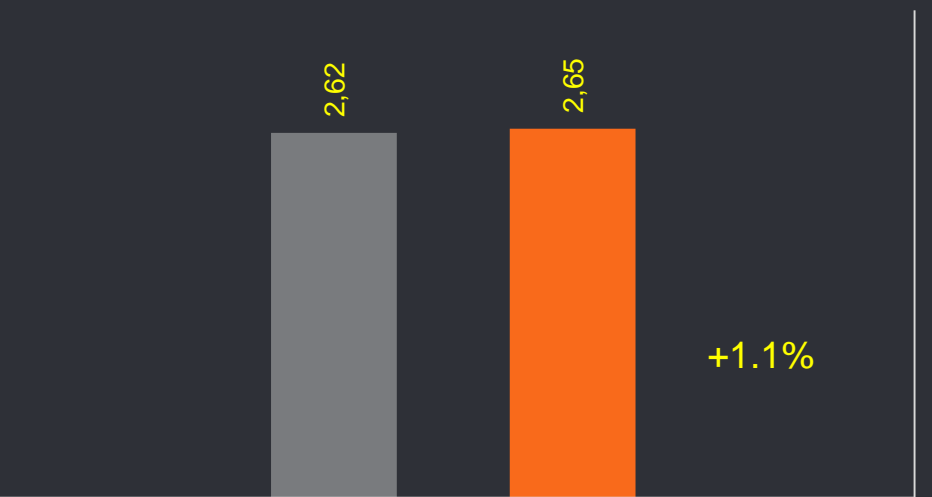
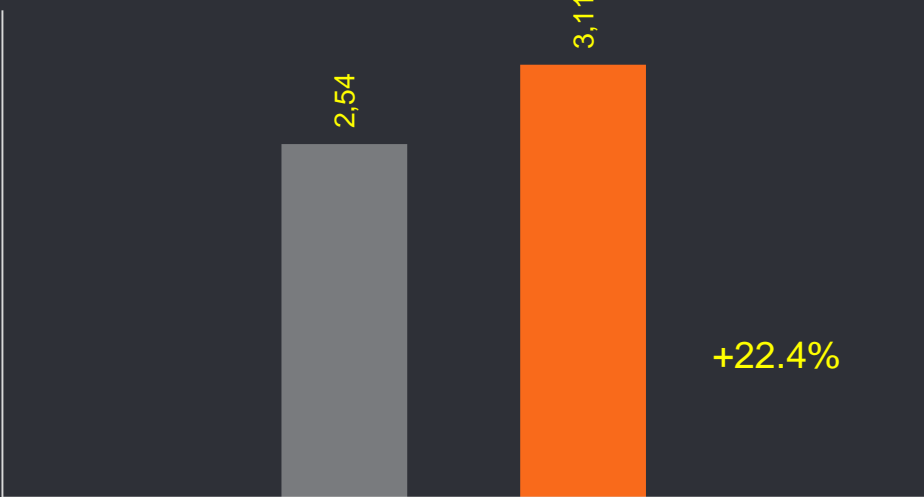


MEANS SAFETY

CONTROL

STORE FIREARMS SAFETY TO PREVENT SOMEONE ELSE'S SUICIDE

■ Pre-Treatment ■ Post-Treatment



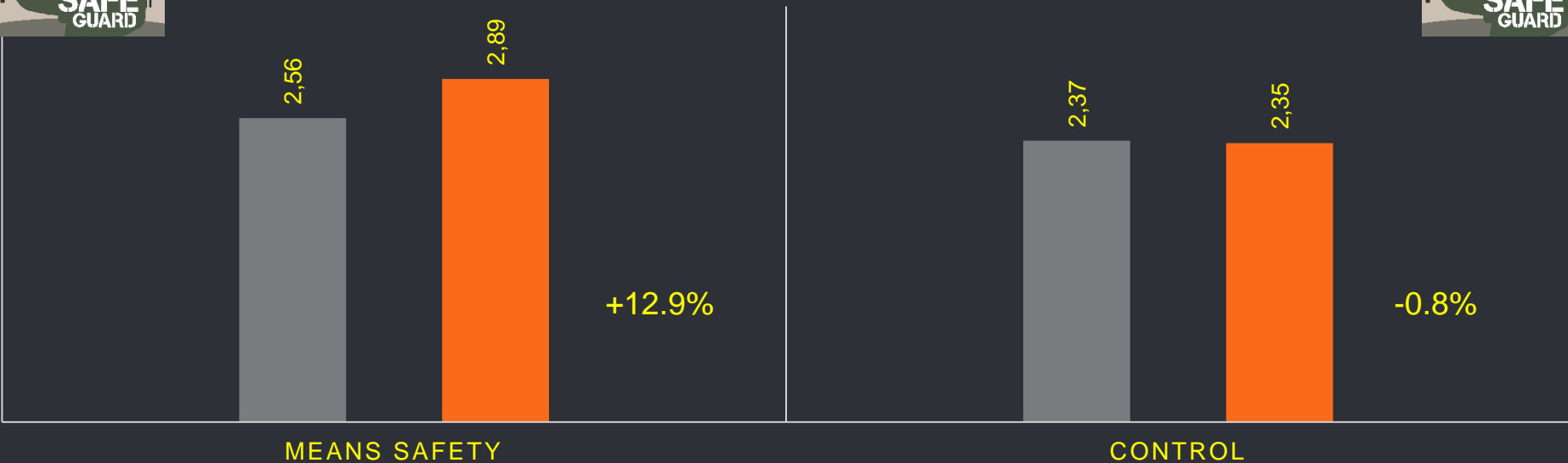
MEANS SAFETY

CONTROL

STORE FIREARMS AWAY FROM HOME TO PREVENT OWN SUICIDE



■ Pre-Treatment ■ Post-Treatment



STORE FIREARMS AWAY FROM HOME TO PREVENT SOMEONE ELSE'S SUICIDE

■ Pre-Treatment ■ Post-Treatment



● Early Returns

- We have not looked at actual storage behavior change data yet – do not want to bias results
- Anecdotal evidence is very promising
- 94% Retention at 3-month; 100% at 6-month
- 100% have indicated they would recommend to peers

**I wouldn't still
be here if....**

Multiple stories at follow-up of individuals who have changed their firearm storage in response to stress and who have credited our baseline conversation for the change

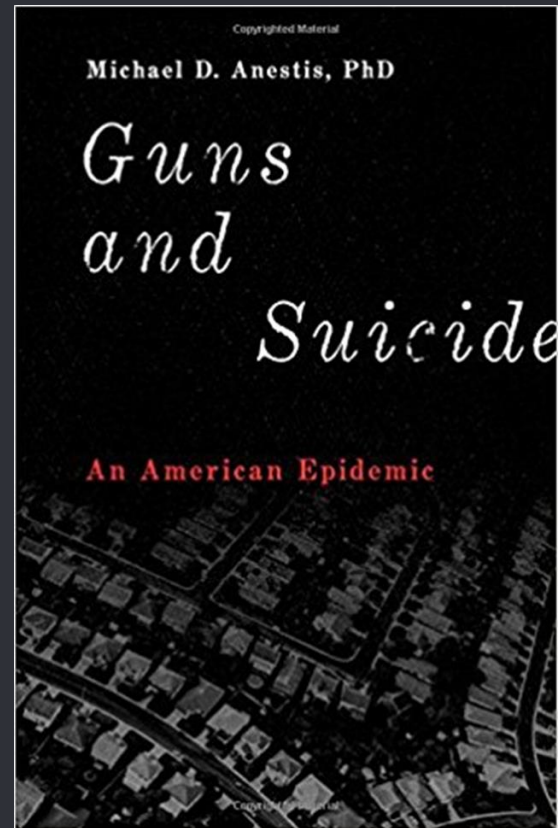


Take Home Message

- We can discuss difficult topics without causing arguments
- We can approach suicide prevention without threatening individual rights and culture
- Doing this before we know about risk increases our chances of saving lives by focusing on capability instead of desire

6

The path forward



Awareness

American firearm owners need to be aware of the risk associated with firearm access

- Awareness campaigns with credible messengers

Stakeholders need the funding and support to launch a wide scale awareness campaign that reaches those in need

● Legislation

- There are several laws shown to be associated with lower suicide rates
 - Extreme risk protection orders (ERPOs; “Red flag laws”)
 - Universal background checks
 - Mandatory waiting periods
 - Licensing requirements

Elected leaders need to pursue legislation that can save lives – these laws are popular and do not threaten the 2nd Amendment

Research

- Scientists need the funds to pursue projects that better enable to understand and decrease risk
 - Who is most likely do die by suicide using a firearm?
 - Where are firearm suicides most frequently occurring in Mississippi?
 - How do Mississippi firearm owners typically store their firearms and what influences those decisions?
 - Which type of message and messenger can be most persuasive?
 - How effective are various means safety approaches at reducing suicide in Mississippi?
 - Can lethal means counseling be effectively administered by non-health care professionals (e.g. clergy, teachers, firearm safety instructors)?



- **Thank you**

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@PsychBrownBag

Suicide and Emotion Dysregulation Lab (Facebook)

Guns and Suicide: An American Epidemic

Oxford University Press

