

Suicidal Behavior and Firearm Access: Results from the Second Injury Control and Risk Survey (ICARIS-2)



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Background

- Suicide remains a major public health problem
 - 11th leading cause of death in the US
 - Firearms are leading method in the US
 - Means restriction (limiting access to lethal means like firearms) may prevent suicides
- Does the presence of a firearm affect suicide risk?

Firearms in the Home

- Multiple case-control studies:
 - Firearm in the home = risk factor for suicide¹⁻¹⁶
 - True, or confounded by something else?
- Three recent studies with national surveys
 - No relation between mental health & firearms¹⁸
 - Those with firearms in the home not more or less likely to have lifetime or recent psychiatric disorders or *suicidal ideation*¹⁹⁻²⁰
 - Those with firearms in the home *less* likely to have a history of lifetime or recent *attempt*¹⁹⁻²⁰

Study Questions

- Are suicidal ideation, plans or attempts more common among those with a firearm in the home?
- Do the *nature* of suicidal plans differ among those with and without a firearm in the home?
- Data from the Second Injury Control and Risk Survey (ICARIS-2)

Methods: ICARIS-2

- Conducted by the CDC; 7/23/01- 2/7/03²¹
- Cross-sectional, list-assisted random-digit-dial telephone survey
 - Households in all 50 states and D.C. (coverage of ~96% of private residences with a phone; 113,476 numbers sampled)
 - English- and Spanish-speakers aged 18+
- Database includes weighting variables to generate national estimates
 - Account for selection probabilities, non-responses and post-stratification

Methods: Variables

- Basic demographic characteristics
 - Gender, self-described race, ethnicity, age, urbanicity of residence, employment status, education, marital status, income
- Firearm module (19 questions total)
 - Questions about whether firearms kept in the home and, if so, who owns them
- Suicide module (14 questions total)
 - Questions about recent and lifetime plans, attempts, and methods
 - Suicidal ideation: "Over the past 12 months, have you had thoughts of taking your own life, even if you would not really do it?"

Methods: Analysis

- 201 (2.2%) responses omitted for missing data for key firearm or suicide variables
- Steps in analysis
 1. Description of demographic and suicide characteristics (by presence of a firearm in the home)
 2. *Of those with a suicide plan*: Multivariate logistic regression of predictors of having a plan to use a firearm (adjusted for gender and age group)

Results

- Overall ICARIS-2 response rate: 48%
 - 9,483 respondents included in analysis
- Firearm in the home: 35% of respondents
 - 63% of these owned the firearm
- Suicidal behavior (past 12 months)
 - Thoughts: 7%
 - Plan: 2%
 - 34% overdose; 13% firearm; 12% jump
 - Attempt: 0.5%
 - Attempt (lifetime): 5%

	Firearm in home (n=2,915) Weighted %	No firearm in home (n=6,568) Weighted %	Total (N=9,483) Weighted %
Male (p<0.001)	46.9	44.3	45.2
Mean age (p<0.01)	46.9	44.3	45.2
Age group (years) (p<0.001)			
18-34	26.1	34.1	31.3
35-54	41.2	39.2	39.9
>=55	32.6	26.8	28.8
Non-Hispanic white (p<0.001)	83.6	64.0	70.9
Metropolitan area (p<0.001)	75.4	87.6	83.4
Currently employed	63.6	63.0	63.2
Household income below poverty threshold (p<0.001)	4.6	9.5	7.8
> High school education (p<0.05)	62.2	59.0	60.3
Currently in a married or unmarried couple (p<0.001)	76.8	61.6	68.0

(Under Pearson chi square tests)

	Firearm in home (n=2,915) Weighted %	No firearm in home (n=6,568) Weighted %	Total (N=9,483) Weighted %
Suicidal thoughts (past 12 mo.)	8.3	6.9	7.4
Suicide plan (past 12 mo.)	2.2	1.5	1.8
Pills/Overdose (p<0.05)	20.9	45.3	34.4
Firearm (p<0.001)	23.4	4.1	13.4
Jump	11.3	11.5	12.2
Cut	9.1	9.4	9.9
MVC	10.3	6.0	8.5
Suicide attempt (past 12 mo.)	0.51	0.46	0.48
Suicide attempt (ever)	5.3	5.7	5.5
Seek external help "if life not worth living" (p<0.01)	80.6	83.7	82.7

(Under Pearson chi square tests)

	Plan with firearm (n=20) Weighted %	Plan other than firearm (n=155) Weighted %	Odds Ratio, Adjusted for Age and Sex
Male	59.2	49.4	--
Mean Age	38.0	39.0	--
Non-Hispanic white	84.2	78.5	1.61
Metropolitan Area (p<0.05)	58.5	86.0	0.23
Currently employed (p<0.05)	29.9	59.9	0.20
Household income below poverty threshold	8.3	12.8	0.68
Above high school education	47.7	60.2	0.64
Currently in a married or unmarried couple	55.8	54.3	1.08
Firearm in home (p<0.001)	81.4	38.3	7.39
Suicide attempt, past 12 months (p<0.01)	2.2	18.6	0.10
Suicide attempt, ever	39.5	54.9	0.57
Seek external help for suicidal thoughts	75.3	73.1	1.17

(Under Pearson chi square tests)

Limitations

- 48% response rate
 - Weighting variables attempt to adjust for participation and sampling, and many results consistent with prior work
- Relies on self-report for suicide and firearm questions
- No information about timing of firearm access (prior access, access during period of suicidality)
- Cross-sectional
 - Cannot establish temporal sequence, causal relationship, or predictive validity

Summary

- Having a firearm in the home was *not* associated with having suicidal thoughts, plans, or attempts
- BUT, among those with a suicidal plan:
 - Those *with* a firearm in the home were more likely to have a *firearm* suicide plan
 - Those *without* a firearm in the home were more likely to have an *overdose* suicide plan

Conclusions

- For those with a suicidal plan, having a firearm in the home was associated with an increased odds of having a plan to use the firearm
- Having a firearm in the home may be a suicide risk factor because it increases the likelihood of a lethal attempt (rather than the likelihood of any attempt)
- Supports means restriction as an important method of suicide prevention

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Resources

- "Means Matter" Website from the Harvard School of Public Health
 - For providers: information about lethal means counseling
 - For families: safety tips, what to do with guns
 - Plus additional information about the research underpinning a means restriction approach to suicide prevention

<http://www.hsph.harvard.edu/means-matter/>

- National Hotline
1-800-273-TALK
(1-800-273-8255)

