



RUTGERS UNIVERSITY
Center for Gambling Studies

HIDDEN HARM

GAMBLING AND DEATHS BY SUICIDE IN ADMINISTRATIVE DATA

Mark van der Maas, PhD

Ryan DiMeglio, LCSW, LCADC

Center for Gambling Studies

Rutgers University School of Social Work



BACKGROUND

- Rapid expansion of gambling markets
- Unclear public health effects
 - Driven by a lack of strong data collected that is relevant to gambling
 - Especially anything that is longitudinal, national, and representative
- Lagging treatment networks
- Lack of commitment from representative governments
- Lack of commitment from existing funding bodies



GAMBLING AND SOCIAL COSTS

- More difficult to define compared with SUDs
 - No toxicology
 - No direct physical consequences
 - Relative rarity of diagnosis and treatment
- Comorbidities with other conditions make it hard to isolate
 - Depression or anxiety disorders, SUDs, ADHD, *etc.*
- Economic harms are also convoluted
 - Crime, “cannibalism”, bankruptcies
- Benefits are much easier to define
 - Clear and easily measured benefits to public funds and employment



DEATH BY SUICIDE AS A QUANTIFIABLE HARM

- Many methods are used to estimate the cost of death by suicide
 - Example: Medical and Work Loss Cost Estimation Methods from the CDC
 - **Medical:** Treatment before death, emergency transportation, coroner/medical examiner
 - **Work:** Estimated wages, fringe benefits, and household work over the expected remaining life span
- Estimated 49,449 deaths in 2022
 - Estimated cost: \$502.7 billion USD (Rockett *et al.* 2023)
- Does not include many related costs: collateral injuries; criminal justice costs and related adverse legal implications; toxic stress and educational impacts on the decedent's children; and damage to property



GAMBLING AND DEATH BY SUICIDE

- Recent meta-analysis (Armoon *et al.* 2023) on suicidal behaviors and thoughts among those with Gambling Disorder
 - Suicidal ideation: 31%
 - Attempted suicide: 16%
 - Population rates are 4.3% and 0.6% respectively (Ivey-Stephenson *et al.* 2022)
- Review of qualitative data (Marrionneau & Nikkinen, 2022) found two dominant themes
 - Indebtedness
 - Shame
- Is gambling an independent contributing factor or a correlate of poor mental health?



RUTGERS UNIVERSITY
Center for Gambling Studies

RESEARCH QUESTIONS

- What is the current value of the NVDRS for gambling research?
- Can it be used for population estimates?
- Can it be used for comparisons across jurisdictions or over time?
- How can the data fit existing conceptual frameworks of gambling-related harm?



NATIONAL VIOLENT DEATH REPORTING SYSTEM

- Record of all officially recorded violent deaths
 - Data on victims, perpetrators, and context
 - Started in 2003 with 6 states (MA MD NJ OR SC VI)
 - Currently 50 States, DC and PR
- Information drawn from death certificates, law enforcement reports, medical examiner/coroner reports
 - Abstracted into 100+ variables
 - Narrative summaries of medical examiner/coroner reports and law enforcement reports

STUDY DATA AND ANALYSIS

- Restricted Access Datafile granted by CDC
- All records from Jan 1, 2003 to Dec 31, 2020
 - 296317 records total: some cases involve multiple deaths
- Study involved a key term search and review of all cases
 - 39 search terms included (appendix slide)
 - 1925 possible cases identified
 - 1306 categorized as gambling-related.
- Three coders reviewing cases for 5 criteria
- Post-hoc intercoder agreement of 96.15%
- Bivariate analysis: Chi-square and Wilcoxon ranked sums
 - Demographics and taxonomy of harm from Langham *et al.* (2016)



CRITERIA

1. Decedent was identified as having a gambling problem or Gambling Disorder, either by diagnosis or informally.
2. Decedent was identified as having substantial debt related to their gambling or the gambling of someone close to them.
3. Decedent was found on the premises of a gambling venue or observed on such premises shortly before the event.
4. Gambling was mentioned in the summary of a suicide note, or gambling was communicated as a motivating factor for suicide to someone else.
5. Artifacts of gambling were found on the person of the decedent (e.g., lottery ticket, casino player card).



GAMBLING-RELATED SUICIDE VIGNETTES

- Decedent was identified as having a gambling problem or Gambling Disorder, either by diagnosis or informally

42 yr. old White male V was found with a gunshot wound to his head by his wife. V had been treated for depression previously and had been on antidepressant medication for 2 years. No prior suicide attempts noted. V's wife reported that V had a gambling problem and that his gambling had gotten much worse over the last few years since he lost his job. V and his wife had an argument two days earlier about V's gambling, during which V stated "I might as well just kill myself." However, V's wife reported that V would often make these comments, especially when he had been drinking, and never thought he would actually do it.



GAMBLING-RELATED SUICIDE VIGNETTES

- Decedent was identified as having substantial debt related to their gambling or the gambling of someone close to them

The V, a 57 yr. old Asian, male was found dead in his home from asphyxiation by hanging. V had no history of depression or previous suicide attempts. However, V was known to be a frequent gambler and had recently borrowed \$20,000 from his brother to help pay off some of his gambling debts. A handwritten note was left at the scene to V's family that said, "I'm sorry. There was no way out."



GAMBLING-RELATED SUICIDE VIGNETTES

- Decedent was identified as having substantial debt related to their gambling or the gambling of someone close to them

The V is a 61 yr. old White male who died of a shotgun wound to the chest. V and his wife had just returned home from drinking and celebrating V's birthday. V and his wife got into an argument over V's wife wanting to go to the casino. V's wife has a gambling problem and there was currently a lean against their house due to debt from her gambling. During the argument, V said "I can't take this shit anymore" and walked into the bedroom. A few moments later, V's wife heard a loud bang and went into the bedroom to find the V dead from a shotgun wound to the chest. Emergency Medical Services responded and pronounced the V dead.



GAMBLING-RELATED SUICIDE VIGNETTES

- Decedent was found on the premises of a gambling venue or observed on such premises shortly before the event

The V, a 47 yr. old Native American female was found deceased on the sidewalk outside a casino parking garage. V was known to be a frequent gambler. V had been divorced about 1 year ago and had a history of depression. V had two prior suicide attempts, one as an adolescent and one 3 months ago. Surveillance footage shows the V walking into the casino at 14:37. Footage shows the V leaving the casino at 17:05 walking to the edge of the parking garage on the 4th floor and then jumping off the side.



GAMBLING-RELATED SUICIDE VIGNETTES

- Gambling was mentioned in the summary of a suicide note, or gambling was communicated as a motivating factor for suicide to someone else.

V is a 48 yr. old Hispanic male found hanging in his bedroom by his wife. V's wife reported that she last saw the V alive when she left for work at 07:00. V's wife reported that V had been depressed lately, but had been seeing a therapist and had started taking antidepressant medication a few months ago. Suicide note was found on the nightstand. Note stated that V had lost a large amount of money gambling and had been trying to win it back, but had ended up losing all of the family's money. V also wrote that he was sorry and that the family would be better off without him.



GAMBLING-RELATED SUICIDE VIGNETTES

- Artifacts of gambling were found on the person of the decedent (e.g., lottery ticket, casino player card)

V is a 68 yr. old African American male. V was found dead from a gunshot wound to the head in his truck in the parking lot of his apartment complex. V had been divorced 10 years ago and had lived alone since. No note was left on the scene. Numerous old lottery tickets and scratch offs were found on the victim's person and in the victim's truck.



RESULTS: DEMOGRAPHICS AND GR SUICIDE

- Difference across age: Underrepresentation in 18-30 and >71, overrepresentation in 41-50 and 51-60
- Significant but small underrepresentation among females (21.7% vs 18.1% GR)
- Overrepresentation among Asian/Pacific Islander (2.2% vs 7.0%GR)
- Overrepresentation among Divorced AND Civil Union/Domestic Partnerships
- Nevada showed 4.0%GR. Overall average 0.44%GR
- Relative stability in overall rate across time



RESULTS: GAMBLING RELATED HARM

- Based on Langham et al's taxonomy of gambling harm
 - Alcohol use suspected: 21.2% vs 28%GR
 - Mental Health Diagnosis: 38.8% vs 35.1%GR
 - Intimate partner problems: 25.6% vs 31.5%GR
 - Family relationship problems: 6.4% vs 9.6%GR
 - Financial Problems: 8.6% vs 50.3%GR
 - Job Problems: 9.8% vs 17.6%GR
 - Precipitated by another crime: 2.5% vs 3.8%GR



DISCUSSION

- Content analysis was able to identify gambling-related cases
- Financial issues seem to be most salient in GR deaths by suicide
 - Contrast with no significant relationship with previous mental health diagnosis
- Low rates are likely an underestimation of cases
 - Rintoul et al. 2023 estimated 4.2%GR Victorian Suicide Register
 - That data has explicit instructions for abstractors regarding the inclusion of gambling-related cases
- Wealth of data in understanding case characteristics of gambling-related deaths by suicide
 - Actual deaths are distinct from ideation or attempts
- Application of conceptual framework of harm was useful, but constrained by variables included in the NVDRS



LIMITATIONS

- Multiple points for potential bias
 - Method still relies on disclosure of gambling issues which are easily hidden and highly stigmatized
 - Potential for bias in coding strategy/coders
 - Law enforcement agents or medical examiners may not be interested/aware of possible relevance of gambling to death by suicide
- Comparisons of rates over time need to consider when states started participation



CONCLUSIONS

- Due to likely underestimation, the NVDRS presents problems for estimating population-level harm due to gambling
 - Overall deaths can still inform some policy impact research
 - Existing methods for inclusion of gambling content in administrative violent death datasets would be relatively easy to include
- Administrative datasets like the NVDRS have value for understanding public health impacts of gambling, but will be limited until gambling is intentionally included in recording procedures in ways on par with other addictive behaviors and/or contextual factors



RUTGERS UNIVERSITY
Center for Gambling Studies

ACKNOWLEDGEMENTS

- Funding provided by the International Center for Responsible Gaming Seed Grant
- Data disclaimer: “The National Violent Death Reporting System (NVDRS) is administered by the Centers for Disease Control and Prevention (CDC) by participating NVDRS states. The findings and conclusions of this study are those of the authors alone and do not necessarily represent the official position of the CDC or of participating NVDRS states.”



REFERENCES

- Rockett IR, Ali B, Caine ED, Shepard DS, Banerjee A, Nolte KB, et al. Escalating costs of self-injury mortality in the 21st century United States: an interstate observational study. BMC public health. 2023;23(1):285
- Ivey-Stephenson AZ, Crosby AE, Hoenig JM, Gyawali S, Park-Lee E, Hedden SL. Suicidal thoughts and behaviors among adults aged ≥ 18 years—United States, 2015–2019. MMWR Surveillance Summaries. 2022;71(1):1.
- Armoon B, Griffiths MD, Mohammadi R, Ahounbar E. Suicidal behaviors and associated factors among individuals with gambling disorders: A meta-analysis. Journal of gambling studies. 2023;39(2):751-77.
- Langham, E., Thorne, H., Browne, M., Donaldson, P., Rose, J., & Rockloff, M. (2015). Understanding gambling related harm: A proposed definition, conceptual framework, and taxonomy of harms. BMC public health, 16, 1-23.

SEARCH STRING	Total	KEPT
Total	1925	1306
GAMBL	982	960
casino	489	387
bookie	9	9
poker	72	31
wager	1	0
bingo	16	0
roulet	278	4
blackjack	3	1
black jack	13	2
sports b	23	4
sport b	40	0
betting	14	11
bet on	0	0
bets on	0	0
horse track	2	0
horse rac	7	4
racetrack	9	3
race track	12	1
lotter	79	49
craps	14	0
scratch off	5	4

SEARCH STRING	Total	KEPT
scratch ti	5	4
scratcher	16	0
craps	14	0
dice	66	3
money on	304	20
on football	2	0
on basketball	1	1
on nfl	0	0
on nba	0	0
on mlb	0	0
on baseball	0	0
on nhl	0	0
on hockey	1	0
on soccer	0	0
playoff	0	0
play off	0	0
superbowl	3	0
super bowl	12	0
vegas	59	9
*reno *	4	2
atlantic city	3	1

