

Health correlates of sports betting in young adults

Scott Graupensperger, Joseph Lambuth, & Arvin Shaygan

Graups@uw.edu | Twitter @Graups33



UNIVERSITY *of* WASHINGTON



Land Acknowledgment

The Portland Metro area rests on traditional village sites of the Multnomah, Wasco, Cowlitz, Kathlamet, Clackamas, Bands of Chinook, Tualatin, Kalapuya, Molalla, and many other tribes who made their homes along the Columbia River. Indigenous people have created communities and summer encampments to harvest and enjoy the plentiful natural resources of the area for the last 11,000 years.

We want to recognize that Portland today is a community of many diverse Native peoples who continue to live and work here. We respectfully acknowledge and honor all Indigenous communities—past, present, future—and are grateful for their ongoing and vibrant presence.

Disclosure

The authors *do not* have any financial interest, arrangement, or affiliation with medical/pharmaceutical/equipment companies.

We have no conflicts of interest to disclose.

Funding Acknowledgment



INTERNATIONAL CENTER FOR RESPONSIBLE GAMING

This research was funded by a grant from the International Center for Responsible Gaming, funded by Bally's Corporation. Its contents are solely the responsibility of the author(s) and do not necessarily represent the official views of the International Center for Responsible Gaming or Bally's Corporation.



EVERGREEN
council on problem gambling

Introduction to Our Team



Scott Graupensperger, PhD
Joseph Lambuth
Arvin Shaygan

Modesta Hurtado, B.S.
Frank Song, M.S.
Ty Lostutter, PhD

Sports Betting

Definition: Wagering something of value (\$) on aspects of sporting events, either live or computer-based (e-sports).

- ****Outcome is determined by chance****

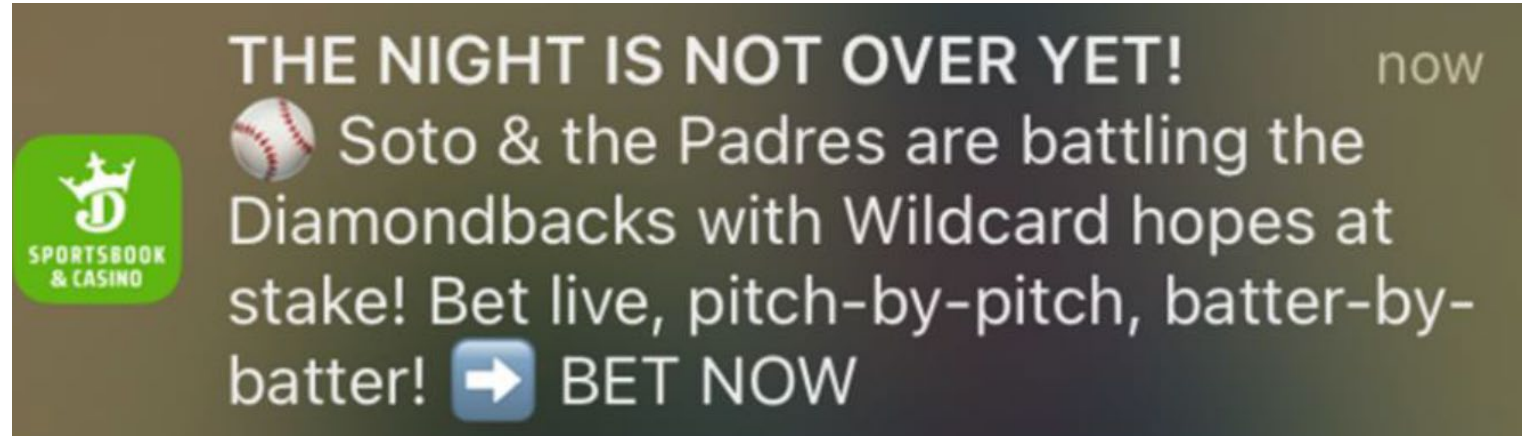
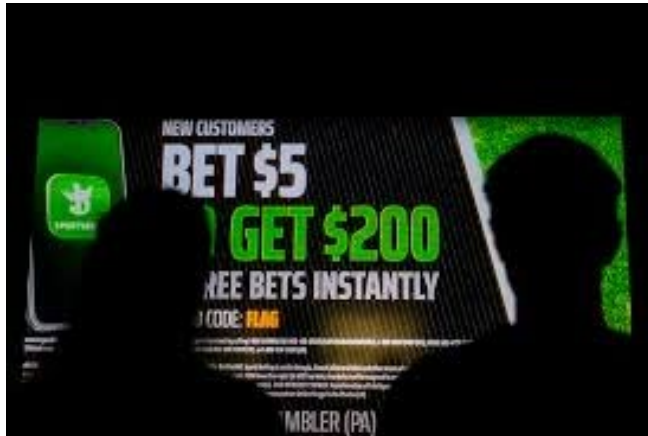
Concerning Trends: In 2021, there was an **80%** increase in prevalence of \geq monthly sports betting (10% to 18%).

- Growing especially fast for young adults. Over **one-third** of young adults have done sports betting in the past month, and **19%** of young adult sports bettors make bets **at least weekly**.

Changing Landscape: Mobile betting, prop bets, live in-game betting, daily fantasy betting, etc.

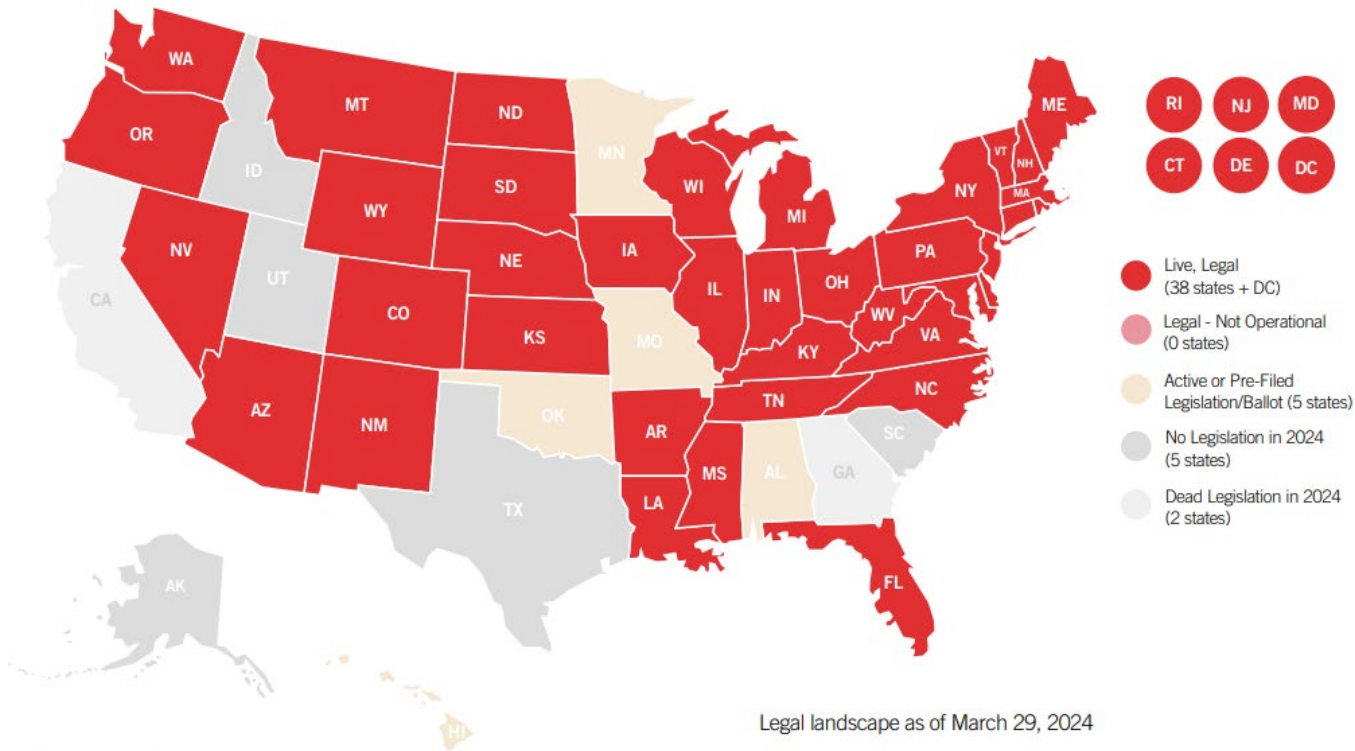


Sports Betting



Sports Betting in the US

U.S. Legal Sports Betting



Washington: Legal, but among the most highly regulated.

- Can only sign-up and place bets from a tribal casino property.
- Cannot bet on in-state college.

Oregon: Less regulated than WA.

- Can only use one sportsbook (DK).
- Cannot bet on *any* college sports.

A Public Health Priority??

- Despite concerning trends, sports betting is not *yet* widely recognized as a public health concern.
- As such, there is almost ZERO available federal funding.
- Industry-funded, but with ethical considerations, and <\$1m.

WHY IS THIS?

- Very little research on health-related correlates of sports betting.



National Institutes
of Health

PROJECT HOBBS

**A RESEARCH STUDY EXPLORING YOUNG ADULTS' SPORTS BETTING AND
OTHER HEALTH-RELATED BEHAVIORS**

To find out if you are eligible to participate, complete the following brief survey

[TAKE THE SCREENER SURVEY >](#)

- Young adult sports bettors (N = 221) complete an in-depth baseline, bi-weekly surveys for a full calendar year, and a 15-month follow-up. ***1,430 were screened.***
- Mean age = 24.4 (range 18-29).
- 77.7% male, 68.6% had attained college degree, and 64.6% identified as white.
- Participants represent 36 different states.

PROJECT HOBBS

Overview of Presentations

- **Joseph** - Psychosocial predictors of sports betting (social norms)
- **Arvin** - Associations between problem sports betting and mental health indices.
- **Me** – Associations between sports betting and alcohol use.
- **Breakout Discussions**
 1. Risk factors and antecedents for sports betting.
 2. Sports betting and mental health.
 3. Sports betting and substance use.

PSYCHOSOCIAL PREDICTORS OF SPORTS BETTING

Joseph Lambuth

Prevention Focus

- Early prevention of problem gambling is critical as young adults are learning to navigate **financial independence** and in a vulnerable developmental stage for the **onset of addiction**.
- Identifying antecedents to problematic gambling is a key step towards prevention.
- We know very little about risk factors for sports betting, other than:
 - Male
 - Younger age
 - Religiosity
 - Higher income
- Presently, we focus on psychosocial predictors.

Social Norms

- Young adults are highly susceptible to peer influences, and look to others for how to behave.
- **Social Norms Theory:** Individual behavior is largely driven by perceptions of what others do and what others think about a given behavior (social norms).
 - Descriptive Norms: Perceptions of peers' engagement (e.g., how many of my peers engage in sports betting, or how much do my peers wager).
 - Injunctive Norms: Perceptions of peers' attitudes (e.g., how much money do my peers think is *acceptable* to wager on sports betting).

Social Norms

- Young adults are motivated to **conform** to perceived norms as a means of fitting in and avoiding be excluded or ostracized.

... however, normative perceptions are often overestimated.
- Given the salience of sports betting in the media (constant advertisements), one may easily overestimate the prevalence, engagement, and acceptability of sports betting.
- Proximal normative influences (e.g., close friends) may be a particularly salient influence on young adults' engagement in sports betting.

Social Norms and Traditional Gambling

No existing studies have examined sports betting norms, but there is some indication that social norms are predictive of traditional gambling.

- In college students, perceived injunctive and descriptive norms each uniquely predicted self-reported gambling frequency, expenditure, and negative consequences related to gambling (Larimer & Neighbors, 2003).
- Perceived norms for more proximal referent groups (friends and family) are more predictive of gambling, and injunctive norms are more associated with gambling frequency (Meisel & Goodie, 2014).
- Among non-gambling adolescents, **initiation** was predicted by both injunctive and descriptive norms for peers (Parrado-Gonzalez et al., 2023).

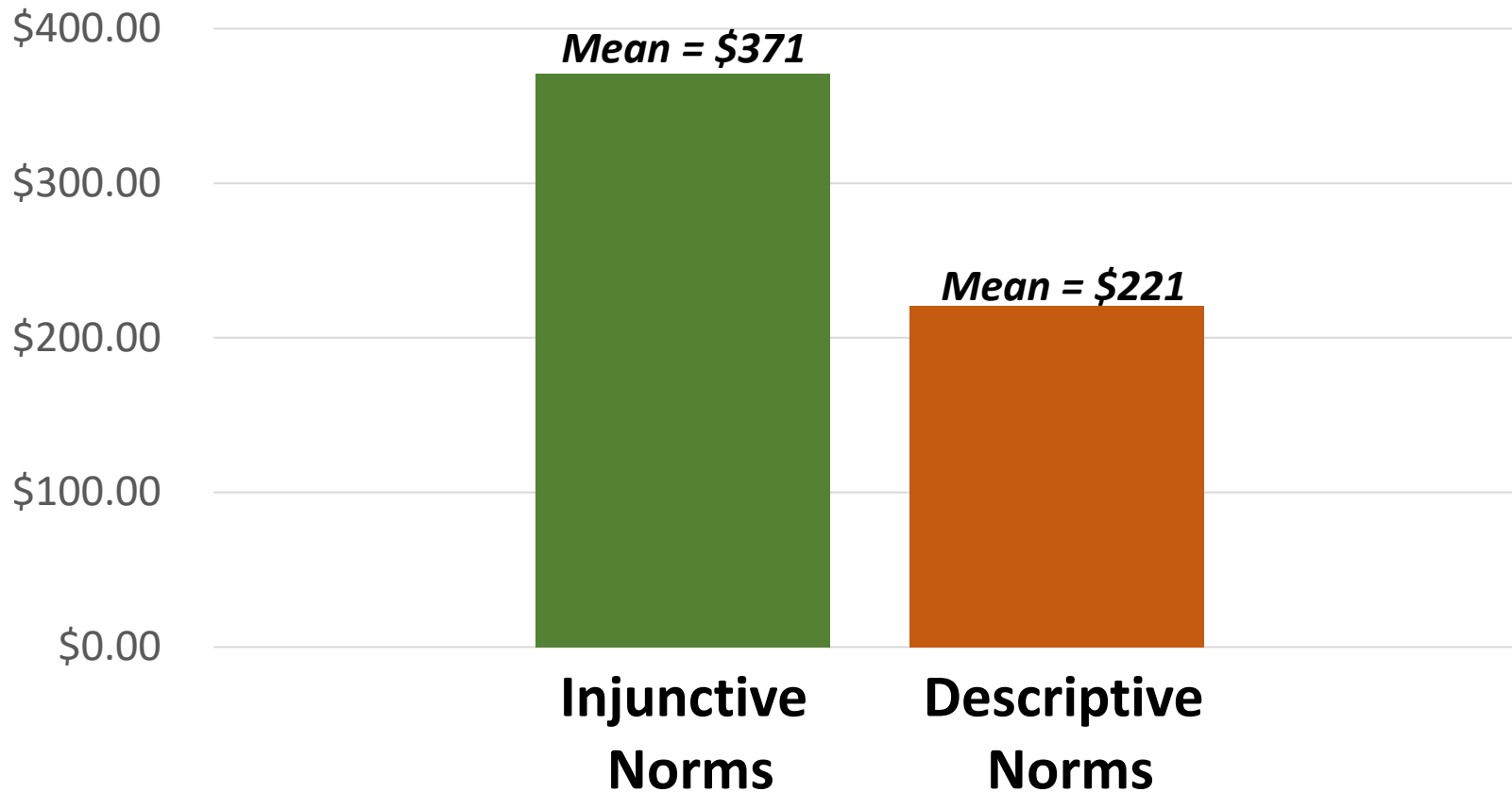
Current Study

- 1. Estimating associations between perceived sports betting norms (for one's friends) and one's engagement in sports betting and symptoms of problem sports betting.**
- 2. Do fluctuations in perceived sports betting norms map onto fluctuations in young adults' sports betting engagement?**

Key Findings – Baseline Data

Injunctive Norms: “In the next two weeks, how much money do your friends think is an acceptable amount to wager on sports betting?”

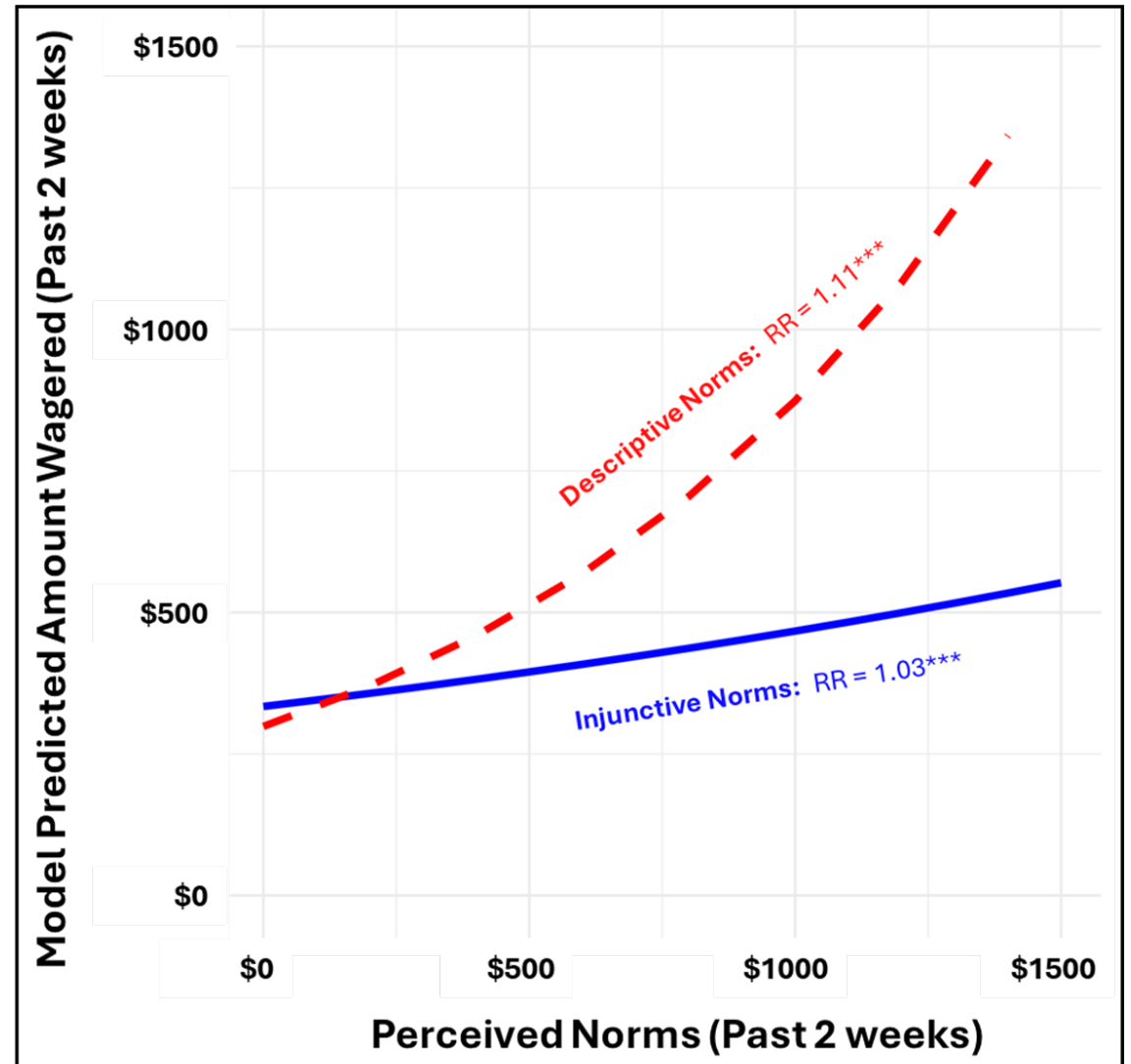
Descriptive Norms: “In the next two weeks, how much money do you think your friends will wager on sports betting, on average?”



Key Findings – Baseline Data

Both injunctive and descriptive sports betting norms predicted (a) sports betting frequency, (b) amount wagered on sports betting, and (c) symptoms of problem sports betting.

- Associations were strongest with amount wagered (same scale), and descriptive norms were notably more predictive than injunctive norms.



Key Findings – Longitudinal Data

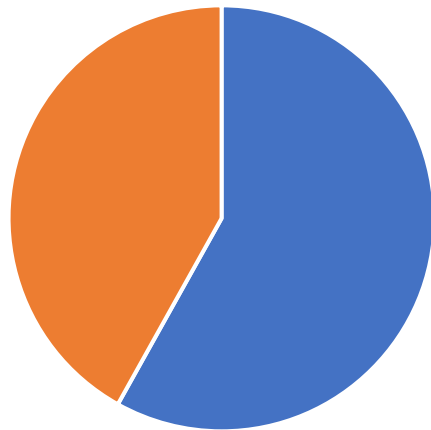
Injunctive Norms: “To what extent do you agree or disagree: In the next two weeks my friends think it would be good to engage in sports betting?”

Descriptive Norms: “What percentage of your friends do you think will engage in sports betting in the next two weeks?”

Variability in Injunctive Norms

58.1% of the variability is due to between-person differences.

41.9% of the variability is due to within-person fluctuations

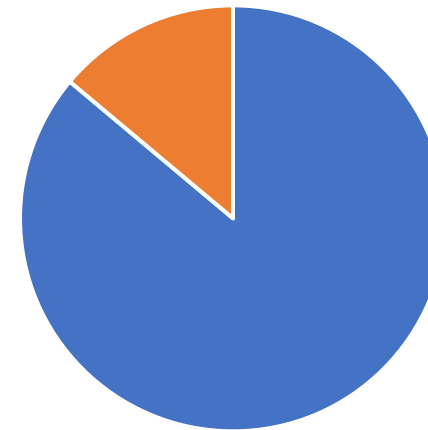


■ Between Person ■ Within Person

Variability in Descriptive Norms

86.1% of the variability is due to between-person differences.

13.1% of the variability is due to within-person fluctuations

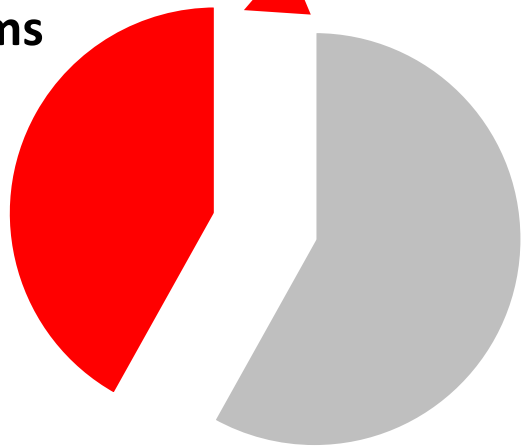


■ Between Person ■ Within Person

Key Findings – Longitudinal Data

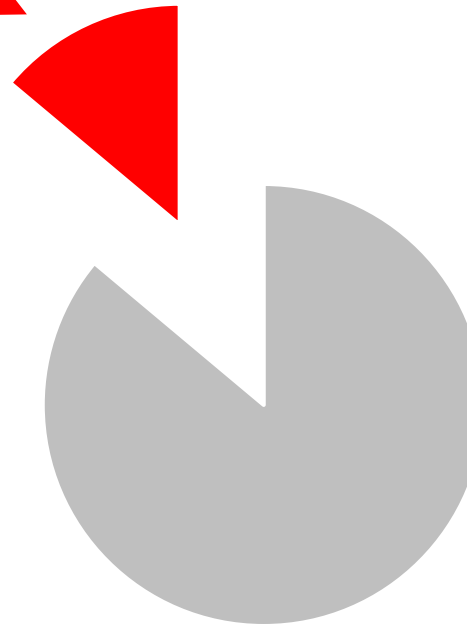
We are interested in these within-person fluctuations

Injunctive Norms



■ Between Person ■ Within Person

Descriptive Norms



■ Between Person ■ Within Person

Key Findings – Longitudinal Data

Sports Betting Frequency was predicted by both injunctive and descriptive norms.

- When norms perceptions were higher than ones' usual, young adults reported betting on sports more frequently than usual.
- Stronger effect of injunctive norms than descriptive norms.

Key Findings – Longitudinal Data

Total number of bets was also predicted by both injunctive and descriptive norms.

- When norms perceptions were higher than ones' usual, young adults reported placing more sports bets than usual.
- Stronger effect of injunctive norms than descriptive norms.

Key Findings – Longitudinal Data

Total amount wagered was predicted by injunctive norms, but *not* by descriptive norms.

- When injunctive norms perceptions were higher than ones' usual, young adults reported placing more sports bets than they usually place.

Main Takeaways

- Young adults' sports betting engagement is predicted by their perceptions of friends' sports betting behavior and attitudes.
- These perceived norms fluctuated across assessments, and at timepoints when norms were elevated (higher than usual), young adults generally report greater sports betting behavior than usual.
- Social influences may be a key focus in forthcoming interventions.

SPORTS BETTING & MENTAL HEALTH

Arvin Shaygan

Problem Gambling

- **Symptomology:** Gambling behavior that is damaging to a person or their family, often disrupting their daily life and career.
- Problem gambling is most prevalent among young adults 18-30 (5.4% in the U.S.).
- However, MOST societal burden is caused by sub-clinical levels of gambling, highlighting the need to examine PG symptoms even among non-problem gamblers.
- Problem gambling can cause harm through undue financial burden, damage to interpersonal relationships, and inability to fulfill one's responsibilities.

Problem Gambling & Mental Health

- Problem gambling has been linked to several mental health concerns (e.g., depression).
- The link is especially strong for those with earlier onset of gambling.
- Despite these links, problem gambling is not widely studied from a public health perspective.
- **Sports betting** is growing rapidly among young adults, an age period with increased vulnerability to mental health concerns, but there have been few studies specifically examining mental health correlates of sports betting.

Sports Betting & Mental Health

- One study has found elevated psychological distress levels among adults who engage in sports betting (Gainsbury et al., 2019).
- Suicidal ideation is higher among adults who play daily fantasy (Nower et al., 2018).
- There is a pressing need to build upon these few studies by examining mental health correlates of problem sports betting symptoms – including indices of wellbeing.

Current Study

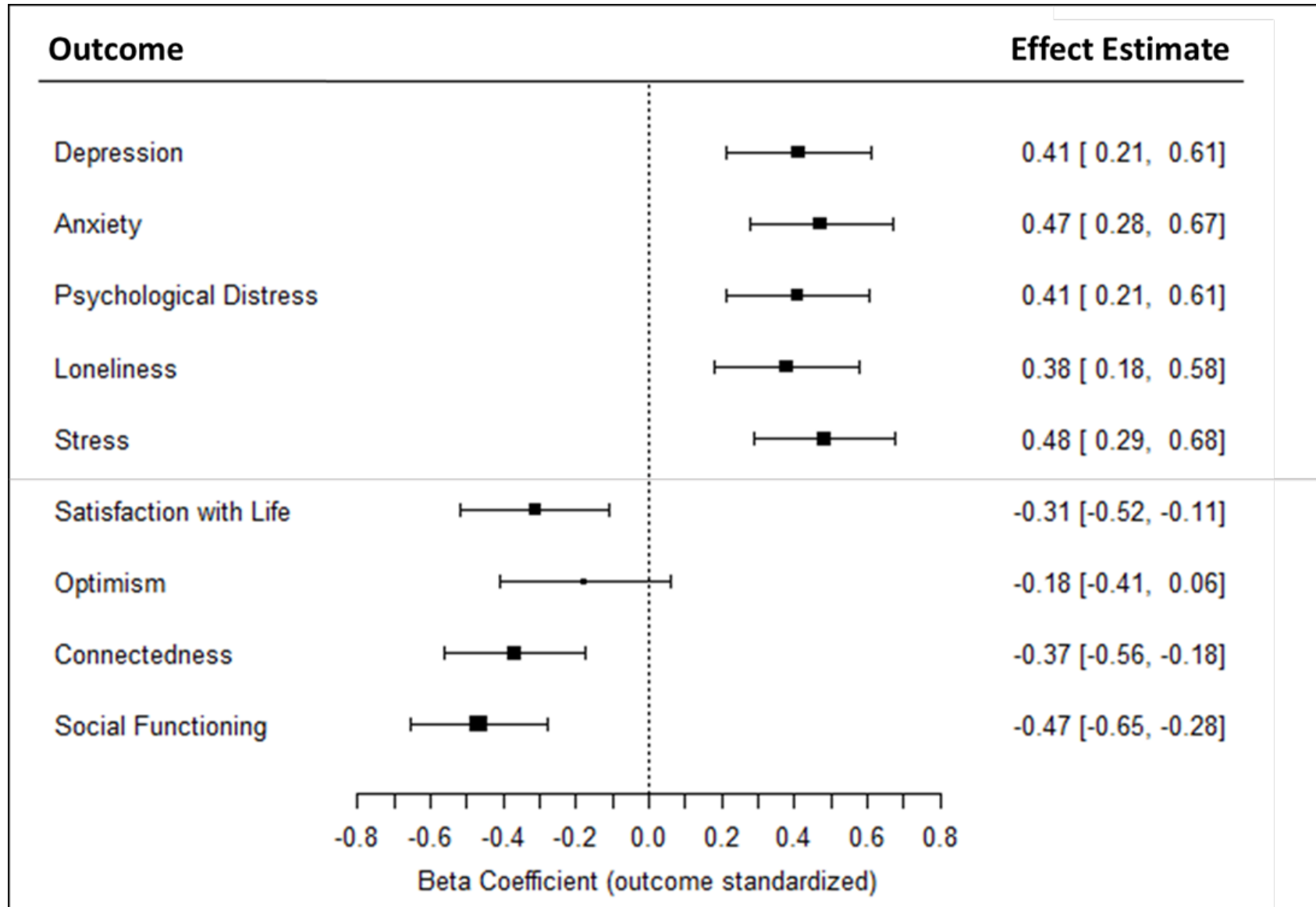
- 1. Estimating associations between indices of mental health/wellbeing and symptoms of problem sports betting in young adults.**
- 2. Examine whether fluctuations in problem sports betting are associated with fluctuations in mental health and wellbeing across longitudinal follow-ups.**

Measuring problem sports betting:

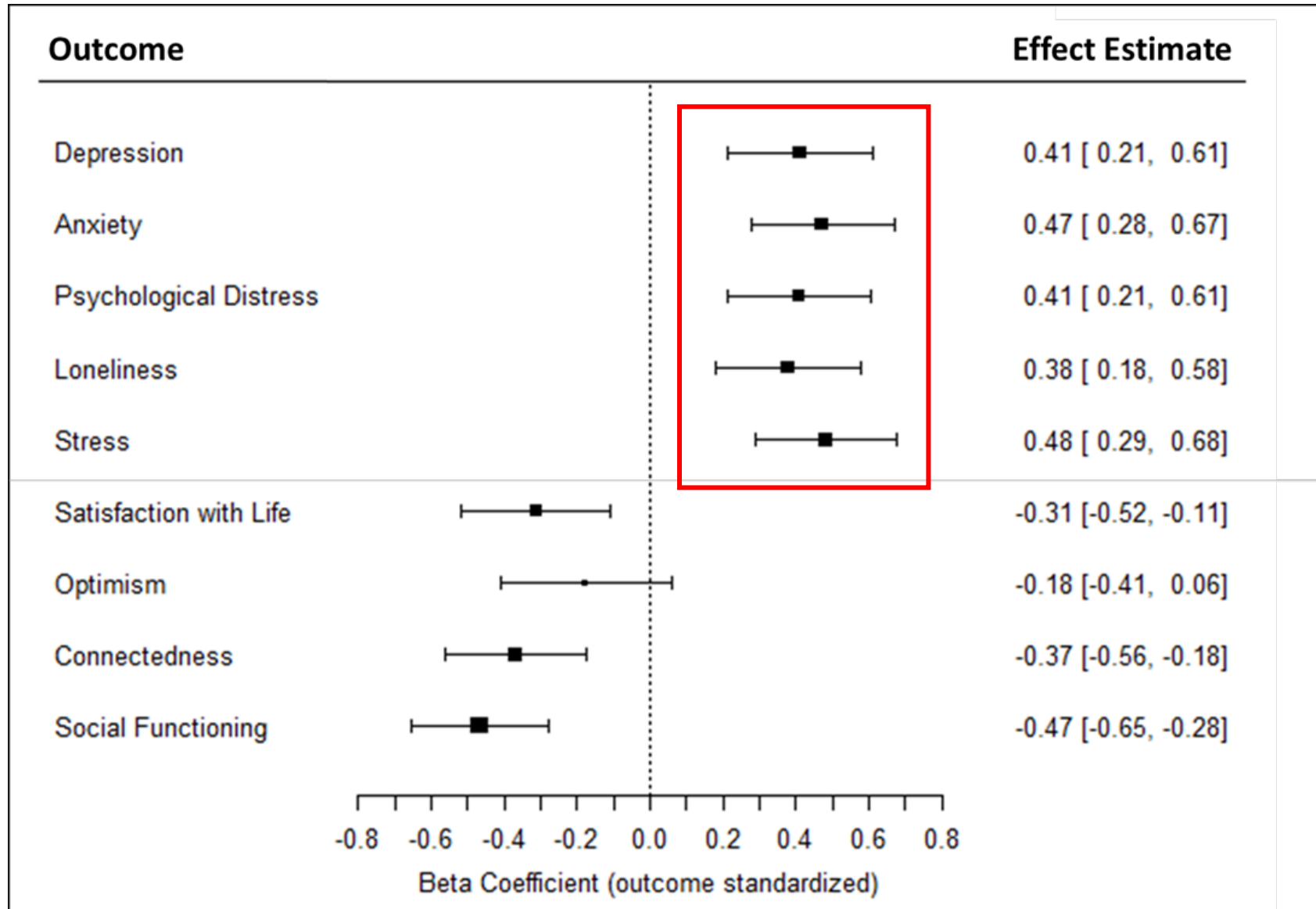
- We recently adapted the PGSI specifically to sports betting.
- Psychometrically validated this measure (currently under review)

-
1. When you think of your sports betting in the past 3 months, have you bet more than you could really afford to lose?
 2. Still thinking about the past 3 months, have you needed to bet larger amounts of money when sports betting to get the same feeling of excitement?
 3. When you bet on sports, did you bet again another day to try to win back the money you lost?
 4. Have you borrowed money or sold anything to get money to bet on sports?
 5. Have you felt that you might have a problem with sports betting?
 6. Has sports betting caused you any health problems, including stress or anxiety?
 7. Have people criticized your sports betting or told you that you had a problem, regardless of whether or not you thought it was true?
 8. Has your sports betting caused any financial problems for you or your household?
 9. Have you felt guilty about the way you bet on sports or what happens when you bet on sports?
-

Key Findings – Baseline Data

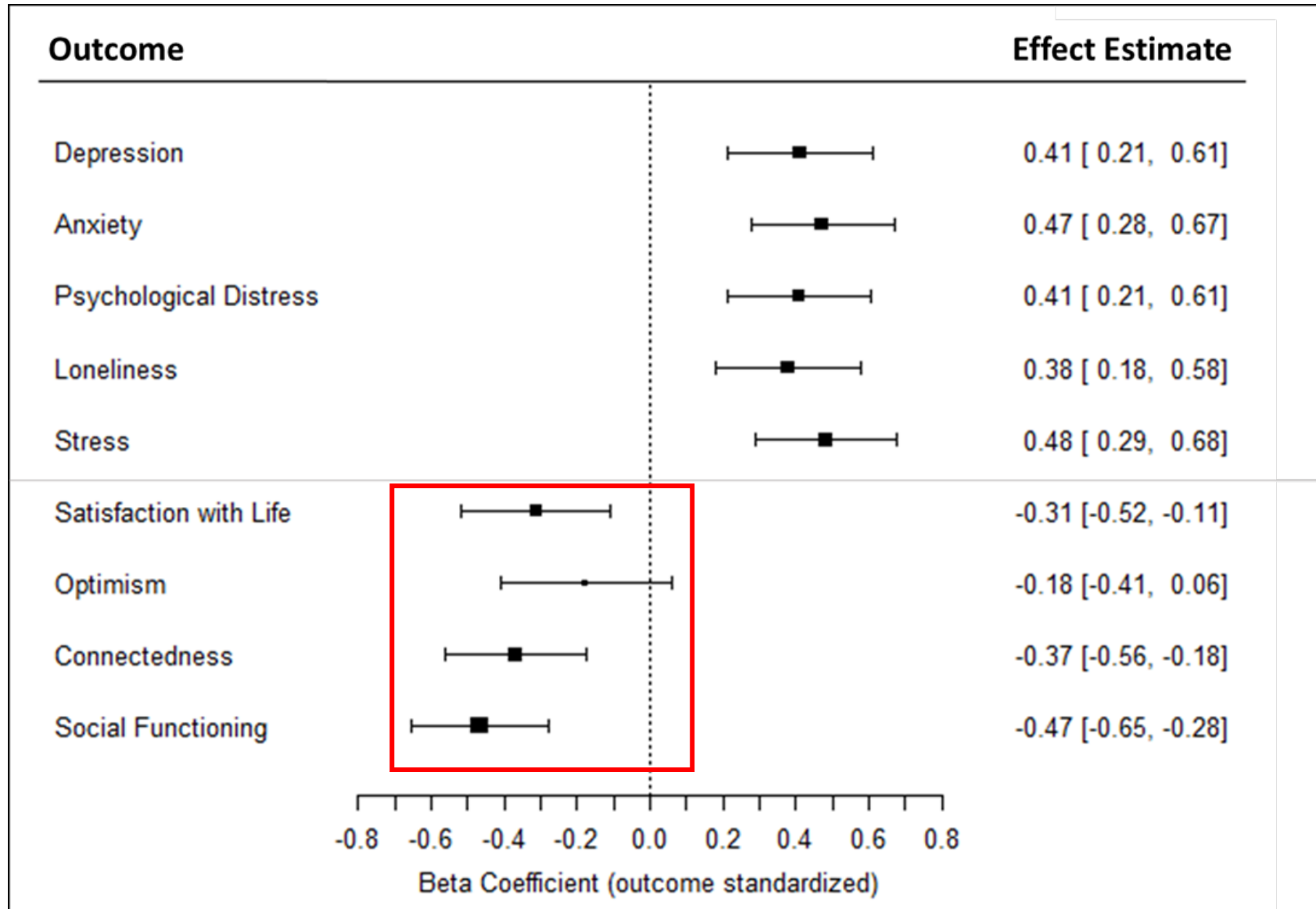


Key Findings – Baseline Data



- Positive associations show problem sports betting is associated with **higher** scores on mental health measures.

Key Findings – Baseline Data



- Positive associations show problem sports betting is associated with **higher** scores on mental health measures.
- Inverse associations show problem sports betting is associated with **lower** scores on wellbeing measures.

Longitudinal Associations

- Biweekly surveys asked the 5 consequences items from the sports betting PGSI.
- Models estimated whether two-week periods that young adults experienced more negative sports betting consequences (relative to their usual/average) also corresponded to poorer than usual mental health and wellbeing indices.
- **Outcomes included in the longitudinal surveys:**
 - Depression symptoms
 - Anxiety symptoms
 - Psychologic distress
 - Stress
 - Loneliness
 - Social functioning
 - Satisfaction with life

Key Findings – Longitudinal Data

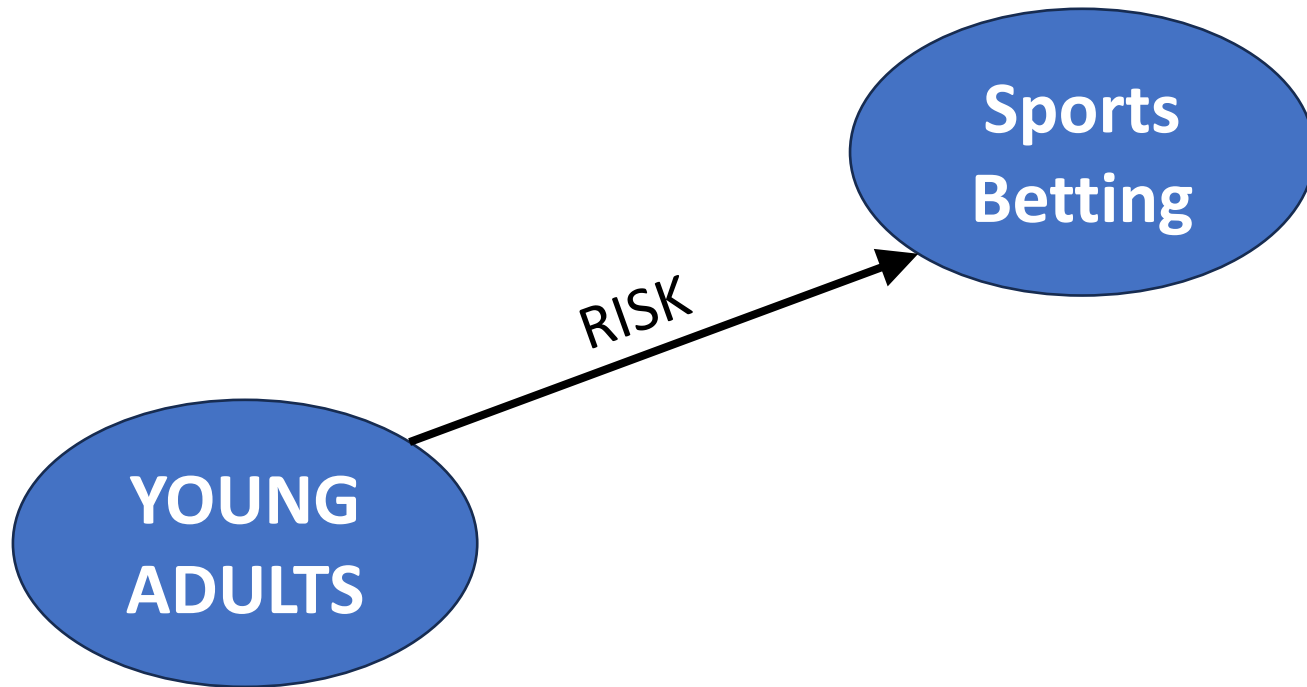
- **Findings across models show *robust* associations between negative sports betting consequences and mental health/wellbeing indices.**
- That is...
 - At timepoints young adults report more negative consequences than they usually do, they have significantly more symptoms of depression, anxiety, psychological distress, stress, and loneliness.
 - Young adults also report significantly lower levels of social functioning and satisfaction with life at timepoints they report more negative sports betting consequences than usual.

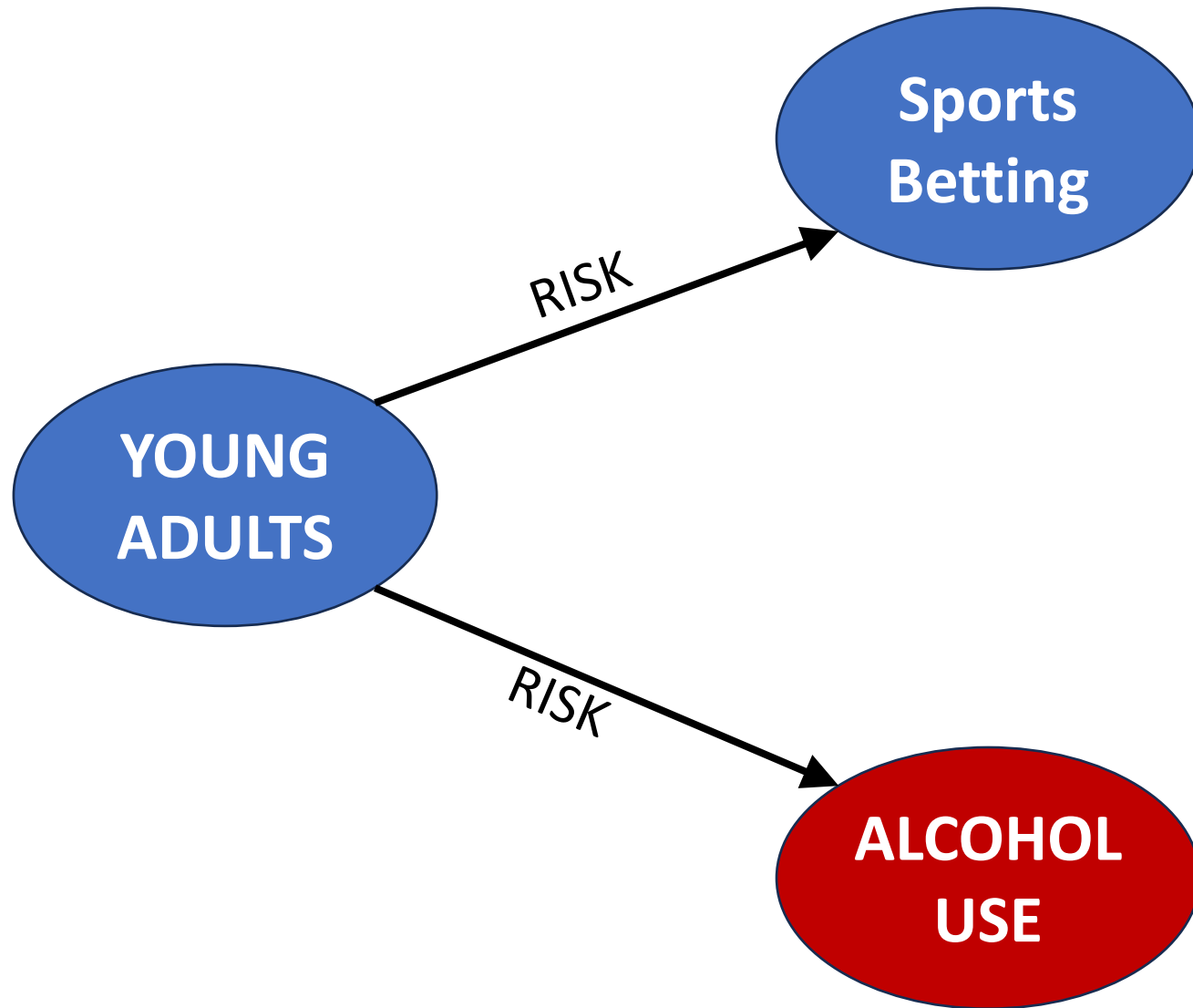
Main Takeaways

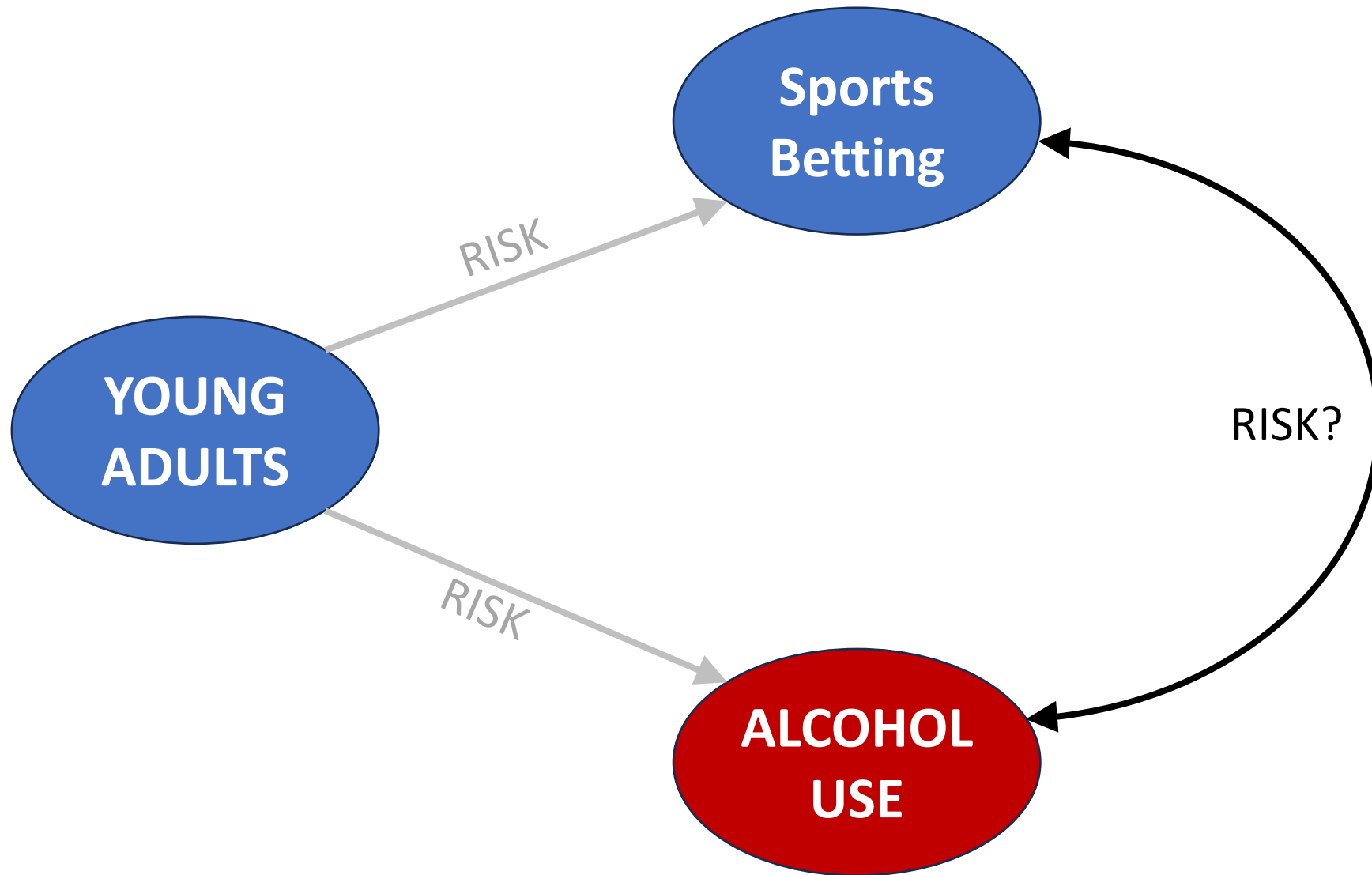
- Findings highlight negative impacts of problem sports betting on the mental health of young adults.

....

SPORTS BETTING & ALCOHOL USE







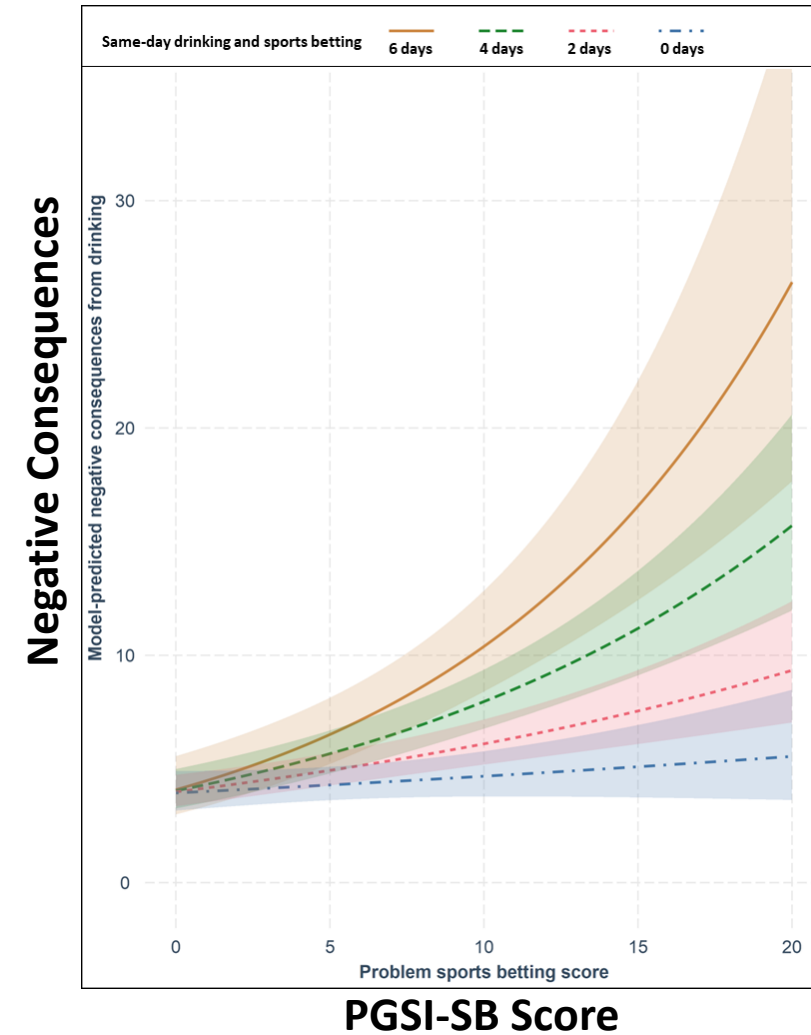
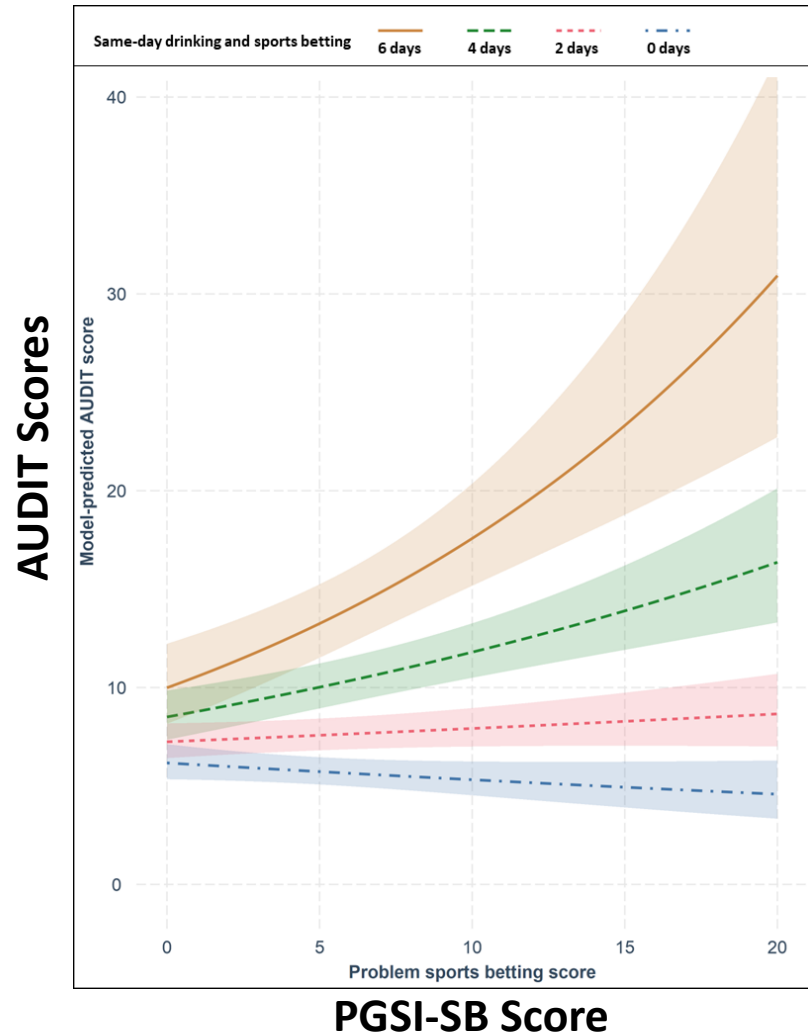
Sports Betting & Alcohol – Baseline Findings

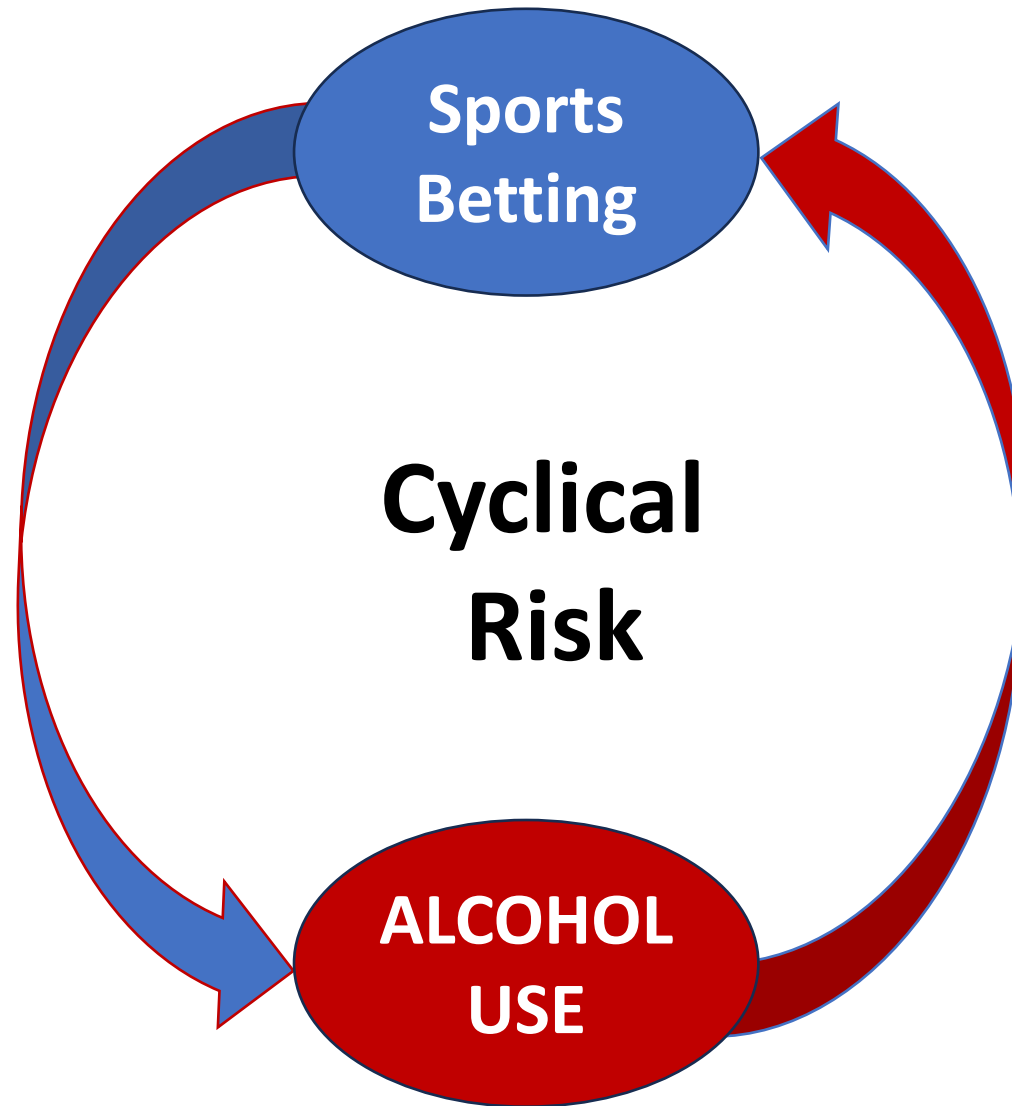
Is problem sports betting associated with AUD symptoms and negative consequences?

1. Higher scores on the PGSI-SB were *not* associated with any vs. alcohol use.
2. PGSI-SB scores significantly predicted greater AUDIT scores (*1-unit increase in PGSI-SB → 3% increase in AUDIT scores*).
3. Higher PGSI-SB scores were significantly associated with any vs. no alcohol consequences (*1-unit increase in PGSI-SB → 12% increased odds of any consequences*).
4. Higher PGSI-SB scores were significantly associated with *number* of consequences. (*1-unit increase in PGSI-SB → 7% increase in negative consequences*).

Sports Betting & Alcohol – Baseline Findings

Are associations *amplified* for those who more frequently sports bet and drink on the same day?





Sports Betting & Alcohol – Longitudinal Findings

Do fluctuations in alcohol use predict fluctuations in sports betting over time?

- Weeks with elevated drinking frequency corresponded to weeks with:
 - More frequent sports betting
 - Total number of sports bets placed
 - Total amount wagered
 - Negative sports betting consequences

Sports Betting & Alcohol – Longitudinal Findings

Do fluctuations in sports betting predict fluctuations in alcohol use over time?

- Weeks with elevated sports betting frequency corresponded to weeks with:
 - More frequent drinking
 - Total drinks consumed
 - Heavy episodic drinking
 - Negative alcohol consequences

Conclusions

1. Young adults with elevated sports betting also tend to have problems with alcohol use (trait-level associations).

- Barstool Culture?



2. Sports betting and alcohol use behaviors FLUCTUATE TOGETHER (state-level).

- Directionality is difficult to disentangle, but we have some thoughts...

**WHAT WE'VE LEARNED
&
WHERE WE'RE GOING**

Key Takeaways

- 1. Peer influence may be a salient driver of sports betting engagement.**
- 2. Problem sport betting may contribute to mental health concerns for young adults.**
- 3. A complex (but concerning) association between sports betting and alcohol use.**

Sports Betting vs. Traditional Gambling

Concerning hallmarks of sports betting:

- 1. Myth or fact? – “*Sports betting is a skill that I have control over*”**

Sports Betting vs. Traditional Gambling

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stay tuned...
More to Come!

HOBS Future Aims

1. **Distal Health Outcomes?** – What are the long-term risks of these patterns?

- Sports betting patterns predict PGSI / AUDIT / Mental Health at 15-month FU?
- Do *person-specific associations* indicate longer term risk?

HOBS Future Aims

2. High risk periods? – Mapping sports betting engagement across a full calendar year.

- March Madness, Super Bowl, etc.
- Down-periods? (*might indicate elevated risk*)



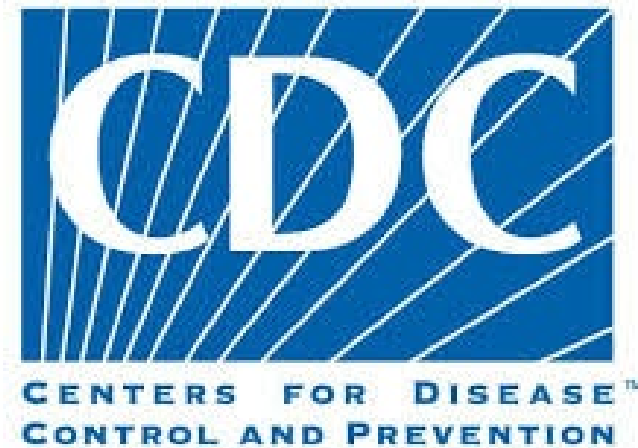
HOBS Future Aims

3. Pursuit of Federal Funding

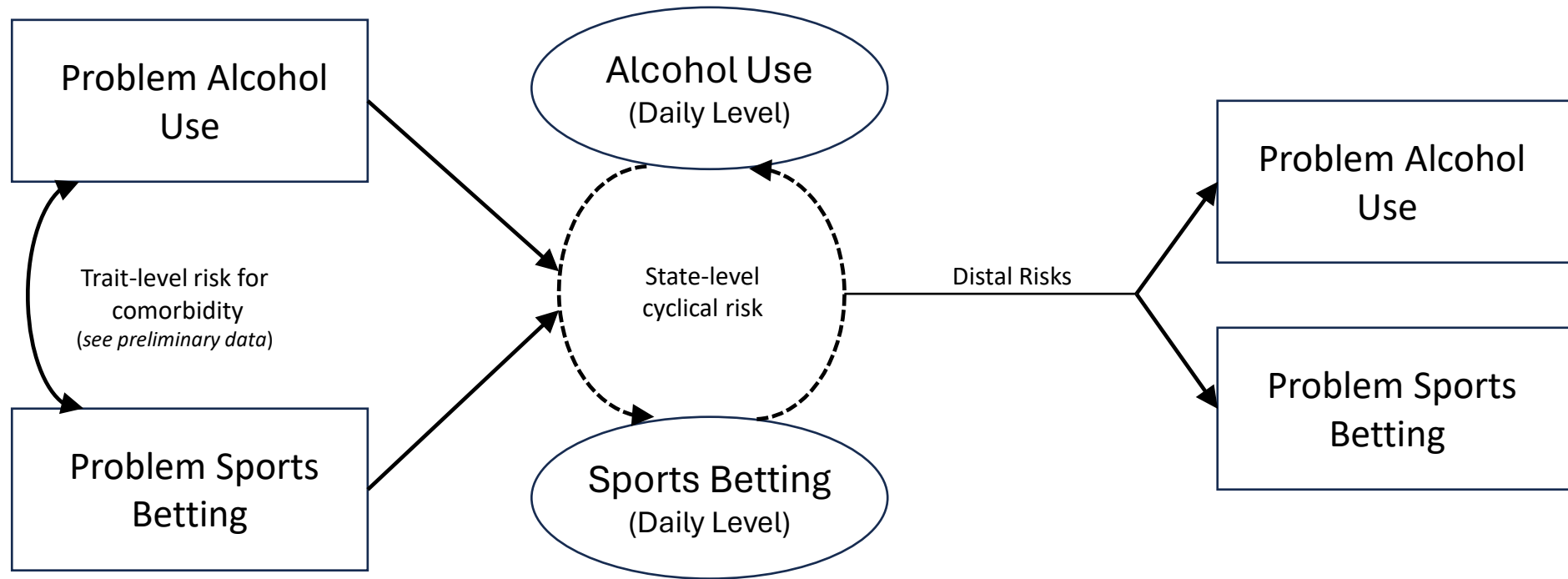
- Gambling *must* be recognized as a public health concern



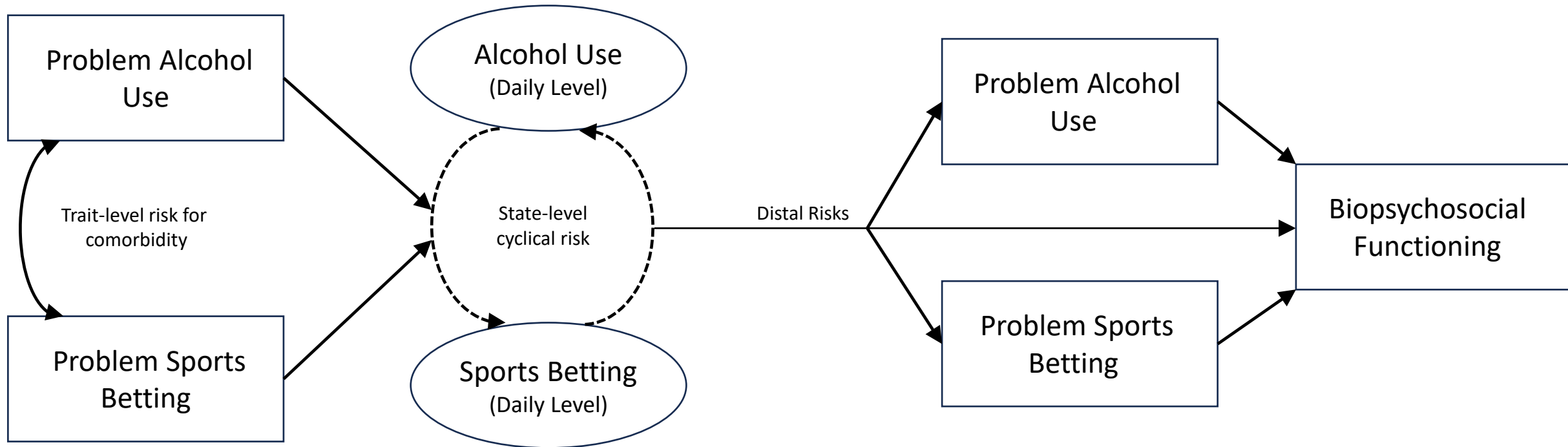
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R01 Proposal



R01 Proposal





Graups@uw.edu | Twitter @Graups33