

GAMBLING ON COLLEGE CAMPUSES

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Adolescents at risk for gambling addiction

ADOLESCENTS CAN BE AT HIGHER RISK FOR ADDICTION

- Brain still maturing during adolescent years
 - Especially pre-frontal cortex → regulates impulses, brain's decision-making center
 - Can lead to →
 - **Risky decision-making**
 - **Novelty and sensation seeking**
 - **Lack of impulse control**
- In addition, high influence of **peer pressure**

ADOLESCENTS CAN BE AT HIGHER RISK FOR ADDICTION

- **Gambling addiction**

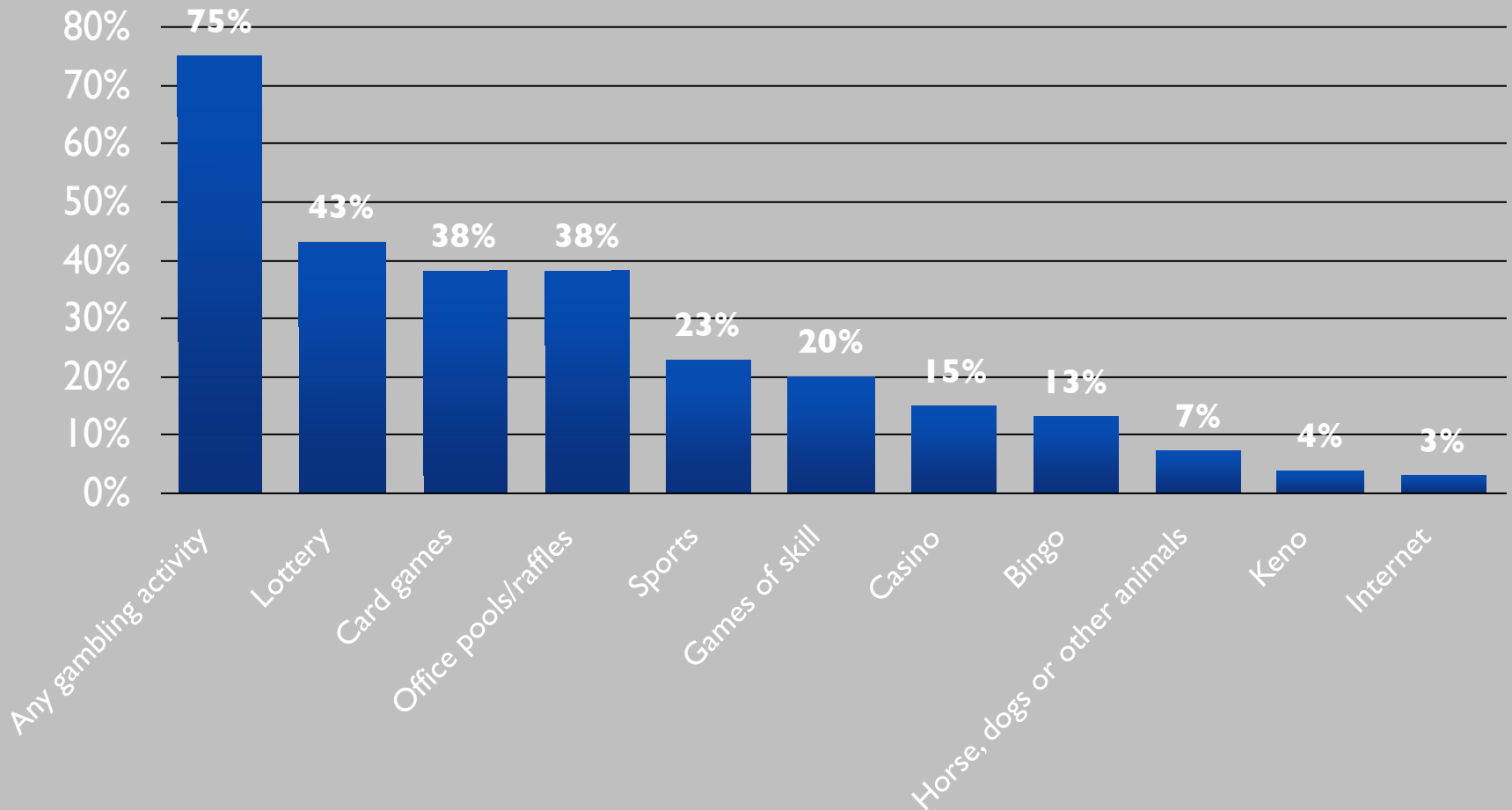
- **Emerging gambling opportunities** (daily fantasy sports, legalized sports betting)
- **Emerging methods to gamble** (mobile, online)
- **Less disposable income, easy access to credit cards**
 - can have a higher risk for gambling-related financial consequences

Prevalence of gambling and gambling activities

YOUTH/ADOLESCENT GAMBLING PREVALENCE

- Review of studies (N = 44) conducted since 2000 among those aged 10-24
 - **Most popular gambling activities overall**
 - Lotteries, scratch tickets, card games, slot machines
 - **Most popular activities for problem gamblers**
 - Card games, slot machines, sports betting

PAST YEAR GAMBLING AMONG COLLEGE STUDENTS



Barnes, G., Welte, J., Hoffman, J., & Tidwell, M-C. (2010). Comparisons of gambling and alcohol use among college students and noncollege young people in the United States. *Journal of American College Health*, 58(5), 443-452

According to the DSM-5(Diagnostic and Statistical Manual of Mental Disorders), what is the term for a clinical gambling addiction diagnosis?

Gambling Disorder

Problem Gambling

Pathological Gambling

Compulsive Gambling

Prevalence of problem gambling

DSM-5 GAMBLING DISORDER CRITERIA

1. Gambling **tolerance**
2. Gambling **withdrawal**
3. Unsuccessful efforts to control, cut back, or stop gambling
4. **Preoccupied** with gambling
5. Gambling when feeling distressed
6. “Chasing” losses
7. **Lying** about gambling
8. Jeopardizing or losing a relationship/opportunity due to gambling
9. Financial bailout due to gambling

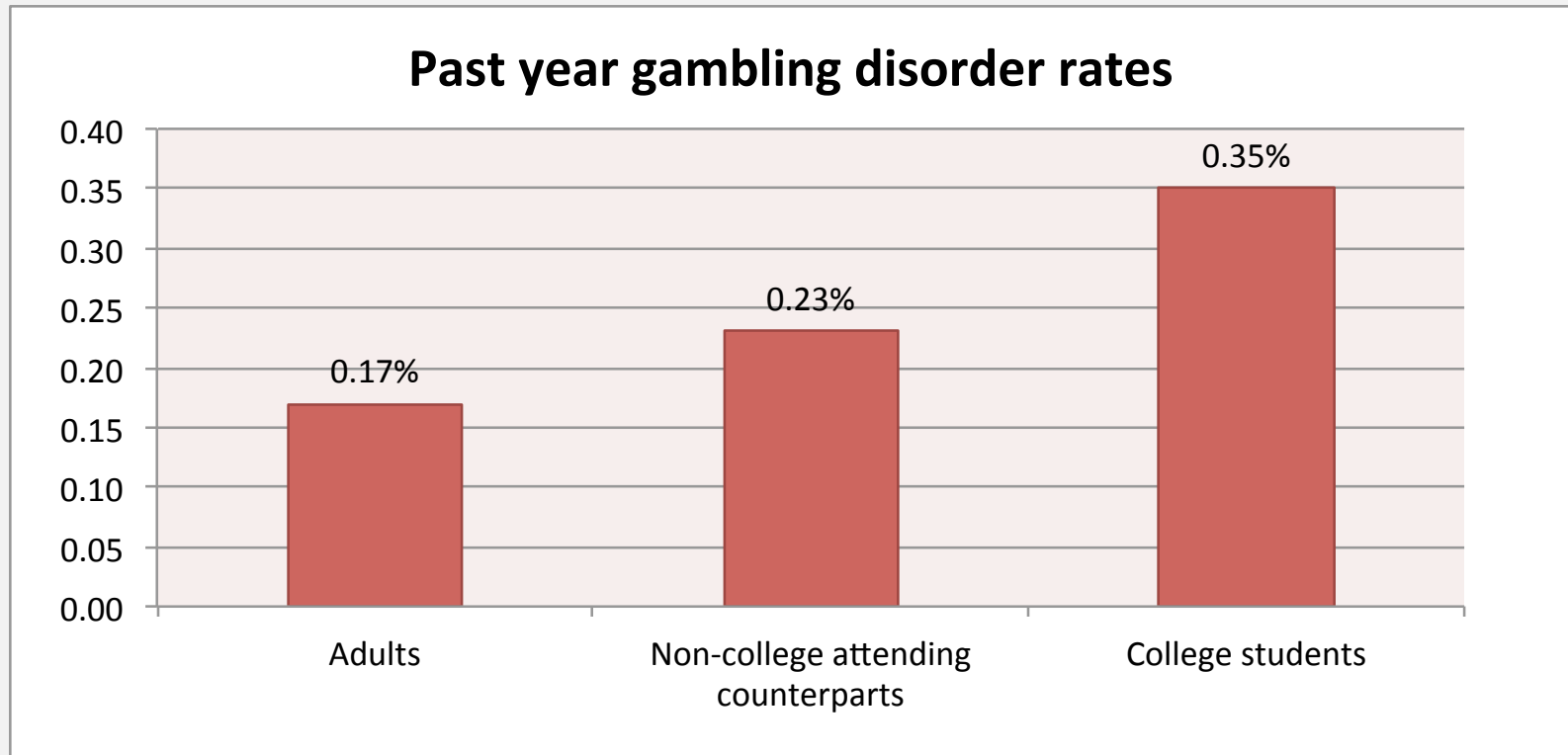
COLLEGE STUDENT PROBLEM GAMBLING PREVALENCE

- Review of college student studies (N = 72) using the SOGS between 1987 and 2016
 - **Gambling disorder: 6.1%**
 - **Sub-clinical gambling disorder (problem gambling): 10.2%**

COLLEGE STUDENT PROBLEM GAMBLING PREVALENCE

- Review of college student studies (N = 18) using the SOGS between 2005 and 2013
 - **Gambling disorder: 10.2%**
 - Rate higher than past syntheses
 - Shaffer et al. (1999): 5.1%
 - Blinn-Pike et al. (2007): 7.9%

COLLEGE STUDENT GAMBLING DISORDER COMPARISON

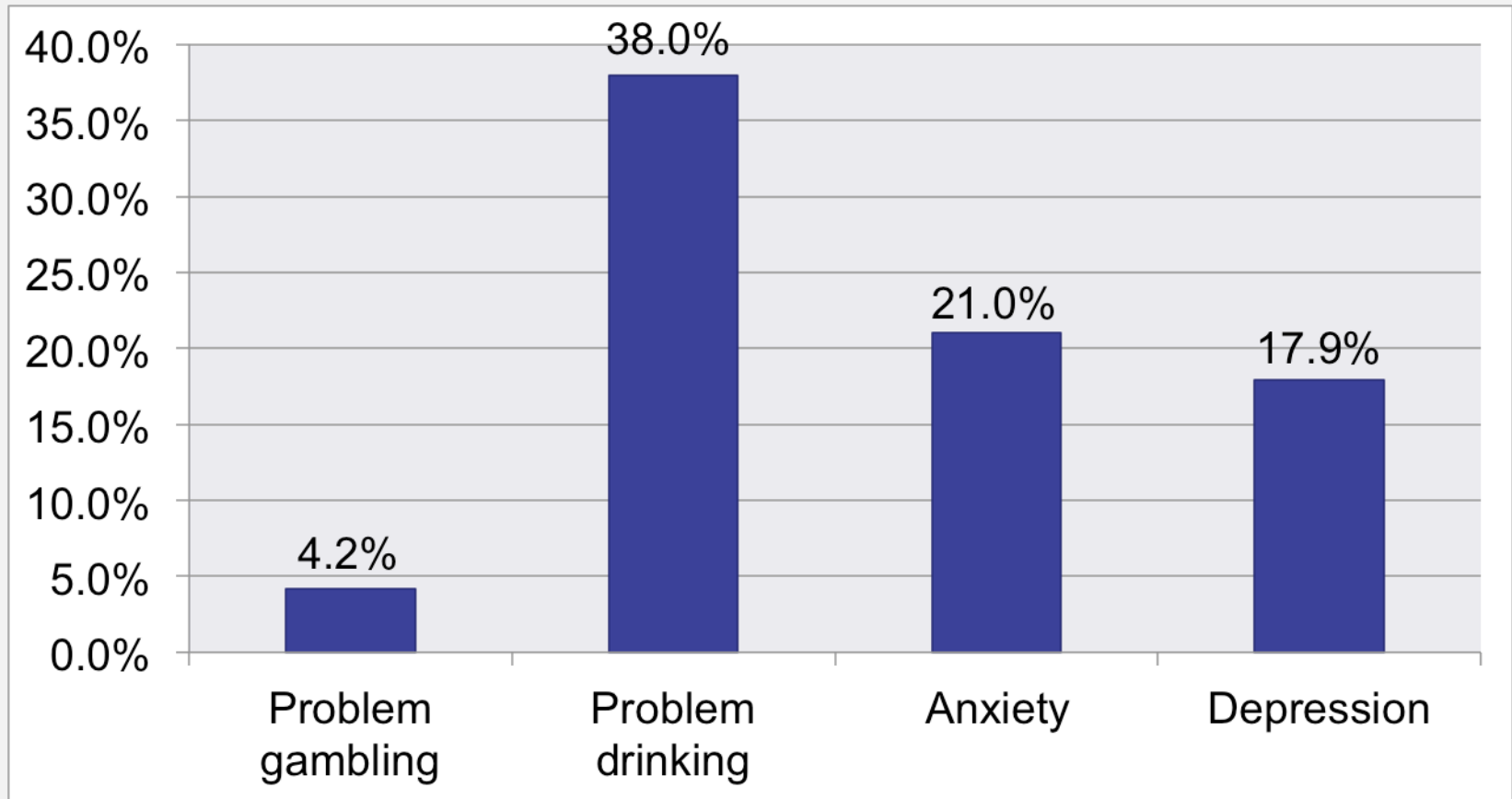


Blanco, C., Okuda, M., Wright, C., Hasin, D., Grant, B., Liu, S., & Olfson, M. (2008). Mental health of college students and their non-college attending peers. *Archives of General Psychiatry*, 65(12), 1429-1437.

Slutske, W. S. (2006). Natural recovery and treatment-seeking in pathological gambling: Results of two U.S. national surveys. *American Journal of Psychiatry*, 163(2), 297-302.

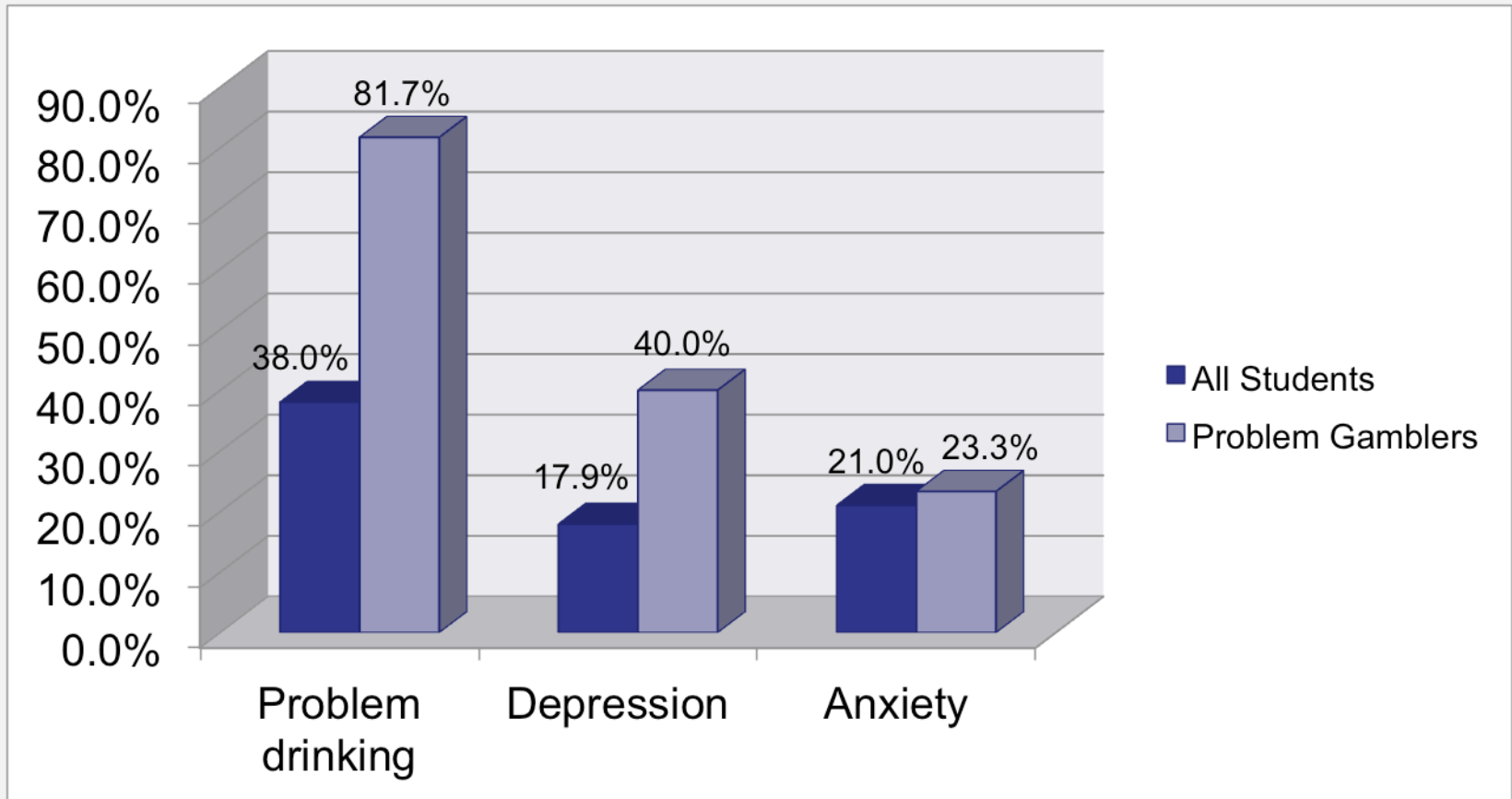
**Problem gambling:
co-morbidity, correlates,
and risk factors**

PREVALENCE OF PSYCHIATRIC DISORDERS AMONG A SAMPLE OF COLLEGE STUDENTS (N = 1,430)



Martin, R. J., Usdan, S., Cremeens, J., & Vail-Smith, K. (2014). Disordered gambling and co-morbidity of psychiatric disorders among college students: An examination of problem drinking, anxiety and depression *Journal of Gambling Studies*, 30, 321-333.

PROBLEM GAMBLING CO-MORBIDITY AMONG A SAMPLE OF COLLEGE STUDENTS (N = 1,430)



Martin, R. J., Usdan, S., Cremeens, J., & Vail-Smith, K. (2014). Disordered gambling and co-morbidity of psychiatric disorders among college students: An examination of problem drinking, anxiety and depression *Journal of Gambling Studies*, 30, 321-333.

EARLY RISK FACTORS FOR SUBSEQUENT GAMBLING PROBLEMS

- Synthesis of longitudinal studies (15 studies in 23 articles):
 - Examining **risk and protective factors** for subsequent gambling problems
 - Measured during childhood, adolescence, and young adulthood

EARLY RISK FACTORS FOR SUBSEQUENT GAMBLING PROBLEMS

- **Strong mean effect size**
 - Problem gambling severity
- **Small to medium mean effect size**
 - Number of gambling activities in past 12 months
 - Impulsivity
 - Uncontrolled temperament
 - Poor academic performance
 - Male gender

EARLY RISK FACTORS FOR SUBSEQUENT GAMBLING PROBLEMS

- **Small mean effect size**
 - Alcohol use frequency
 - Tobacco use
 - Cannabis use
 - Other illicit drug use
 - Antisocial behaviors/Peer antisocial behaviors
 - Sensation seeking
 - Depressive symptoms

EARLY PROTECTIVE FACTORS FOR SUBSEQUENT GAMBLING PROBLEMS

- **Protective factors**
 - Higher parental supervision
 - Experiencing social problems
 - Higher socio-economic status

STIMULANT USE AND GAMBLING AMONG COLLEGE STUDENTS

- A study among college students (N=4,640) found higher rates of problem gambling ***among participants who misused stimulants (11.1% vs. 3.8%)***

Gambling and fantasy sports

FANTASY SPORTS AND GAMBLING

- Participating in ***season-long fantasy sports leagues with a league entry fee*** was associated with with experiencing gambling-related problems among:
 - **College student samples**
 - **Adolescent samples**

Marchica, L., & Derevensky, J. (2016). Fantasy sports: A growing concern among college student athletes. *International Journal of Mental Health and Addiction*, 14, 635-645.

Marchica, L., Zhao, Y., Derevensky, J., & Ivoska, L. (2017). Understanding the relationship between sports-relevant gambling and being at-risk for a gambling problem among American adolescents. *Journal of Gambling Studies*, 33(437-448).

Martin, R. J., & Nelson, S. (2014). Fantasy sports, real money: Exploration of the relationship between fantasy sports participation and gambling-related problems. *Addictive Behaviors*, 30, 1377-1382.

Martin, R. J., Nelson, S., & Gallucci, A. (2016). Game on: Past year gambling, gambling-related problems, and fantasy sports gambling among college athletes and non-athletes. *Journal of Gambling Studies*, 32, 567-579.

FANTASY SPORTS AND GAMBLING

- Participating in **daily fantasy sports (DFS)** was associated with with experiencing gambling-related problems among:
 - A sample of college students (N=941)
 - A sample of 10-19-year-olds (N=6,818)

Marchica, L., Zhao, Y., Derevensky, J., & Ivoska, L. (2017). Understanding the relationship between sports-relevant gambling and being at-risk for a gambling problem among American adolescents. *Journal of Gambling Studies*, 33(437-448).

Martin, R. J., Nelson, S., Gallucci, A., & Lee, J. (2018). Daily and season-long fantasy sports participation and gambling-related problems among a sample of college students at three universities. *International Gambling Studies*, 18(3), 395-407.

FANTASY SPORTS AND GAMBLING

- Fantasy sports studies among adolescents/college students limited by the use of community samples
- Future research using more representative samples will increase generalizability

College athlete gambling

COLLEGE ATHLETE GAMBLING

- Tables taken from the NCAA Study on Collegiate Wagering, available at:
<http://www.ncaa.org/about/resources/research/ncaa-national-study-collegiate-wagering>

PERCENTAGE OF STUDENT-ATHLETES GAMBLING FOR MONEY DURING THE PREVIOUS 12 MONTHS

		2008 Study	2012 Study	2016 Study
Men	Overall	66%	57%	55%
	Div. I	58%	50%	48%
	Div. II	67%	56%	54%
	Div. III	73%	65%	61%
Women	Overall	39%	39%	38%
	Div. I	31%	30%	32%
	Div. II	40%	41%	35%
	Div. III	45%	46%	44%

GAMBLING SEVERITY (DSM CLASSIFICATION) AMONG NCAA ATHLETES

Men	2004 Study	2008 Study	2012 Study	2016 Study
Non-gambler	29.3%	33.7%	42.3%	45.3%
Social gambler	66.7%	62.5%	55.8%	52.8%
At-risk gambler	2.9%	1.8%	1.2%	1.1%
Probable pathological gambler	1.1%	2.0%	0.7%	0.7%

Women	2004 Study	2008 Study	2012 Study	2016 Study
Non-gambler	51.1%	61.4%	61.3%	62.4%
Social gambler	48.6%	38.2%	38.6%	37.5%
At-risk gambler	0.3%	0.2%	< 0.1%	< 0.1%
Probable pathological gambler	< 0.1%	0.2%	< 0.1%	< 0.1%

Among male athletes, which sport's athletes have the highest rates of gambling in a one month period?

Track **A**

Football **B**

Soccer **C**

Golf **D**

Basketball **E**

PERCENTAGE OF NCAA MEN REPORTING THAT THEY **WAGER** **ON SPORTS** AT LEAST MONTHLY

Men's Sports	2004 Study	2008 Study	2012 Study	2016 Study
Baseball	12.3%	12.7%	9.5%	10.3%
Basketball	9.9%	10.0%	8.4%	8.2%
Football	8.6%	9.0%	8.3%	10.6%
Golf	14.2%	19.6%	20.2%	18.2%
Ice Hockey	12.1%	7.6%	8.9%	14.2%
Lacrosse	13.9%	10.1%	5.6%	10.6%
Soccer	10.9%	10.6%	9.7%	6.7%
Swimming	5.7%	4.3%	3.5%	3.7%
Tennis	8.8%	8.4%	7.8%	5.8%
Track / Cross Country	4.9%	5.4%	4.4%	4.1%
Wrestling	12.4%	6.2%	6.0%	5.0%

College and university gambling policies

COLLEGE GAMBLING POLICIES

- 2003 study
 - Out of 119 universities, **26 (22%)** had a documented gambling policy
- Revisited 2017 study
 - Out of 117 universities, **82 (70%)** had a documented gambling policy

Shaffer, H. J., Donato, A. N., LaBrie, R. A., Kidman, R. C., & LaPlante, D. A. (2005). The epidemiology of college alcohol and gambling policies. *Harm Reduction Journal*, 2(1).

Kleschinsky, J. (2018). Reassessing college and university gambling policies: How have schools changed from 2003 to 2017 (Dissertation). Boston University, Retrieved from <https://hdl.handle.net/2144/30699>

COLLEGE GAMBLING POLICIES

- **Recommendations of the Task Force on College Gambling Policies**
 1. **Campus-wide committee** to develop and monitor a comprehensive policy on gambling
 2. College gambling policies consistent with applicable local, state, and federal laws
 3. Consistency with prohibitions and restrictions on gambling and alcohol use **at special events**
 4. **Campus-community collaborations** that focus on reducing problems with student drinking and gambling
 5. Encourage adjustments (**leniency**) in disciplinary actions applied to violators of gambling rules if the student seeks assistance from health or counseling services

COLLEGE GAMBLING POLICIES

6. Make **reasonable accommodations** for students focused on recovery from a problem with gambling or alcohol
7. Measure student attitudes, behaviors, and problems with gambling through **campus surveys** or by incorporating such measures into existing campus health-related surveys
8. Promote **campus-wide awareness** of gambling disorder as a mental health disorder that has a high rate of comorbidity
9. Employ evidence-based strategies to identify (**e.g., screening**) and help students with gambling and alcohol problems
10. **Strengthen the capacity of counseling services to identify and treat gambling disorders**

Gambling education and interventions

YOUTH GAMBLING INTERVENTIONS

- Systematic review of school-based gambling education programs (19 studies)

YOUTH GAMBLING INTERVENTIONS

- Recommendations
 - Focus on prevention of gambling-related problems
 - Ground in behavioral theory (e.g., Theory of Planned Behavior) instead of trial and error
 - Teach mathematical principles concerning long-term unprofitability of gambling
 - Randomness and expected value

YOUTH GAMBLING INTERVENTIONS

- Recommendations
 - Programs should be implemented as early as possible (age 10 and older) to prevent gambling misconceptions
 - Deliver in a way that is relevant to youths (e.g., multimedia programs)

COLLEGE STUDENT PROBLEM GAMBLING INTERVENTION

- Study among at-risk college student problem gamblers
 - Computer-delivered brief intervention with personalized normative feedback
 - **Correct misperceptions, behavior atypical**

Neighbors, C., Rodriguez, L., Rinker, D., Gonzales, R., Agana, M., Tackett, J., & Foster, D. (2015). Efficacy of personalized normative feedback as a brief intervention for college student gambling: A randomized control trial. *Journal of Consulting and Clinical Psychology*, 83(3), 500-511.

PROBLEM GAMBLING INTERVENTION: BRIEF SCREENS

Brief Biosocial Gambling Screen

(BBGS) *A "yes" answer to any of the questions means the person is at risk for developing a gambling problem.*

- | | | |
|--|--------------------------|--------------------------|
| 1. During the past 12 months, have you become restless, irritable or anxious when trying to stop/cut down on gambling? | YES | NO |
| | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. During the past 12 months, have you tried to keep your family or friends from knowing how much you gambled? | YES | NO |
| | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. During the past 12 months did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends or welfare? | YES | NO |
| | <input type="checkbox"/> | <input type="checkbox"/> |



NATIONAL CENTER FOR RESPONSIBLE GAMING

www.ncrg.org

www.divisiononaddiction.org

Gebauer, L., LaBrie, R., & Shaffer, H. (2010). Optimizing DSM-IV classification accuracy: A brief bio-social screen for gambling disorders among the general household population. *Canadian Journal of Psychiatry*, 55(2), 82-90.

Legalized sports gambling and potential concerns

POTENTIAL CONCERNS

- Increased legalized sports gambling
 - **Mobile betting**
 - **Game betting vs. live (or in-play) betting**

What are the items in video games that contain randomized contents of various values that can be purchased with "real" money?

Coin Boxes

Mystery Boxes

Slot Boxes

Loot Boxes

POTENTIAL CONCERNS

- **Loot boxes:** Items in video games that contain randomized contents of various values that can be purchased with “real” money
- Researchers have found that gamers who indicate gambling problems spend more on loot boxes than players without gambling problems
 - Possible gateway to future gambling problems?

Zendle, D., & Cairns, P. (2018). Video game loot boxes are linked to problem gambling: Results of a large-scale survey. *PLoS ONE*, 13(11).

Zendle, D., & Cairns, P. (2019). Loot boxes are again linked to problem gambling: Results of a replication study. *PLoS ONE*, 14(3).

POTENTIAL CONCERNS

- **Simulated gambling games:** A digitally simulated interactive activity that does not directly involve monetary gain but is structurally identical to the standard format of a gambling activity due to its wagering features and chance-determined outcomes of play
 - Researchers have found that simulated gambling games were a precursor to subsequent online gambling for some individuals
 - Possible gateway to future gambling problems?

Armstrong, T., Rockloff, M., Browne, M., & Li, E. (2018). An exploration of how simulated gambling games may promote gambling with money. *Journal of Gambling Studies*, 34, 1165-1184.

King, D., Delfabbro, P., Kaptsis, D., & Zwaans, T. (2014). Adolescent simulated gambling activity via digital and social media: An emerging problem. *Computers in Human Behavior*, 31, 305-313.

POTENTIAL CONCERNS

- **Gaming addiction:** Studies have generally **not supported** gaming addiction as a precursor to subsequent gambling addiction
- **Gaming defined by:** (1) interactivity, (2) skill-based play, and (3) contextual indicators of progression and success
- **Gambling defined by:** (1) betting and wagering mechanisms, (2) predominately chance-determined outcomes, and (3) monetization features that involve risk and payout to the player

Sanders, J., & Williams, R. (2019). The relationship between video gaming, gambling, and problematic levels of video gaming and gambling. *Journal of Gambling Studies*, 35, 559-569.

King, D., Gainsbury, S., Delfabbro, P., Hing, N., & Abarbanel, B. (2015). Distinguishing between gaming and gambling activities in addiction research. *Journal of Behavioral Addictions*, 4(4), 215-220.

LEGALIZED SPORTS GAMBLING: A NEW GAMBLING OPPORTUNITY

- **Exposure and adaptation**
 - Exposure: When a new gambling opportunity is introduced to a population → **expect and prepare for an initial increase** in participation and an associated increase in gambling-related problems
 - Adaptation: Over time, populations typically adapt and the rates of problems revert back to those prior to the new opportunity

Conclusion & Future Directions

CONCLUSION/FUTURE DIRECTIONS

- Youths/adolescents, and especially college students, are at risk for gambling problems
- There are numerous activities and co-morbid behaviors associated with gambling problems
- More research should be conducted on emerging gambling opportunities (legal sports gambling, daily fantasy sports) in the youth/adolescent/college student population