

Adolescent Problem Gambling Assessment and Trends in Adolescent Gambling 1992 to 2016

Gambling Addiction Conference, June 27, University of Fribourg, Switzerland

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Dr. Joan-Carles Suris, Adolescent Health Program volleyball career at the University of Minnesota Medical School



Dr. Joan-Carles Suris showing his better side



Adolescent Problem Gambling Assessment

- Two commonly used older measures:
 - South Oaks Gambling Screen-Revised for Adolescents (SOGS-RA) (Winters, Stinchfield & Fulkerson, 1990)
 - DSM-IV-Juvenile (DSM-IV-J) (Fisher, 1992) and DSM-IV-Multiple Response-Juvenile (DSM-IV-MR-J) (Fisher, 2000)
- Two new measures:
 - Canadian Adolescent Gambling Inventory (CAGI) (Tremblay, Wiebe, Stinchfield & Wynne, 2010)
 - Brief Adolescent Gambling Screen (BAGS) (Stinchfield, Wynne, Wiebe & Tremblay, 2017)

Weaknesses of Older Instruments

- Adult measures (SOGS and DSM-IV) were modified for youth but were not originally developed for youth
- Some adult symptoms/items fit youth (e.g., preoccupation or feeling bad) while others do not (e.g., second mortgage on home)
- Youth problem gambling is not a milder form of adult problem gambling with fewer symptoms as existing measures would have us believe (e.g., lowering the threshold for problem gambling) and this has led to mistaken comparisons of adult and youth rates of PG
- DSM-based measures do not include symptoms of low to moderate gambling problem severity
- Lack of rigorous psychometric evaluation

Strengths of Existing Instruments

- SOGS and DSM-based measures have shown evidence of reliability, validity and classification accuracy, however, this evidence is for adult samples
- CAGI was developed for youth from the outset
- CAGI has age-appropriate items including items related to friends, school, and parents
- CAGI includes items designed to measure low and moderate problem gambling severity
- CAGI cut score is based on comparison to DSM-based measures as well as self-report and clinician ratings of gambling problem severity
- Initial estimates of psychometric properties are favorable

Canadian Adolescent Gambling Inventory (CAGI)

- Total of 44 items
- Past three months timeframe
- Gambling frequency on 19 games/activities (six point response options) including one fake game (Blotzito) to measure validity of self-report and response distortion (faking bad)
- Time spent on each game in a typical week (hours and minutes)
- Losses in dollar amount
- Gambling behavior/problems/consequences (24 items)
 - Psychological consequences (6 items)
 - Social consequences (5 items)
 - Financial consequences (6 items)
 - Loss of control (4 items)
 - Gambling problem severity (9 items)

Brief Adolescent Gambling Screen (BAGS)

- Although brief screens have limitations, there are some settings and purposes for which only a brief screen is acceptable (surveys; clinical settings)
- BAGS was developed from a secondary analysis of CAGI data
- Three items from the CAGI Gambling Problem Severity Subscale were selected from a Discriminant Function Analysis as the best predictors of Gambling Disorder

Brief Adolescent Gambling Screen (BAGS)

- 1) How often have you skipped hanging out with friends who do not gamble/bet to hang out with friends who do gamble/bet?
- 2) How often have you felt that you might have a problem with gambling/betting?
- 3) How often have you hidden your gambling/betting from your parents, other family members or teachers?
- Response options: Not in the past 12 months=0, Sometimes=1, Many times=2, All of the time=3
- Sum three items for a score range 0-9
- Score of four or higher indicates Problem Gambling

Determining best BAGS cut score

Table 2

Probability of DSM-5 Gambling Disorder (GD) for each BAGS Score from 0-9

BAGS Score	DSM-5 GD Status		Probability of Gambling Disorder
	GD	No GD	
0	0	57	0/57=0%
1	0	7	0/7=0%
2	2	7	2/9=22%
3	1	8	1/9=11%
4	5	1	5/6=83%
5	7	1	7/8=88%
6	4	0	4/4=100%
7	4	0	4/4=100%
8	1	0	1/1=100%
9	0	0	0/0=0%

Crosstabulation of the BAGS and DSM-5 Gambling Disorder: cut score of four minimized classification errors and balanced false positives and false negatives

Table 2

Crosstabulation of the BAGS and DSM-5 Gambling Disorder

BAGS Cut score	DSM-5 GD		Row Totals
	Gambling Disorder	No Gambling Disorder	
4+	21	2	23
<4	3	79	82
Column Totals	24	81	105

Base Rate = $24/105 = .23$

Hit Rate = $(21+79)/105 = .95$

Sensitivity = $21/24 = .88$

Specificity = $79/81 = .98$

False Positive Rate = $2/81 = .02$

False Negative Rate = $3/24 = .12$

What questions can gambling items answer in a survey?

- What is the prevalence rate of problem gambling?
- How many youth are gambling?
- How many youth are gambling frequently?
- What games do youth play?
- Are there differences between genders, ages, races/ethnicities, etc.?
- Does gambling emerge before or after other addictive behaviors tobacco use and alcohol use?
- What factors put youth at risk for problem gambling?
- What factors protect youth from problem gambling?

Trends in youth gambling from 1992 to 2016

- Minnesota Student Survey, a large omnibus statewide school-based census-like survey originally designed to measure alcohol and drug use, is administered to public school students in Minnesota every three years starting in 1989
- Content domains include demographics, school problems, school violence/safety, activities, health, mental health, nutrition, family relationships, emotional distress, suicidal behavior, antisocial behaviors, family alcohol/drug problems, physical/sexual abuse, gambling behavior, communication with parents, alcohol/drug and tobacco use behaviors, sources of alcohol/drugs/tobacco, substance use diagnostic criteria, sexual behavior, dating violence, and pregnancy.
- Compulsive Gambling Program of the Minnesota Department of Human Services wanted to include a measure of problem gambling (but limited to a brief screen)

2016 Minnesota Student Survey

Four Gambling Frequency Items

- The following questions are about gambling. By gambling we mean when you bet money or something else of value so that you can win or gain money or something else.
- During the last 12 months, how often have you done the following gambling activities?
 - 1. Played cards, bet on sports teams or games of personal skills like video gaming, pool, golf or bowling (what is wrong with this question?)
 - 2. Bought lottery tickets or scratch offs
 - 3. Gambled in a casino
 - 4. Gambled for money online
- Daily, Two to Six times a week, About once a week, About once a month, Less than once a month, Not at all

Prevalence Rate from 2016 MSS

- Sample: 73,883 MN 9th and 11th grade students in 2016
- Students who did not participate in any gambling in the past year were instructed to skip the three problem gambling items (BAGS)
- Non-gamblers = $51,611/73,883 = 69.9\%$
- Non-problem gamblers (gambled but BAGS score of less than 4) = $21,858/73,883 = 29.6\%$
- Problem gamblers (BAGS score of 4 or more) = $414/73,883 = 0.6\%$
- Among those 22,272 students who gambled in the past year
 - Non-problem gamblers (gambled and BAGS score of less than 4) = $21,858/22,272 = 98.1\%$
 - Problem gamblers (BAGS score of 4 or more) = $414/22,272 = 1.9\%$

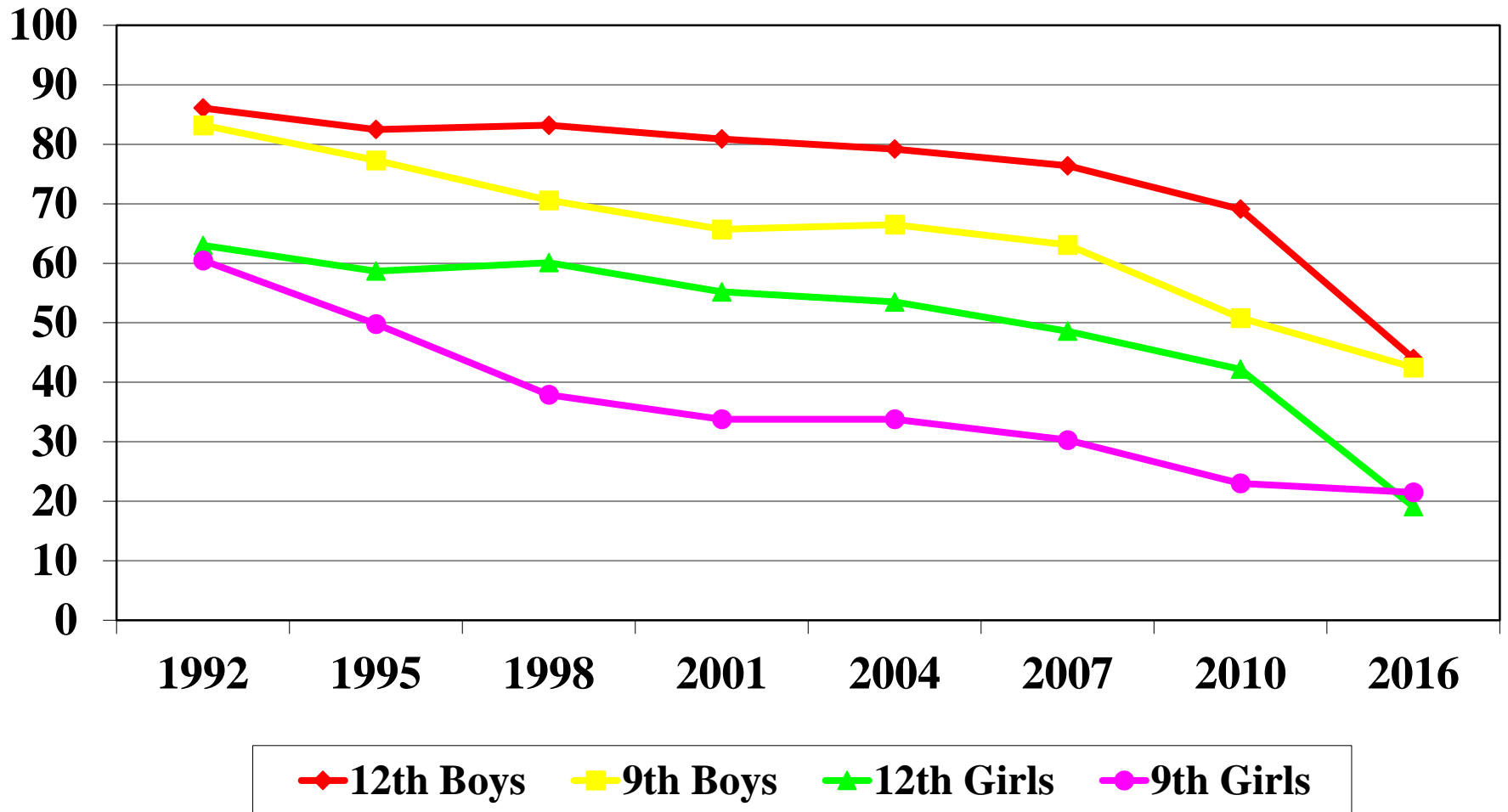
What is the Prevalence of Problem Gambling?



Are More Youth Gambling?

Gambling at all, on any Game, by Gender and Grade

(note: 2016 is 11th grade students)



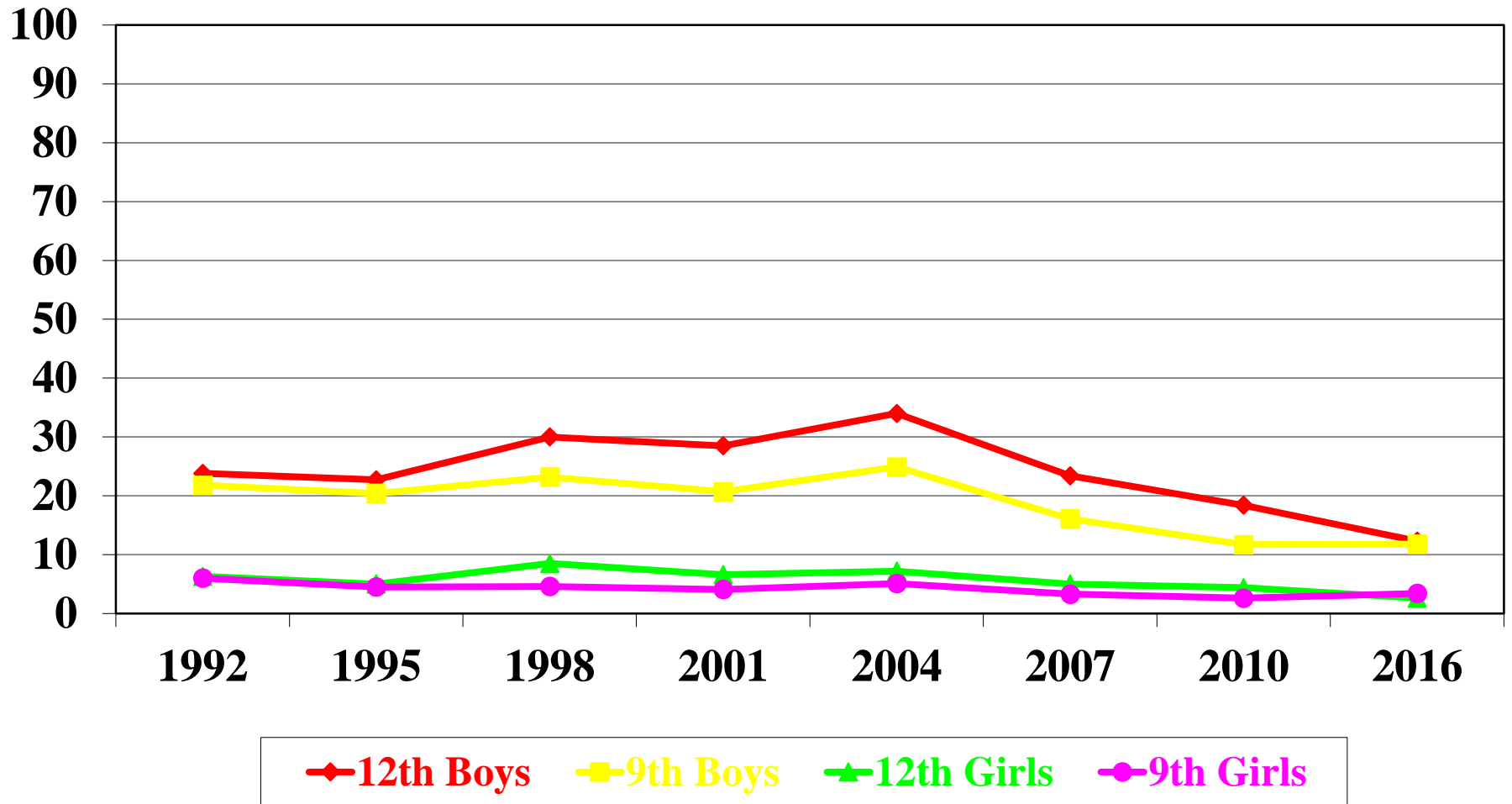
Are More Youth Gambling?

- No, there are fewer youth gambling in 2016 than in 1992
- The rate of gambling in 2016 was 42% of 9th grade boys compared to 83% in 1992; and 21% of 9th grade girls in 2016 compared to 60% in 1992
- There has been a significant decline in the percentage of youth who have gambled in the past year
- In a review of youth gambling studies from around the world, Volberg, Gupta, Griffiths, Olason, and Delfabbro (2010), concluded that the literature is mixed, but most studies indicate either stability or decreases
- Unpublished reports from the US National Annenberg Survey of Youth have also found declines in gambling starting in 2006.

Are more youth gambling frequently?

Gambling weekly or more often on any game by gender and grade

(note: 2016 is 11th grade students)



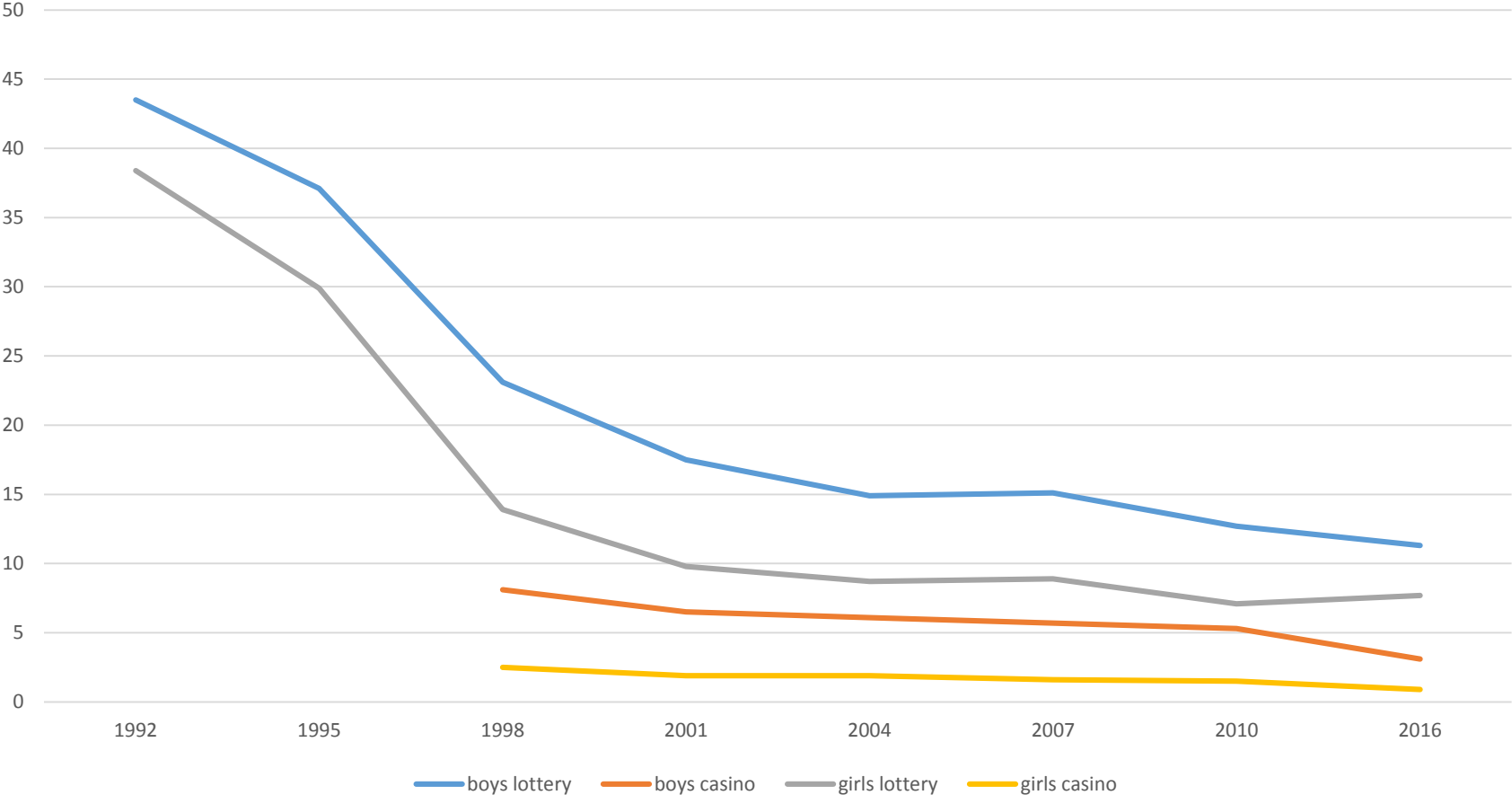
Are More Youth Gambling Frequently?

- No, there are fewer youth gambling frequently in 2016 than in 1992
- There was a peak in frequent gambling in 2004 for boys followed by a steep decline
- The rate of frequent gamblers in 2016 was 12% of 11th grade boys and 3% of 11th grade girls, and this is a decline from previous years, but this is a large enough number to be concerned about

Underage Gambling

- Underage gambling is defined as playing a legalized or commercial form of gambling (lottery, casinos, and online gambling) by youth under the legal age, which in Minnesota is 18 years of age for the state lottery and tribal casinos
- Online gambling legal age may vary by web site, but is assumed to be 18 for this comparison

Percent of Boys and Girls Underage Play of Lottery and Casino 1992 to 2016

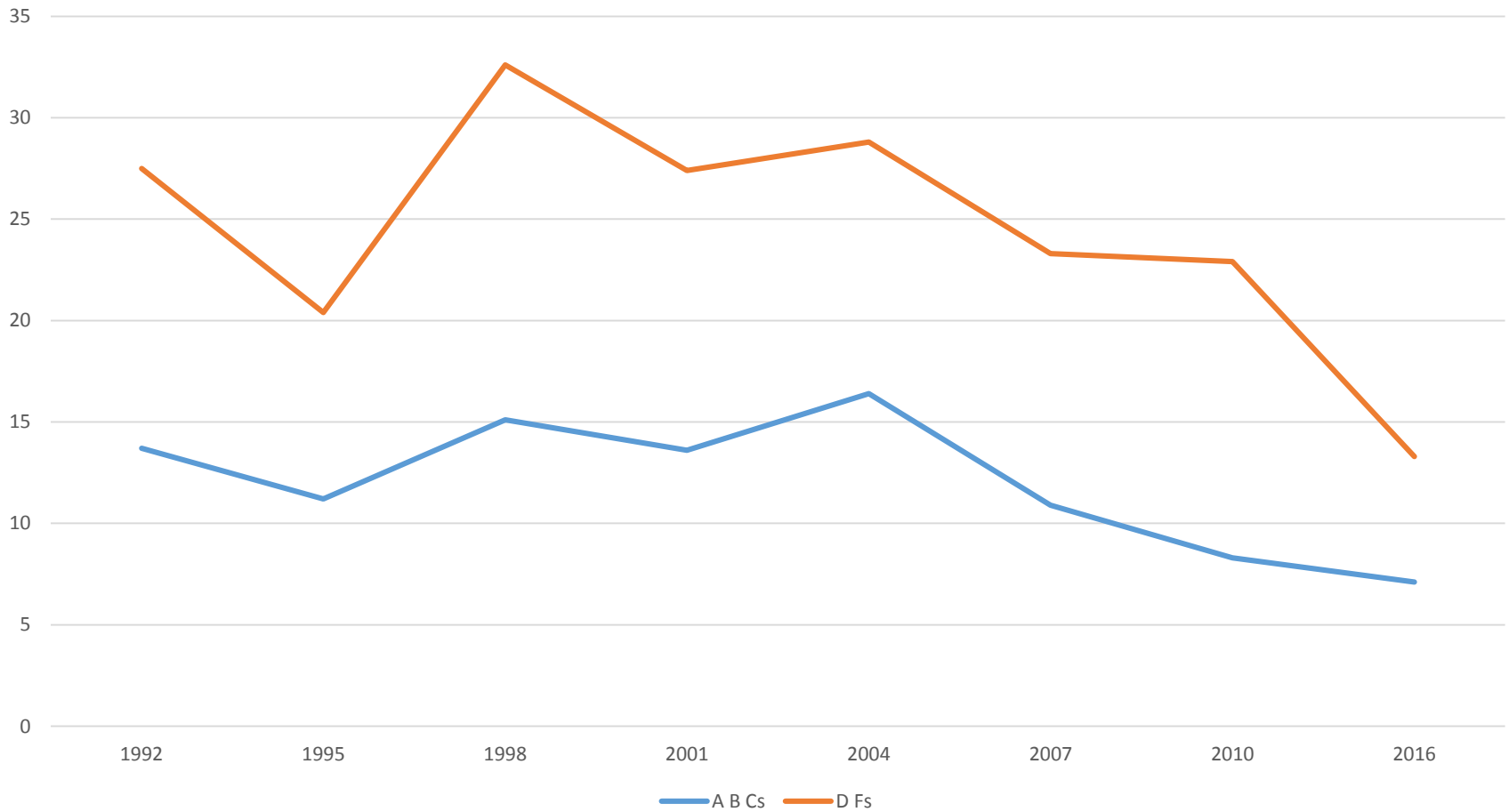


Underage Gambling

- There was a relatively high rate of underage lottery play by boys (43.5%) and girls (38.4%) starting in 1992, however, there was a steep decline from 1992 to 1998 and leveling off and fairly consistent rates from 2001 to 2016
- Underage casino gambling rates have been fairly consistent since it was added to the MSS in 1998 showing modest declines from 1998 to 2016 with rates around 3% for boys and 1% for girls in 2016
- Underage online gambling rates have also been fairly consistent since it was added to the MSS in 2007 and also show modest declines with rates around 6% for boys and 1% for girls in 2016

Is Academic Achievement Related to Gambling?

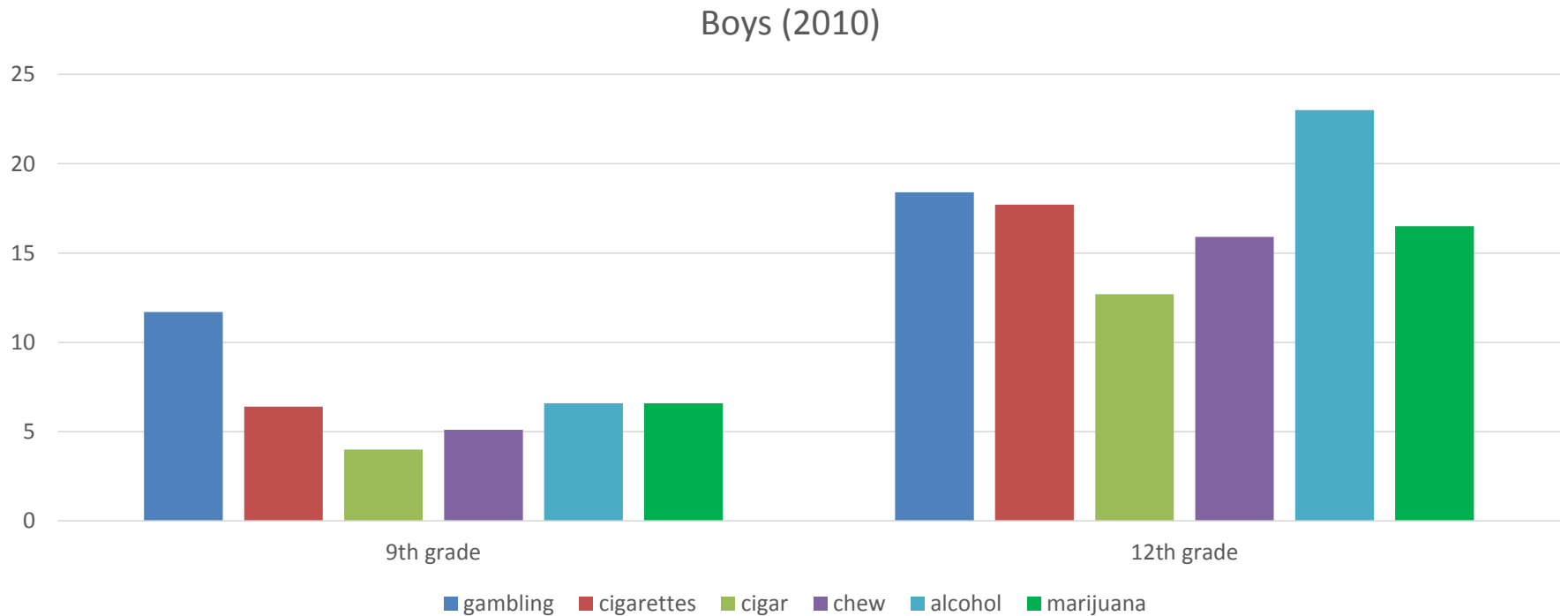
Percent of Frequent Gambling by Academic Achievement 1992 to 2016



Is Academic Achievement Related to Gambling?

- Yes, students with grades of D and F have higher rates of frequent gambling than students with grades of A, B, and C
- Both groups show consistent declines from 2004 to 2016

Does gambling precede or follow other risky behaviors for boys?



- Frequent gambling is more prevalent among 9th grade boys, than tobacco, alcohol or marijuana use
- As boys age, more of them take up tobacco and alcohol use such that by the time they are in 12th grade rates of tobacco and alcohol use are equal to or greater than rates of gambling

Summary

- Trends in gambling participation has shown a gradual and consistent decline from 1992 to 2016 for both boys (84% in 1992 to 43% in 2016) and girls (62% in 1992 to 20% in 2016)
- Trends in frequent gambling have shown more modest rates and declines for both boys (from 23% in 1992 to 12% in 2016) and girls (from 6% in 1992 to 3% in 2016)
- Trends in underage gambling on the lottery has also shown declines over time for both boys (from 43% in 1992 to 11% in 2016) and girls (38% in 1992 to 8% in 2016)
- The rate of Problem Gambling among all students was 414/73,883 or 0.6% (about one half of one percent)
- There is a small segment of the youth population that appears to gamble frequently and these youth may need prevention and intervention services

Research Questions

- Why are fewer youth gambling?
- What variables may serve as risk and protective factors that will have implications for public awareness and prevention?

Future Research Directions

- Cross-validation studies of cut score with larger samples in other settings and populations
- Consider using different cut scores for different purposes and settings (e.g., lower cut scores for clinical settings to avoid the more serious false negative errors versus minimizing classification errors by balancing false negative/positive errors in school or community samples)
- Consider using item weights if a large representative sample can be obtained
- Develop norms by gender and age
- Classification accuracy research with other “gold standards”
- Cross-cultural research (the CAGI and BAGS are available in English, French, Spanish and Croatian)
- Develop norms for adolescent rates of gambling frequency (what is “normal”?; what is “abnormal”?)

For more information

- You can download copies of the French and English versions of the CAGI and reports from Canadian Consortium for Gambling Research:
- <http://www.ccgr.ca/en/projects/canadian-adolescent-gambling-inventory--cagi-.aspx>
- Contact:
- Dr. Randy Stinchfield: stinc001@umn.edu

For published articles

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Visit: <http://www.northstarproblemgambling.org/news-publications/>

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For copies of MSS reports

Contact Dr. Randy Stinchfield: stinc001@umn.edu

Visit: <http://www.northstarproblemgambling.org/news-publications/>

Reports:

Stinchfield, R. (2016). Development and Psychometric Evaluation of the Brief Adolescent Gambling Screen (BAGS).

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