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Gender differences in mental health characteristics and gambling among African-American adolescent gamblers

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Abstract

This study explores gender differences in lifetime and recent substance use/internalizing behavior, childhood externalizing behavior and gambling preferences among African-American youth gamblers. Data are from a prospective study of a community sample of 452 urban African-American youth that began at entry into first grade and was followed for ten years. Gambling was associated with high teacher ratings of childhood externalizing behaviors among males, and with high parent ratings of childhood impulsivity and hyperactivity among both genders. Internalizing behavior was associated with female gambling. No male-female differences in substance use/lifetime conduct disorder among gamblers were noted. Gambling preferences/frequency differed across genders.

Keywords

gambling; African-American urban youth; gender differences; externalizing behaviors

1. Introduction

Gambling activities have become extremely popular in the U.S. due to the legalization of gambling in almost all states.¹ Though it is illegal for adolescents to gamble, adolescent gambling has been steadily increasing.² A meta-analysis of gambling studies estimated that 77% to 83% of adolescents had gambled in the past-year.³ A number of adolescent gambling studies use an instrument that was derived from adult studies, the South Oaks Gambling Screen-revised for adolescents (SOGS-RA).⁴ A high score (4 or more) on the SOGS-RA indicates problem gambling and a lower score (2-3) is indicative of 'at-risk' gambling behavior.⁴ Problem gamblers experience a wide range of gambling-related problems such as legal troubles, family problems, poor academic performance, school dropout, and anxiety and depression.⁵ At-risk adolescent gamblers experience gambling-related consequences that often negatively impact their lives.⁶⁻⁸ Rates of problem gambling (3.5% to 8%) and of at-risk gambling (10%-15%) among adolescents are higher than rates found among adults in the general population.⁹ African-Americans have been found to have high rates of gambling problems,¹⁰ yet little is known about gambling habits and characteristics associated with gambling in urban, predominantly African-American youth, who typically live in more disadvantaged environments and are more adversely affected by the negative consequences of illegal activities. One important environmental factor that has been associated with gambling and problem/pathological gambling is living in a disadvantaged neighborhood.¹¹ The National

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Gambling Impact Study Commission has shown that lottery outlets are more common in poor neighborhoods¹. Welte and colleagues found that respondents who lived in disadvantaged neighborhoods had much higher rates of problem and pathological gambling as compared to those who did not live in disadvantaged neighborhoods.¹¹ Neighborhood deterioration and disadvantage has been linked with other problem behaviors such as crime and substance use.¹¹ A recent study of a small sample (n=188) of urban adolescents in Memphis (87% African-American, 46% male, mean age=15.9 years), estimated that nearly a quarter were at-risk gamblers and 13% were problem gamblers.⁸

Gambling and gambling problems are usually more common among adolescent males; the male-female ratio of problem gambling in adolescence varies from 3:1 to 5:1.¹²⁻¹³ In a sample of 534 adolescents Desai and colleagues¹² reported that female past-year gamblers included a lower proportion of African-American respondents as compared with female past-year non-gamblers, and that among males there were more African-Americans among past-year gamblers as compared to past-year non-gamblers. However, African-American youth comprised only 12.5% (n=60) of the study's sample, and only half of them (n= 31) of them were past-year gamblers, so no further comparisons were made across race/ethnicities.¹² Gender differences in gambling behavior have been noted among adolescents and game preference seems to change with age.^{12,14-15} Boys prefer strategic forms of gambling (e.g., card games, betting on sports, and gambling machines) while girls preferred non-strategic forms of gambling (e.g., lottery and bingo).^{11,14} However, to date, no study has explored gender differences in gambling activities among an African-American adolescent sample. We believe that the same gender differences found in mainly Caucasian samples of adolescent gamblers will be found among African-American gamblers.

Gender differences have also been identified in the mental health of youth who participate in gambling.^{12,16} Desai et al. have shown that lifetime dysphoria/depression is associated with past-year gambling among adolescent girls.¹² Externalizing behaviors, such as conduct disorder and impulsivity have been associated with gambling and gambling problems in a community sample of Caucasian male adolescents.¹⁷ Impulsivity and childhood hyperactivity have also been associated with substance use in adolescence.¹⁸⁻¹⁹ Childhood aggressive behaviors have been largely associated with later substance use and delinquent behavior.²⁰ Researchers have shown that externalizing behaviors are associated with gambling and not only with gambling problems.^{17,21-22} Even though studies have shown that adolescent gambling is associated with adolescent substance use, no study has investigated whether there are gender differences in the association between childhood externalizing behaviors (such as impulsivity, aggression and hyperactivity) and adolescent gambling. Adolescent gambling and gambling problems are often associated with adolescent drug use, abuse and dependence; and might share the same developmental roots.^{12-13, 21, 23-25}

Gender differences in personal and mental health characteristics have been found among gamblers in predominantly Caucasian youth samples, but very little is known about factors associated with gambling among urban African-American youth and whether similar gender differences exist in this subpopulation. Based on findings from previous studies, we hypothesized that gambling would be more strongly associated with substance use and childhood externalizing behaviors (impulsivity, aggression and hyperactivity) among African American males than females, and that gambling would be more strongly associated with internalizing behaviors (anxiety and depressive feelings) among African-American females than males. We also hypothesize that male adolescents would gamble more frequently than females and prefer strategic forms of gambling. This study explores gender differences (1) in lifetime and recent substance use and childhood internalizing and externalizing behavior; and (2) gambling behaviors and preferences among gamblers identified in a community sample of urban African-American adolescents.

2. Methods

2.1. Sample

Data are from a prospective study conducted within the context of a group randomized prevention trial targeting academic achievement and aggression in 27 first grade classrooms in 9 urban primary schools primarily located in western Baltimore, $n=678$. Details of the trial design and interventions are available elsewhere.²⁶ Briefly, a randomized block design was employed, with schools serving as the clustering factor. Classrooms were divided into two intervention groups, one being classroom-based and the other involving the parents, and a control setting classroom that received the usual school curriculum. Both interventions focused on achievement and aggressive behavior with the long term goal of impacting on antisocial behavior, substance use, and anxious and depressive emotional problems.²⁶ Students have been assessed annually since entering first grade in 1993. In Spring 2004, when most of the cohort was in 11th grade, 76% of the original cohort ($n=515$) participated in a 60-90 minute self-administered computer with audio interview: 55% male, 88% African American, mean age 17.1 years. An examination of the baseline measures for those who were lost to follow-up and those who were successfully followed revealed no statistically significant differences in teacher ratings of behavior, academic achievement, race/ethnicity, sex, or subsidized lunch status.²⁷ The study sample for this study focuses on the 452 African-American adolescents (54% male, mean age 17.1 years). The 63 Caucasian youth excluded from our analyses (64% of the 39 males and 38% of the 24 females gambled in the past-year) did not differ from the African-American youth in regards to demographics and past-year gambling. Study protocols were approved by institutional review boards (IRB) of Johns Hopkins University. Parental signed consent and child assent were obtained.

2.2. Measures

Gambling—The South Oaks Gambling Screen - Revised for Adolescents (SOGS-RA) was included in the 2004 interview to assess gambling behaviors among adolescents.⁴ The SOGS-RA is a 12 item adaptation of the adult orientated SOGS,²⁸ and assesses gambling behavior and gambling-related problems in the past 12-month time frame using wording of items and response options that reflect adolescent gambling behavior at an age-appropriate reading level.⁴ A score of 4 or more on the SOGS-RA indicates problem gambling and a score of 2-3 is indicative of 'at-risk' gambling behavior.⁴ Based on SOGS-RA questions we created a strategic game variable (bet on games of personal skill, sports, card games, horse or dog races, dice games, coins in the past-year) and a non-strategic game variable (bingo, slot and poker machines, lottery, pull tabs and scratch), similar to those described elsewhere.²⁹ We also created a general gambling frequency tertile variable (low, moderate and high) derived from the SOGS-RA gambling frequency variables for each type of game. Using the SOGS-RA responses we selected adolescents who were past-year gamblers. In our sample the SOGS-RA internal consistency reliability was $\alpha=0.71$, comparable to the reported scale $\alpha=.80$ in other samples.⁴

Substance use—Questions adapted from the Monitoring the Future National Survey assessed lifetime and past-year alcohol, tobacco and other drug use from grades 6 to 11.³⁰ Two illegal drug use variables (lifetime and past-year) were created by combining any indicated use of the following drugs: marijuana, cocaine, crack, heroin, hallucinogens, ecstasy (3,4-methylenedioxymethamphetamine, MDMA), and inhalants. Lifetime cumulative variables were created based on responses to the lifetime alcohol, tobacco and other drug use variables from the grades 6 to 11 assessments.

Emotional problems—In 2004, a 45-item scale, the Baltimore How I Feel Adolescent Version, assessed emotional problems (BHIF-AY).³¹ Youth report the frequency of depressive

and anxious feelings over the last two weeks on a four-point scale from “never” (0) to “most times” (3). Both the depression and anxiety subscales show good concurrent validity.³¹ The internal consistency alphas for the BHIF-AY Depression and Anxiety subscales ranged between .79 and .88 through the middle school years.³¹ Two-week test-retest reliability coefficients were .76 and .83 for the Anxiety and Depression subscales, respectively, in middle school.³¹ In terms of concurrent validity, youth self-reports on the BHIF-AY Depression subscale in middle school were significantly associated with a diagnosis of Major Depressive Disorder on the computerized-Diagnostic Interview Schedule for Children-IV (C-DISC-IV), whereas middle school BHIF-AY Anxiety subscale scores were significantly associated with a diagnosis of Generalized Anxiety Disorder on the C-DISC-IV.³² After totaling the scores to each item, we created dichotomous anxious and depressive variables (e.g., low and high levels of anxious symptoms divided at the mean). We opted to create dichotomous instead of tertile variables because data were skewed to the left.

Conduct disorder—Conduct disorder was assessed yearly from 6th-11th grade using the DISC-IV, a fully structured interview designed to be administered by lay interviewers.³² Any individual that met diagnostic criteria for lifetime conduct disorder in any of the 6th to the 11th grade assessments was classified as having a lifetime conduct disorder.

Childhood Behaviors—When the child was in first grade, parents rated their child's adaptation to family/home task demands over the preceding three week period using the Parent Observation of Child Adaptation (POCA).³³ Adaptation was rated on a 4-point frequency scale (1 = almost never to 4 = almost always) with higher scores reflecting more problems. We use the domains of aggressive/disruptive behavior (11 items, coefficient alpha=0.79), students' self-regulation (impulsivity, 3 items, coefficient alpha=0.47), and motor control (hyperactivity, 3 items, coefficient alpha=0.54). Parent ratings were categorized into levels representing low, moderate and high levels of behavior problems.

Upon entry into first grade, teacher ratings of the same behaviors (aggressive behavior, impulsivity and hyperactivity) were also assessed using The Teacher Observation of Classroom Adaptation-Revised (TOCA-R).³⁴ A trained assessor guided the teacher through a structured interview of 36 items pertaining to the child's adaptation to classroom task demands over the preceding three-week period. Each child is rated on a six-point frequency scale (1 = “almost never” to 6 = “almost always”); higher scores reflect more problems. Internal consistency reliabilities (Cronbach alpha) of all three domains exceed 0.8.³⁴ Teacher ratings were also categorized into three levels (low, moderate and high).

Demographic data (age, sex, and race) was obtained from school records. During the parent interview in first grade, parents reported their highest level of education. As another proxy for SES, the 2004 assessment included 10 standardized items from the Neighborhood Environment Scale (NES), which assesses exposure to deviant behavior in the neighborhood, including violent crime, drug use and sale, racism, and prejudice.³⁵ Coefficient alpha for the total scale is .80.³⁵ These items were summed and the score tertiled to reflect levels of neighborhood disadvantage: low, moderate and high.

2.3. Statistical Analyses

Initially we began by conducting exploratory analyses and contingency table analysis on the African-American adolescents who were past-year gamblers (n= 214, male gamblers versus female gamblers). Logistic regression models were used to compare gender differences of lifetime and past-year substance use, past-year anxious and depressive feelings, lifetime conduct disorder, childhood behaviors, gambling preferences, gambling frequency, and the occurrence of gambling problems based on responses to the 12 SOGS-RA scored items.

Separate logistic models estimated gender differences for the entire African- American sample, in these cases we also tested for gambling-gender interactions to test whether gambling modified the association between gender and drug use, current mental health and childhood externalizing behaviors. To accommodate the initial sample design (clustering of students within schools), statistical analysis was performed with STATA 8.2 using a variant of the Huber-White sandwich estimator of variance to obtain robust standard errors and variance estimates.³⁶ Statistical results are presented via chi-square tests (χ^2) and p-values, adjusted odds ratios (aOR) and 95% confidence intervals (95% CI).

3. Results

3.1. Demographics

The overall estimated past-year gambling prevalence among the 452 adolescents 17 year-old African-American adolescents was 47.4% (95% CI=42.7-52.0); 56.6% of males (n=138) and 36.5% of females (n=76) had gambled in the year preceding the interview ($\chi^2=18.05$, d.f.=1, $p<.001$). There were no differences in neighborhood disadvantage ($\chi^2=2.54$, d.f.=2, $p=0.281$), parents' level of education ($\chi^2=1.25$, d.f.=3, $p=0.742$) or first grade intervention status ($\chi^2=0.68$, d.f.=2, $p=0.712$) between gamblers and non-gamblers. No gender differences were noted for neighborhood disadvantage ($\chi^2=0.07$, d.f.=2, $p=0.970$), parents' level of education ($\chi^2=0.57$, d.f.=3, $p=0.903$) or 1st grade intervention status ($\chi^2=1.22$, d.f.=2, $p=0.544$) among the 214 past-year gamblers.

Prevalence of past-year gambling problems (includes at-risk and problem gamblers according to the SOGS-RA) among male and female gamblers was 23.2% (n=32, 20 at-risk gamblers and 12 problem gamblers) and 6.6% (n=5, 4 at-risk gamblers and 1 problem gambler), respectively. Male and female problem gamblers represented 13.1% and 2.4% of the overall African-American sample, respectively. We did not test for gender differences among adolescents with gambling problems (at-risk and problem gamblers) due to the small number of females with gambling problems.

3.2. Substance use and other mental health characteristics

We explored gender differences in substance use and other mental health characteristics among adolescents who reported gambling in the year prior to the interview and compared these findings to gender differences in the overall sample. There were no gender differences in lifetime or past-year substance use for any of the substances among past-year gamblers (Figure 1), nor in the overall sample ($p>.05$). When testing for interactions between gender and gambling, gambling modified only one of the associations between substance use and gender. While among non-gamblers, females were less likely than males to be past-year tobacco users (females: 17.7% vs. males: 27.5%, aOR=0.6, 95%CI=0.3-1.1, $p=.07$); among gamblers, females were more likely than males to be past-year tobacco users (females: 42.4% vs. males: 30.1% aOR=2.9, 95%CI=1.5-5.5, $p=.002$).

Though female gamblers were more likely than male gamblers to report high levels of anxious (71% vs. 45%, aOR= 3.3, 95% CI=1.6-6.8, $p=.001$) and depressive feelings (59% vs. 41%, aOR= 2.2, 95% CI=1.2-4.3, $p=0.016$), these findings were similar to gender differences found in the overall sample (anxiety: 61% vs. 47%, aOR= 1.8, 95% CI=1.2-2.8, $p=.004$ and depressive feelings: 59% vs. 43%, aOR= 2.0, 95%CI=1.3-2.9, $p<.001$). When we tested for interactions between gender and gambling, gambling was found to modify only the association between gender and anxious feelings, and not the association between gender and depressive feelings. Though among non-gamblers there were no gender difference in reporting past-year anxious feelings (females: 56.5%, males: 50%, aOR=1.3, 95%CI=0.7-22.1, $p=0.392$); among

gamblers, females were more likely than males to report past-year anxious feelings (females: 72.9%, males: 44.8%, aOR=1.9, 95% CI=1.1-3.6, $p=.035$).

Contrary to males being more likely to meet criteria for lifetime conduct disorder in the overall sample (29% vs. 15%, aOR= 2.3, 95% CI=1.4-3.9, $p=.002$), no gender differences were found among the past-year gamblers (Table 1). As expected, males in general were rated by teachers and parents to exhibit more externalizing behaviors than females. The same pattern emerged among gamblers, where males were more likely than females to have been rated by their first grade teacher to have higher levels of childhood externalizing behaviors, however male and female gamblers did not differ on high rates of childhood impulsivity and hyperactivity as rated by parents. When we tested for interactions between gender and gambling, gambling modified only the association between gender and high levels of childhood hyperactivity as rated by parents. Whereas among non-gamblers, males were more likely than females to have had high levels of childhood hyperactivity as rated by parents (aOR=6.0, 95% CI=2.7-13.3, $p<.001$); among gamblers, males did not differ from females in the odds of having had high levels of childhood hyperactivity (aOR=0.6, 95% CI=0.3-1.2, $p=.148$).

3.3. Gender differences in gambling preferences, gambling frequency and gambling-related problems on the SOGS-RA

Table 2 shows the games of choice among the 214 African-American adolescents that gambled in the past-year. Males were more likely than females to play strategic games and females were more likely than males to play non-strategic games. Gender differences also occurred at the individual game level (Table 2). Male gamblers were more likely than female gamblers to gamble more frequently in the past-year (high frequency: 41% vs. 18%, aOR= 4.8, 95% CI=1.1-4.5, $p\text{-value}=0.043$). Male gamblers had more gambling-related problems (reflected as higher SOGS-RA scores) as compared to female gamblers (Table 3). In particular, males were more likely to gamble again in an effort to regain what they had lost, have more school or family problems, and feel guilty about the amount of money lost than female gamblers (Table 3).

4. Discussion

The main findings of this study were: 1) there were no gender differences between gamblers in meeting criteria for lifetime conduct disorder (different from the overall sample); 2) male gamblers were more likely than their female counterparts to have been rated by their first grade teacher to have higher levels of childhood externalizing behaviors; 3) male and female gamblers had been rated by parents as having had high levels of childhood impulsivity and hyperactivity (different from the overall sample); 4) female gamblers were more likely than male gamblers to report high levels of anxious and depressive feelings (similar to the overall sample, but different from non-gamblers); 4) male gamblers preferred strategic games while females preferred non-strategic games; 5) male gamblers were more likely than female gamblers to gamble more frequently in the past-year and to endorse certain SOGS-RA items.

4.1. Substance use

Our hypothesis that male adolescent gambling would be more strongly associated with substance use was not supported. Past-year alcohol use was associated with gambling in both genders, resembling findings from other studies conducted among samples of mainly Caucasian adolescents.^{12,17} It is possible that a common genetic or environmental vulnerability for gambling and alcohol use might exist.³⁷ Gender differences in the associations between other substance use and adolescent gambling still need to be better explained. There were no gender differences in lifetime and past-year substance use among gamblers as well as in the overall sample, which differ from general population studies, in which male adolescents are

more likely to use drugs as compared to female adolescents.³⁸ As such, the fact that no gender differences in substance use were found in the overall sample in our study might be reflective of the urban, inner-city setting of the study. Interestingly, when we tested for gambling-gender interactions, gambling was a stronger correlate of past-year tobacco use among females as compared to males. This result still needs to be replicated in future studies.

4.2. Mental health characteristics

Female gamblers were more likely to report anxious and depressive feelings than their male counterparts, parallel to gender differences in the overall sample. Because both gambling and psychiatric data were collected in the same year, the exact nature of the association between psychiatric symptoms still needs to be clarified. Females might have started to gamble to alleviate their psychiatric symptoms, or they might have developed psychiatric symptoms secondary to gambling, or even there might be a common shared vulnerability between psychiatric symptoms/disorders and gambling.¹² On the other hand, our findings might just be reflecting gender differences in anxious and depressive feelings in the general adolescent population.³⁹ However, it is important to note that when we tested for gambling-gender interactions, gambling was a stronger correlate of anxiety among females as compared to males.

Contrary to established gender differences in lifetime conduct disorder,⁴⁰⁻⁴¹ no gender differences in the prevalence of meeting criteria for lifetime conduct disorder were found in this study among youth who gambled in the year prior to assessment. There is already evidence showing that girls who live in disadvantaged neighborhoods have higher rates of conduct disorders and problem behaviors as compared to girls living in more advantaged neighborhoods.⁴² Our results suggest that, at least in urban samples of youth, the more deviant females (e.g., with higher levels of conduct disorders) are the ones that become involved with gambling activities in adolescence. Future studies with larger female samples are needed in order to replicate this finding.

Childhood externalizing behaviors might play a role in adolescent gambling initiation in both genders. We hypothesize that the discrepancy of parents and teachers ratings of childhood externalizing behaviors among respondents who later were identified as male and female gamblers might have occurred because correlations are often modest between different informants because they access different types of environmental influences (classroom rules vs. family/household standards) as well as have different standards for rating problems. Parents might have a tendency to minimize their own children's externalizing behaviors, they might have also experienced the same childhood externalizing behaviors their children now experience, thus, they might believe these are normative behaviors. Thus, parents might be less able than teachers to identify externalizing behaviors. Teachers might be better prepared than parents to identify childhood externalizing behaviors. On the other hand, parents might be able to better identify at least some of the childhood externalizing behaviors in their own household. The relationship between childhood externalizing behaviors and adolescent gambling needs to be further explored in future longitudinal studies.

4.3. Gambling preferences, gambling frequency and gambling-related problems on the SOGS-RA

Fewer adolescent females gambled and had gambling problems as compared to males, which is similar to the findings from other studies.^{12-15, 17} The proportion of adolescents who gambled in the past-year was lower than that reported in other studies.^{3, 8} This might have occurred because in Maryland not all forms of gambling are legalized, or due to differences in study methodology. If in future years casinos and slot machines are legalized we might expect the proportion of adolescents who gamble to increase.⁴³

4.4. Limitations and Strengths

This study has several strengths and limitations. A strength of this study is the sample, selected from an epidemiologically defined population representative of African-American students entering public schools in urban neighborhoods. The availability of longitudinal data on drug use, conduct disorders, and both parent and teacher ratings of childhood maladaptive behaviors is another strength of the study. One potential limitation is that self-reports could lead to response bias in cross-sectional results. Inherent in any longitudinal study is the possibility of attrition, especially when children are followed-up over a ten year period. While 24% attrition was observed, it appeared to be non-differential in respect to baseline demographic characteristics.²⁷ Another limitation of our study was the fact that there was a low number of problem gamblers which did not allow for meaningful analyses focusing on this specific subgroup. Also, analyses of associations of drug use, mental health problems and conduct disorders with gambling were based on cross-sectional data which limits our ability to make causal inferences. Because of the small number of Caucasians in the original sample we were not able to test for racial/ethnic differences in gambling.

4.5. Conclusion

In conclusion, adolescent gambling among this African-American urban sample was associated with substance use in both genders and with lifetime conduct disorder and psychiatric symptoms in females. Male gamblers had higher levels of externalizing behaviors as compared to female gamblers. Gender-specific characteristics need to be taken into account in prevention programs that aim to reduce adolescent gambling and forestall the progression from gambling to the development of gambling problems.

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Figure 1. Prevalence of substance use and past-year emotional feelings by gender in an urban sample of 17 year olds African-American gamblers.

Table 1

Lifetime conduct disorder and childhood externalizing behaviors as rated by parents and teachers in the first grade among an urban sample of 17 year-old African-Americans actively gambling in the past year.

	Male (%) (n=138)	Female (%) (n=76)	aOR [†] (95% CI) [§]	p-value
Lifetime conduct disorder	26.8	21.1	1.00 1.35 (0.61-3.02)	0.462
Parents' ratings				
Childhood aggression				
<i>Low</i>	27.9	42.0	1.00	
<i>Moderate</i>	34.4	33.3	1.52 (0.87-2.63)	0.135
<i>High</i>	37.7	24.6	2.28 (1.33-3.92)	0.003
Childhood hyperactivity				
<i>Low</i>	23.1	34.8	1.00	
<i>Moderate</i>	51.2	36.2	2.12 (1.10-4.06)	0.024
<i>High</i>	25.6	29.0	1.34 (0.65-2.79)	0.430
Childhood impulsivity				
<i>Low</i>	25.6	43.5	1.00	
<i>Moderate</i>	41.3	26.1	2.75 (1.29-5.88)	0.009
<i>High</i>	33.1	30.4	1.85 (0.88-3.89)	0.106
Teachers' ratings				
Childhood aggression				
<i>Low</i>	21.0	39.5	1.00	
<i>Moderate</i>	38.4	44.7	1.60 (0.76-3.37)	0.219
<i>High</i>	40.6	15.8	4.98 (2.28-10.87)	<.001
Childhood hyperactivity				
<i>Low</i>	29.0	38.2	1.00	
<i>Moderate</i>	23.9	36.8	0.86 (0.38-1.93)	0.717
<i>High</i>	47.1	25.0	2.67 (1.23-5.78)	0.013
Childhood impulsivity				
<i>Low</i>	33.3	50.0	1.00	
<i>Moderate</i>	30.4	27.6	1.68 (0.92-3.04)	0.090
<i>High</i>	36.2	22.4	2.39 (1.27-4.50)	0.007

[†] Adjusted Odds Ratio: adjusted for neighborhood disadvantage and intervention status.

[§] Females and low levels are comparison group.

Table 2

Adjusted Odds Ratio of gambling preferences by gender among an urban sample of 17 year-old African-Americans actively gambling in the past year.

	aOR [†] (95% CI) [§]	p-value
Played any strategic games^{††}	20.4 (2.60-159.74)	.004
Played cards for money	1.42 (0.62-3.23)	.404
Flipped coins for money	2.15 (1.05-4.39)	.036
Bet money on games of personal skill	3.63 (1.89-6.99)	<.001
Bet money on sports games	2.45 (1.38-4.36)	.002
Bet money on horse or dog races	3.37 (0.37-30.38)	.278
Played dice games for money	4.15 (1.93-8.95)	<.001
Played any non-strategic games^{†††}	0.36 (0.22-0.57)	<.001
Played bingo for money	0.32 (0.13-0.83)	.018
Played slot machines, poker machines or other gambling machines for money	0.51 (0.13-1.94)	.323
Played scratch tabs for money	0.48 (0.24-0.95)	.036
Played lottery for money	0.32 (0.12-0.84)	.021
Played pull tabs for money	1.63 (0.14-18.38)	.694

[†] Adjusted Odds Ratio: adjusted for neighborhood disadvantage and intervention status.

^{††} Strategic games: games of personal skill (e.g., pool, golf, bowling), card games (e.g., poker), flipping coins, sports, horse or dog races, and dice games.

^{†††} Non-strategic games: bingo, slot and poker machines, lottery, pull tabs, and scratch tabs.

[§] Females are comparison group.

Table 3

SOGS-RA responses by gender among an urban sample of 17 year-old African Americans actively gambling in the past year.

In the past 12 months....	Male (%) (n=138)	Female (%) (n=76)	aOR [†] (95% CI) [§]	p-value
How often have you gone back another day to try and win back money you lost gambling?				
<i>Every time/most of the time</i>	12.3	2.6	7.11 (1.81-27.96)	0.005
<i>Some of the time</i>	25.4	10.5	3.60 (1.56-8.32)	0.003
<i>Never</i>	62.3	86.8	1.00	
When you were betting, have you ever told others you were winning money when you weren't?				
<i>Yes</i>	8.7	6.6	1.37 (0.48-3.99)	0.555
<i>No</i>	91.3	93.4	1.00	
Has your betting money ever caused any problems for you such as arguments with family and friends, or problems at school or work?				
<i>Yes</i>	14.5	1.3	12.62 (1.59-100.11)	0.016
<i>No</i>	85.5	98.7	1.00	
Have you ever gambled more than you had planned to?				
<i>Yes</i>	19.6	7.9	2.78 (0.89-8.79)	0.078
<i>No</i>	80.4	92.1	1.00	
Has anyone criticized your betting, or told you that you had a gambling problem whether you thought it true or not?				
<i>Yes</i>	5.8	1.3	4.94 (0.54-45.40)	0.158
<i>No</i>	94.2	98.7	1.00	
Have you ever felt bad about the amount of money you bet, or about what happens when you bet money?				
<i>Yes</i>	11.6	1.3	10.45 (1.55-70.56)	0.016
<i>No</i>	88.4	98.7	1.00	
Have you ever felt like you would like to stop betting, but didn't think you could?				
<i>Yes</i>	9.4	5.3	1.83 (0.61-5.51)	0.285
<i>No</i>	90.6	94.7	1.00	
Have you ever hidden from family or friends any betting slips, IOUs, lottery tickets, money that you won, or any signs of gambling?				
<i>Yes</i>	3.6	2.6	1.29 (0.21-8.09)	0.786
<i>No</i>	96.4	97.4	1.00	
Have you had money arguments with family or friends that centered on gambling?				
<i>Yes</i>	5.1	1.3	3.94 (0.48-32.26)	0.201
<i>No</i>	94.9	98.7	1.00	

In the past 12 months....	Male (%) (n=138)	Female (%) (n=76)	aOR [†] (95% CI) [§]	p-value
Have you borrowed money to bet and not paid it back?				
Yes	4.4	1.3	3.23 (0.32-32.09)	0.317
No	95.7	98.7	1.00	
Have you ever skipped or been absent from school or work due to betting activities?				
Yes	5.1	0.0	n/a [¶]	
No	94.9	100.0		
Have you borrowed money or stolen something in order to bet or to cover gambling activities?				
Yes	1.5	0.0	n/a [¶]	
No	98.5	100.0		
SOGS-RA Scores^{§§}				
1: recreational gamblers with no problems	76.8	93.4	1.00	
2-3: at-risk gamblers	14.5	5.3	3.69 (1.19-11.41)	0.024
≥4: problem gamblers	8.7	1.3	7.76 (0.93-64.85)	0.059

[†] Adjusted Odds Ratio: adjusted for neighborhood disadvantage and intervention status.

[§] Females are comparison group.

^{§§} Female recreational gamblers are comparison group

[¶] Odds ratio not available because no females answered yes to this question.