Relationships Between Problem-Gambling Severity and Psychopathology as Moderated by Income

RACHEL L. SANACORA1,2, SETH W. WHITING3,4, COREY E. PILVER5, RANI A. HOFF3,4 and MARC N. POTENZA1,4,6,7*

1Yale Child Study Center, Yale University School of Medicine, New Haven, CT, USA
2University of Connecticut, Storrs, CT, USA
3Department of Veterans Affairs, VISN 1 Mental Illness Research Education and Clinical Center, West Haven, CT, USA
4Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA
5Department of Biostatistics, Yale School of Public Health, New Haven, CT, USA
6Department of Neuroscience and the National Center on Addiction and Substance Abuse (CASS/ Columbia), Yale University School of Medicine, New Haven, CT, USA
7Connecticut Mental Health Center, Yale University School of Medicine, New Haven, CT, USA

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Background and aims: Problem and pathological gambling have been associated with elevated rates of both Axis-I and Axis-II psychiatric disorders. Although both problem gambling and psychiatric disorders have been reported as being more prevalent among lower income vs. middle/higher income groups, how income might moderate the relationship between problem-gambling severity and psychopathology is incompletely understood. To examine the associations between problem-gambling severity and psychopathology in lower income and middle/higher income groups.

Methods: Data from the first wave of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (n = 43,093) were analyzed in adjusted logistic regression models to investigate the relationships between problem-gambling severity and psychiatric disorders within and across income groups. Results: Greater problem-gambling severity was associated with increased odds of multiple psychiatric disorders for both lower income and middle/higher income groups. Income moderated the association between problem/pathological gambling and alcohol abuse/dependence, with a stronger association seen among middle/higher income respondents than among lower income respondents. Discussion and conclusions: The findings that problem-gambling severity is related to psychopathology across income groups suggest a need for public health initiatives across social strata to reduce the impact that problem/pathological gambling may have in relation to psychopathology. Middle/higher income populations, perhaps owing to the availability of more “disposable income,” may be at greater risk for co-occurring gambling and alcohol-use psychopathology and may benefit preferentially from interventions targeting both gambling and alcohol use.

Keywords: income, problem gambling, psychiatric disorders, psychopathology, NESARC

INTRODUCTION

Problem/pathological gambling (PPG) is a significant public health concern. In addition to financial and relationship problems associated with PPG, high rates of comorbidity exist between PPG and many psychiatric disorders, suggesting complex contributions to negative outcomes associated with PPG. Multiple levels of problem-gambling severity (including low-risk, at-risk, and PPG) are associated with elevated rates of both Axis-I and Axis-II DSM-IV psychiatric disorders, with the strongest relationships typically observed with more severe gambling pathology (Barry, Stefanovics, Desai, & Potenza, 2011; Crockford & El-Guebaly, 1998; Cunningham-Williams, Cottler, Compton, & Spitznagel, 1998; Desai & Potenza, 2008). Nationally representative studies have shown that PPG is associated with a broad range of other negative health correlates including incarceration and poorer general health (Affifi, Cox, Martens, Sareen, & Enns, 2010b; Desai, Maciejewski, Dausey, Daldarone, & Potenza, 2004; Welte, Barnes, Weiczorek, Tidwell, & Parker, 2002). In addition to health concerns, PPG has been correlated with socioeconomic status as indexed by annual family income. Data suggest that lower income as well as living in disadvantaged neighborhoods (a correlate of low income) correspond to the increased odds of PPG (Affifi, Cox, Martens, Sareen, & Enns, 2010a; Faregh & Derevensky, 2013). Gambling may represent a form of regressive taxation as people with lower incomes may spend higher proportions of their annual income on gambling as compared to those with middle/higher incomes (Schissel, 2001). This aspect warrants consideration, as people with gambling-related and other psychopathology are more likely to have lower incomes.

* Corresponding author: Marc N. Potenza, MD, PhD; Yale University School of Medicine, Room 726, 1 Church St., New Haven, CT 06510, USA; Phone: +1 203 974 7356; Fax: +1 203 974 7366; E-mail: marc.potenza@yale.edu

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and facilities for housing workers. Jails, prisons, and hospitals were not included. The study oversampled black and Hispanic households and respondents aged 18–24 years old to have sufficient statistical power to examine the minority populations and young people, who may have otherwise been under-represented in a simple random sample. The final sample consisted of 43,093 respondents, representing an 81% response rate.

**Measures**

The Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM IV version (AUDADIS-IV; Grant, Dawson, et al., 2003; Ruan et al., 2008), a structured diagnostic assessment administered by trained lay interviewers, was used to make diagnoses regarding psychiatric disorders. The instrument has been repeatedly tested for reliability and validity and found to be a good measure for detecting psychiatric disorders in clinical and general population samples (Chatterji et al., 1997; Grant, Dawson, et al., 2003; Grant et al., 2004; Hasin, Carpenter, McCloud, Smith, & Grant, 1997).

The publicly accessible data from the NESARC contains variables that have synthesized self-report data from the AUDADIS-IV into diagnostic categories based upon DSM-IV criteria. The data contain diagnostic variables for major depression, dysthymia, mania and hypomania, panic disorder with and without agoraphobia, social phobia, simple phobia, generalized anxiety disorder, alcohol abuse, alcohol dependence, drug abuse, drug dependence, nicotine dependence, and pathological gambling (Grant, Kaplan, Shepard, & Moore, 2003). The instrument provides the ability to distinguish past-year diagnoses, prior to past-year diagnoses, and lifetime diagnoses, and includes exclusions for illness and substance-induced symptoms where appropriate. We utilized the past-year diagnoses with illness and substance exclusions, thereby making the diagnoses “primary” or independent diagnoses as defined by the DSM (Desai & Potenza, 2008). Past-year diagnoses are less susceptible to recall bias and allow for a more precise examination of psychiatric disorder temporal co-occurrence, because features of disorders will have been present within one year of each other.

The NESARC at wave 1 also assessed seven Axis-II personality disorders: antisocial, avoidant, dependent, histrionic, obsessive/compulsive, paranoid, and schizoid. Not every DSM-IV personality disorder was assessed due to subject burden and time constraints (Grant et al., 2004). Because the Axis-II disorders were assumed to be temporarily stable constructs, no time periods were applied. Respondents were asked about how they felt or acted most of the time throughout their lives regardless of situation. The assessments followed DSM-IV diagnostic criteria. To meet the criteria, respondents had to endorse the required number of symptoms as well as report that at least one of the symptoms had caused significant social dysfunction (Grant et al., 2004).

Problem-gambling-severity groupings were based on the 10 diagnostic inclusionary criteria for pathological gambling. Five or more inclusionary symptoms are required for a DSM-IV diagnosis of pathological gambling (Desai & Potenza, 2008). Given data suggest that problem-gambling severity as defined by DSM criteria lies along a spectrum (Slutske et al., 2000, 2001; Toce-Gerstein,
Gerstein, & Volberg, 2003), we divided the sample into four groups as previously done (Desai & Potenza, 2008; Grant et al., 2009): non-gambling and low-frequency gambling (non-/LF gambling; individuals who reported that they had never gambled more than five times in a single year in their lifetime); low-risk gambling (individuals who reported gambling more than five times in a year but with no inclusionary criteria for pathological gambling in the previous year); at-risk gambling (individuals who reported one or two inclusionary criteria for pathological gambling in the previous year); and problem/pathological gambling (PPG; those who reported three or more inclusionary criteria for pathological gambling in the previous year). The divisions of low-risk, at-risk, and PPG are identical to those recently used in population-based samples of gamblers (Desai & Potenza, 2008; Grant et al., 2009), with the low frequency of pathological gambling (five or more inclusionary criteria, less than 1% of the sample) necessitating the combination of individuals with problem or pathological gambling, as done in prior studies (Cunningham-Williams et al., 1998; Slutske et al., 2000, 2001).

Annual family income was used to stratify respondents into two groups: lower income and middle/higher income. The lower income group was defined as having an annual family income of less than $24,000, while middle/higher income was $24,000 or more. This threshold is similar to that used previously to examine the factors relating to income differences and recreational gambling (Barry, Maciejewski, Desai, & Potenza, 2007). Other variables utilized in the analyses include self-reported gender, age in years, race/ethnicity (black, Hispanic, and white), education, current employment, and marital status. Race/ethnicity categories were non-mutually exclusive because respondents could endorse more than one category.

Data analyses

The primary research questions concerned the associations between past-year problem-gambling severity and psychiatric disorders among lower income and middle/higher income groups. To investigate, we first examined the association between problem-gambling severity and other sociodemographic variables among lower income (Figure 1a) and middle/higher income groups (Figure 1b) to identify sociodemographic variables potentially influencing the relationship between income, problem-gambling severity, and psychiatric disorders. Finally, we fit a series of logistic regression models where psychiatric variables were the dependent variables of interest and the four-level problem-gambling-severity variable, income, and an interaction between income and problem-gambling severity were the independent variables of interest, adjusting for previously identified sociodemographic variables.

Ethics

All respondents gave written consent to participate in the NESARC. This study used de-identified data and thus was exempted from further IRB review.

RESULTS

Sociodemographics by income and problem-gambling severity

Of the 43,093 respondents from the NESARC survey, 16,016 people were classified as lower income (37.17%). Compared to the middle/higher income groups, the lower income group was significantly more likely to be female, older, unemployed, single, black, or Hispanic, and have a lower education level (Table 1). Lower income and middle/higher income respondents differed on problem-gambling severity with the lower income vs. middle/higher income groups showing the largest disparities mainly on non-/LF and low-risk levels of problem-gambling severity: non-/LF gambling (77.17% vs. 71.32%), low-risk gambling (20.14% vs. 25.81%), at-risk gambling (2.12% vs. 2.32%), and PPG (0.57% vs. 0.55%; Table 2).

Figure 1. (a) Association between problem-gambling severity and selected psychiatric disorders in the lower income group. (b) Association between problem-gambling severity and selected psychiatric disorders in the middle/higher income groups.
In Table 2, the sociodemographic characteristics of the groups are presented by problem-gambling severity among lower income and middle/higher income groups. For both lower income and middle/higher income respondents, problem-gambling severity was significantly related to gender, education, marital status, race/ethnicity, and age. In both the income groups, males and individuals with lower education levels were found more frequently in the higher problem-gambling-severity groups. There was also a significant relationship with marital status, with a relatively fewer married individuals reporting higher problem-gambling severity. For both income groups, there was a relationship between race/ethnicity and problem-gambling severity with higher proportions of black individuals and lower proportions of white and Hispanic individuals reporting higher problem-gambling severity (particularly, PPG). Age was also associated with problem-gambling severity in both income groups, with the PPG group being youngest within each income group.

**Psychiatric disorders, income level, and severity of gambling pathology**

Consistent with the previous NESARC studies (Affifi et al., 2010a; Barry et al., 2011), rates of psychiatric disorders were highest among respondents with lower incomes (Supplementary Table S1) and greater problem-gambling severity (Table 3 and Supplementary Table S2). The average numbers of Axis-I diagnoses increased with increasing problem-gambling severity in both the lower income and middle/higher income groups (Supplementary Table S3). Logistic regression models examined the relationships between problem-gambling severity and psychopathology among lower income and middle/higher income respondents, and how income might moderate the relationships (Table 4). In both the income groups and in comparison with their respective low-frequency/non-gambling groups, elevated odds in both income groups between low-risk gambling, at-risk gambling, and PPG; and most Axis-I and Axis-II disorders were observed with odds typically higher with increasing problem-gambling severity (Table 4). An interaction between income group and PPG significant at \( p < .01 \) was observed for alcohol abuse/dependence, indicating a stronger relationship between PPG and alcohol abuse/dependence in the middle/higher income group as compared to the lower income group (Figure 2).

**DISCUSSION AND CONCLUSIONS**

This is the first study to the author’s knowledge to examine the association between income, problem-gambling severity, and a broad range of Axis-I and Axis-II psychopathology in a national sample. The significant relationships between problem-gambling severity and psychopathology for both lower income and middle/higher income respondents, as hypothesized, suggest a need for public health interventions across social strata to reduce the impact that greater problem-gambling severity may have with respect to psychopathology.

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| Characteristic | Lower income | Middle/higher income | \( \chi^2 \) | \( p \) |
|----------------|--------------|----------------------|-----------|--------|
| Gender         | Male         | 32.36                | 44.86     | 46.59  | 193.40 | <0.0001 |
|                | Female       | 67.64                | 55.14     | 53.67  | 9.73   | <0.0001 |
| Education      | Less than high school | 33.99 | 36.05 | 31.62 | 27.73 | 22.44 | 3.12 | 0.077 |
|                | High school graduate | 24.11 | 26.09 | 23.70 | 22.26 | 22.44 | 19.31 |
|                | Some college | 9.12                 | 8.46      | 6.06   | 5.68   | 9.73   | <0.0001 |
|                | College or higher | 29.28 | 28.77 | 35.23 | 13.49 | 64.24 | <0.0001 |
| Employment     | Full time    | 29.28                | 33.33     | 13.49 | 10.58 | 64.24 | <0.0001 |
|                | Part time    | 11.89                | 13.64     | 9.09   | 8.37   | 11.72  | <0.0001 |
|                | Not working  | 58.83                | 60.82     | 53.03  | 26.64  | 25.95  | 24.07  |
| Marital status | Married      | 32.71                | 30.04     | 26.67  | 30.68  | 70.42  | <0.0001 |
|                | Previously married | 37.87 | 44.99 | 36.97 | 30.68 | 38.64 | 19.31 |
|                | Never married | 29.42                | 24.97     | 36.97 | 30.68 | 38.64 | 19.31 |
| White race     | Non-Latino   | 70.36                | 71.04     | 63.03  | 51.14  | 24.62  | <0.0001 |
|                | Latino       | 24.99                | 25.54     | 33.03  | 44.32  | 26.60  | <0.0001 |
| Hispanic ethnicity | Non-Latino | 24.99              | 15.74     | 14.32  | 11.36  | 14.48  | <0.0001 |
|                | Latino       | 49.09                | 53.03     | 45.55  | 40.99  | 43.62  | 41.25  |

Note: \( \chi^2 \) = non-LF gambling = non- or low-frequency gambling. Numbers represent the weighted mean values, stratified by income. Race and ethnicity categories are not mutually exclusive. *Numbers represent the weighted mean values, stratified by income.*
| Diagnosis             | Non-/LF gambling | Low-risk gambling (OR) | At-risk gambling (OR) | Problem/pathological gambling (OR) | $\chi^2$ | $p$  |
|-----------------------|------------------|------------------------|----------------------|-----------------------------------|---------|------|
| Major depression      | 8.43             | 9.45 (1.13)            | 16.36 (2.13)         | 17.05 (2.23)                      | 34.41   | <.0001 |
| Dysthymia             | 2.74             | 3.26 (1.19)            | 4.55 (1.69)          | 6.82 (2.60)                       | 10.44   | .0152 |
| Mania                | 2.02             | 3.13 (1.57)            | 5.15 (2.64)          | 9.09 (4.86)                       | 42.87   | <.0001 |
| Hypomania             | 1.17             | 1.21 (1.04)            | 4.85 (4.32)          | 2.27 (1.97)                       | 35.77   | <.0001 |
| Panic disorder\(^a\) | 2.57             | 3.00 (1.17)            | 7.88 (3.24)          | 6.82 (2.77)                       | 39.24   | <.0001 |
| Social phobia         | 2.71             | 3.74 (1.39)            | 6.67 (2.57)          | 10.23 (4.10)                      | 39.76   | <.0001 |
| Simple phobia         | 6.89             | 9.87 (1.48)            | 14.55 (2.30)         | 20.45 (3.48)                      | 73.37   | <.0001 |
| Generalized anxiety   | 2.52             | 3.13 (1.25)            | 5.15 (2.10)          | 10.23 (4.42)                      | 29.75   | <.0001 |
| Alcohol ab/dep        | 5.67             | 9.32 (1.71)            | 19.09 (3.93)         | 37.55 (9.99)                      | 262.83  | <.0001 |
| Nicotine dep          | 11.06            | 18.71 (1.85)           | 30.61 (3.55)         | 47.73 (7.35)                      | 309.54  | <.0001 |
| Drug ab/dep           | 1.88             | 3.19 (1.72)            | 7.58 (4.27)          | 4.55 (2.48)                       | 63.70   | <.0001 |

| Personality disorders | Non-/LF gambling | Low-risk gambling (OR) | At-risk gambling (OR) | Problem/pathological gambling (OR) | $\chi^2$ | $p$  |
|-----------------------|------------------|------------------------|----------------------|-----------------------------------|---------|------|
| Avoidant              | 3.21             | 2.81 (0.87)            | 6.06 (1.95)          | 12.5 (4.31)                       | 34.33   | <.0001 |
| Dependent             | 0.84             | 0.77 (0.91)            | 1.52 (1.81)          | 6.82 (8.62)                       | 38.00   | <.0001 |
| Antisocial            | 2.99             | 5.33 (1.83)            | 13.64 (5.12)         | 25.00 (10.81)                     | 236.34  | <.0001 |
| Obsessive-compulsive  | 6.33             | 8.21 (1.32)            | 16.97 (3.02)         | 25.00 (4.93)                      | 108.77  | <.0001 |
| Paranoid              | 6.11             | 7.73 (1.29)            | 15.15 (2.75)         | 36.36 (8.79)                      | 171.09  | <.0001 |
| Schizoid              | 3.73             | 4.47 (1.21)            | 7.58 (2.11)          | 22.73 (7.59)                      | 93.62   | <.0001 |
| Histrionic            | 2.00             | 2.30 (1.15)            | 7.27 (3.84)          | 14.77 (8.50)                      | 104.32  | <.0001 |

Note. ab/dep = abuse or dependence; Non-/LF gambling = non- or low-frequency gambling; OR = odds ratio.
\(^a\)With or without agoraphobia.
Table 4. Adjusted odds ratios for psychiatric disorders in the NESARC data

| Diagnosis                        | Lower income | Middle/higher income | Lower vs. middle/higher income |
|----------------------------------|--------------|----------------------|-------------------------------|
|                                  | OR for low-risk vs. non-/LF gambling | OR for at-risk vs. non-/LF gambling | OR for problem vs. non-/LF gambling | OR for low-risk vs. non-/LF gambling | OR for at-risk vs. non-/LF gambling | OR for problem vs. non-/LF gambling | OR for low-risk vs. non-/LF gambling | OR for at-risk vs. non-/LF gambling | OR for problem vs. non-/LF gambling |
| Any Axis-I disorder              | 1.722***     | 3.185***             | 7.73***                       | 1.815***                             | 3.302***                             | 10.308***                             | 0.949                             | 0.965                             | 0.750                             |
| Any mood disorder                | 1.248***     | 2.162***             | 5.226***                      | 1.336***                             | 2.627***                             | 3.079***                             | 0.935                             | 0.823                             | 1.697                             |
| Major depression                 | 1.105        | 1.639***             | 3.951***                      | 1.294***                             | 2.177***                             | 2.174***                             | 0.854                             | 0.753                             | 1.817                             |
| Dysthymia                        | 1.294*       | 2.154***             | 5.280***                      | 1.291*                               | 1.737***                             | 2.517***                             | 1.002                             | 1.240                             | 2.098                             |
| Mania                            | 1.515***     | 2.092***             | 8.445***                      | 1.837***                             | 2.468***                             | 4.808***                             | 0.825                             | 0.848                             | 2.070                             |
| Hypomania                        | 1.817***     | 4.631***             | 3.460***                      | 1.268                                | 3.932***                             | 1.594***                             | 1.432                             | 1.178                             | 2.171                             |
| Any anxiety disorder             | 1.448***     | 2.131***             | 3.603***                      | 1.536***                             | 2.431***                             | 3.755***                             | 0.943                             | 0.877                             | 0.960                             |
| Panic disorder                   | 1.416**      | 2.858***             | 4.186***                      | 1.311                                | 3.387***                             | 2.766***                             | 1.081                             | 0.844                             | 1.514                             |
| Social phobia                    | 1.383***     | 1.727*               | 5.269***                      | 1.499**                              | 2.560***                             | 3.955***                             | 0.922                             | 0.675                             | 1.332                             |
| Simple phobia                    | 1.465**      | 2.434***             | 3.893***                      | 1.669**                              | 2.421***                             | 3.521***                             | 0.878                             | 1.005                             | 1.106                             |
| Generalized anxiety              | 1.322        | 1.318                | 3.839***                      | 1.376*                               | 2.194*                               | 4.523***                             | 0.961                             | 0.601                             | 0.849                             |
| Any substance-use disorder       | 1.907**      | 3.455**              | 5.904**                       | 1.973**                              | 3.614**                              | 8.994**                              | 0.967                             | 0.956                             | 0.656                             |
| Alcohol ab/dep                   | 1.952**      | 3.579**              | 3.892**                       | 1.845**                              | 3.508**                              | 9.898**                              | 1.051                             | 1.020                             | 0.393**                            |
| Nicotine dep                     | 1.787**      | 2.909***             | 5.567***                      | 1.877**                              | 3.110**                              | 6.201**                              | 0.952                             | 0.935                             | 0.898                             |
| Drug ab/dep                      | 1.892**      | 2.689***             | 4.779***                      | 1.995**                              | 3.512**                              | 1.764**                              | 0.948                             | 0.766                             | 2.709                             |
| Any Axis-II disorder             | 1.56**       | 2.725***             | 7.208***                      | 1.54**                               | 2.901***                             | 7.361**                              | 1.013                             | 0.939                             | 0.979                             |
| Any cluster A disorder           | 1.433***     | 2.237***             | 4.946***                      | 1.422***                             | 2.356**                              | 6.918**                              | 1.008                             | 0.949                             | 0.715                             |
| Paranoid                         | 1.479***     | 2.432***             | 7.124***                      | 1.523***                             | 2.611**                              | 7.676**                              | 0.971                             | 0.931                             | 0.928                             |
| Schizoid                         | 1.369***     | 2.165***             | 3.681***                      | 1.301**                              | 1.954**                              | 6.419**                              | 1.052                             | 1.108                             | 0.574                             |
| Any cluster B disorder           | 2.062***     | 3.118***             | 8.285***                      | 1.768**                              | 4.125**                              | 9.026**                              | 1.167                             | 0.756                             | 0.918                             |
| Antisocial                       | 2.264***     | 3.126***             | 6.820**                       | 1.922**                              | 4.312**                              | 8.445**                              | 1.203                             | 0.665                             | 0.789                             |
| Histrionic                       | 1.589        | 3.590***             | 8.638***                      | 1.290                                | 3.427**                              | 6.957**                              | 1.232                             | 1.047                             | 1.242                             |
| Any cluster C disorder           | 1.381***     | 2.332***             | 5.537**                       | 1.281**                              | 2.559**                              | 4.441**                              | 1.078                             | 0.911                             | 1.247                             |
| Avoidant                         | 1.080        | 1.971***             | 5.862***                      | 0.975                                | 1.892**                              | 3.946**                              | 1.107                             | 1.042                             | 1.486                             |
| Dependent                        | 1.526        | 0.692                | 12.401***                     | 1.056                                | 1.820                                | 8.132**                              | 1.444                             | 0.380                             | 1.526                             |
| Obsessive-compulsive             | 1.422***     | 2.452***             | 6.112***                      | 1.339**                              | 2.874***                             | 4.562***                             | 1.062                             | 0.853                             | 1.340                             |

Note: OR are adjusted for age, race/ethnicity, marital status, education, employment, and gender. ab/dep = abuse or dependence; Non-/LF gambling = non- or low-frequency gambling. *p < .05; **p < .01; ***p < .001.
In contrast to the anticipated greater strength between problem-gambling severity and psychopathology in the lower income vs. middle/higher income group, largely similar patterns were observed across income groups. The most robust statistical difference indicated a stronger relationship between alcohol abuse/dependence and PPG in the middle/higher income groups as compared to the lower income group. This finding resonates with that from a prior study in the United States using an independent sample that similarly indicated a stronger relationship between alcohol-use problems and gambling problems in higher vs. lower income groups. Specifically, in that study, the relationship between pathological gambling and alcohol dependence was approximately threefold higher in middle vs. lower income groups and ninefold higher in higher vs. lower income groups (Welte et al., 2001). Findings from these studies raise the possibility that availability of “disposable income” may influence the relationship between problems with gambling and alcohol. As alcohol consumption has been shown to increase gambling (Kyngdon & Dickerson, 1999; Potenza, Steinberg, & Wu, 2005), it suggests that alcohol’s impact on gambling problems may be particularly relevant to middle/higher income groups, although this possibility warrants further investigation. Additional research is needed to investigate whether this relationship may be linked to specific forms of gambling or gambling venues (e.g., to casinos or bars, environments in which alcohol may be readily available and sometimes provided for free to individuals who are gambling). Other factors that have been linked to gambling problems also warrant further investigation; for example, neighborhood disadvantage has been linked to gambling problems in different ways than to alcohol-use problems despite their co-occurrence (Barnes, Welte, Tidwell, & Hoffman, 2013). Future studies might also consider the addition of genetic assessments given that gambling and alcohol-use disorders are linked by both shared environmental and genetic factors (Slutske et al., 2000).

This study has multiple limitations including the cross-sectional nature, which precludes causal inferences, self-report information which may be subject to recall bias, and the relatively small proportion of individuals with pathological gambling that prompted the PPG grouping. Nonetheless, strengths of the study include the large, representative sample and the assessment of formal DSM-based diagnoses, albeit based on DSM-IV rather than DSM-5 criteria.

In conclusion, these analyses of the NESARC data suggest that problem-gambling severity is associated with psychopathology across income groups. As such, public health considerations with respect to lessening the relationship between problem-gambling severity and psychopathology should include those targeting both lower income and higher income groups. The finding of a stronger relationship between PPG and alcohol abuse/dependence among middle/higher income respondents as compared to lower income respondents suggests the need for further investigation into this relationship, with prevention and policy interventions warranting consideration based on the findings.

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grand rounds, CME events, and other clinical or scientific venues; and has generated books or book chapters for publishers of mental health texts.

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