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The Shorter PROMIS Questionnaire and the Internet Addiction Scale in the assessment of multiple addictions in a high-school population: prevalence and related disability.

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OBJECTIVE: Taking into account the importance of act prevention on the development of addictions, we assessed the presence of multiple addictions in an adolescent high-school population, also assessing the prevalence of Internet abuse and the impact on disability. **INTRODUCTION:** Adolescence seems to be a critical period of addiction vulnerability, based on social but also neurobiological factors. The earlier onset of behavioral/substance dependence seems to predict greater addiction severity, morbidity, and multiple addictive disorders. **METHODS:** Data were collected from a sample of 275 students in Florence, Italy, high schools through surveys distributed in classes. The sample had an average age of 16.67+/-1.85 years (52.4% males, 47.6% females). To assess multiple addiction we used the 16 subscales of the Shorter PROMIS Questionnaire, to assess Internet addiction prevalence we used the Internet Addiction Scale, and to quantify disability symptoms, we used the Sheehan Disability Scale. **RESULTS:** Caffeine abuse, sex, relationship submissive, gambling, food starving, and food bingeing have raised highest scores. 5.4% of the students were found to be Internet addicted similar to other countries. Disability seemed strongly correlated to the subscale of alcohol, gambling, sex, tobacco, food starving and food bingeing, shopping, exercise, and Internet addiction. Gambling, sex, caffeine abuse, compulsive help dominant, work, Internet addiction, relationship dominant, and relationship submissive in this sample were strongly related to substance dependence. **CONCLUSION:** Level of concerns unexpected compared to the level reported in other countries for the behavioral compulsions, have been highlighted. Behavioral addictions are multiple, a source of disability, and they are related to substance abuse. It has yet to be clarified if they are a temporary phenomenon occurring in adolescents or if they are a stable trait, accounting as marker for the development of substance abuse.

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2: [CNS Spectr.](#) 2006 Dec;11(12):956-64.
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Serotonin dysfunction in pathological gamblers: increased prolactin response to oral m-CPP versus placebo.

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OBJECTIVE: Acute administration of the partial serotonin (5-HT) agonist meta-

chlorophenylpiperazine (m-CPP), that is used also as a street drug, has been reported to induce a "high" and craving response in various impulsive and substance addiction disorders. Introduction: To clarify altered 5-HT metabolism in pathological gamblers and to explore the specific role of serotonergic system in non-substance addictions, we assessed behavioral ("high" and "craving") and neuroendocrine (prolactin and cortisol) responses to an oral single dose of m-CPP and placebo in pathological gamblers and matched controls. Moreover, the relationship between neuroendocrine outcome and clinical severity has been assessed. METHOD: Twenty-six pathological gamblers and 26 healthy control subjects enter a double-blind, placebo-controlled-crossed administration of orally dose m-CPP 0.5 mg/kg. Outcome measures included prolactin and cortisol levels, gambling severity, mood, craving and "high" scales. RESULTS: Pathological gamblers had significantly increased prolactin response compared to controls at 180 minutes and at 210 minutes post-administration. Greater pathological gamblers severity correlated with increased neuroendocrine responsiveness to m-CCP, suggesting greater 5-HT dysregulation. Pathological gambling patients had a significantly increased "high" sensation after m-CPP administration compared with control. CONCLUSION: These results provide additional evidence for 5-HT disturbance in pathological gamblers and they support the hypotheses that the role of the 5-HT dysfunction related to the experience of "high" might represent the pathway that leads to dyscontrolled behavior in pathological gamblers. Furthermore, the "high" feeling induced by m-CPP in pathological subjects may represent a marker of vulnerability to both behavioral and substance addictions.

Publication Types:

- [Randomized Controlled Trial](#)

PMID: 17146409 [PubMed - indexed for MEDLINE]

3: [J Gambl Stud](#). 2005 Winter;21(4):431-43.

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Reliability and validity of the pathological gambling adaptation of the Yale-Brown Obsessive-Compulsive Scale (PG-YBOCS).

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The Yale Brown Obsessive Compulsive Scale adapted for Pathological Gambling (PG-YBOCS) was developed to measure the severity and change in severity of pathological gambling symptoms. The PG-YBOCS is a 10-item clinician-administered questionnaire that measures the severity of PG over a recent time interval (usually within the past one/two week(s)). In order to assess and validate the scale, it was administered to 337 subjects: 188 pathological gamblers and 149 healthy controls. Internal consistency and correlations between individual items and total score were assessed for various permutations of the sample. Other scales were administered to assess convergent, discriminant and content validity. Sensitivity to change was evaluated in treatment studies with fluvoxamine, lithium, and valproate. Each item was frequently endorsed across a range of severity. Good inter-rater reliability and internal consistency were obtained. The PG-YBOCS showed high

validity and reliability for total score, item-total correlations, and for each subscale (Thoughts/Urges and Behavior). PG-YBOCS scores correlated with global severity and South Oaks Gambling Screen (SOGS) scores. The scale was also sensitive to change in pathological gambling severity. PG-YBOCS thus appears to be a reliable and valid measure of pathological gambling severity, and can be regarded as an important tool for clinicians and researchers treating pathological gamblers.

Publication Types:

- [Comparative Study](#)
- [Research Support, N.I.H., Extramural](#)
- [Research Support, Non-U.S. Gov't](#)

PMID: 16311876 [PubMed - indexed for MEDLINE]

4: [World J Biol Psychiatry](#). 2005;6(2):113-20.

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Imaging monetary reward in pathological gamblers.

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We acquired two 18F-deoxyglucose positron emission tomography (PET) scans on seven unmedicated pathological gamblers, at least 7 days apart. Following an injection of 5 mCi FDG, subjects carried out a computer blackjack task for 35 min under two different reward conditions: monetary reward and computer game points only. Relative FDG metabolic rate was obtained from regions of interest in the prefrontal cortex, cingulate, striatum and visual cortex. Monetary reward blackjack was associated with significantly higher relative metabolic rate in the primary visual cortex (Brodmann area 17), the cingulate gyrus (Brodmann area 24), the putamen and prefrontal areas 47 and 10, compared to blackjack playing for points only. No area tested showed a significant decrease. This pattern suggests heightened limbic and sensory activation in the gambling for money condition with increased emotional valence and greater risk and reward, and confirms the salience of monetary reward in the development of pathological gambling.

Publication Types:

- [Research Support, N.I.H., Extramural](#)
- [Research Support, U.S. Gov't, P.H.S.](#)

PMID: 16156484 [PubMed - indexed for MEDLINE]

5: [J Gambl Stud](#). 2005 Spring;21(1):99-110.

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Pharmacological treatments of pathological gambling.

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Medication treatment studies have demonstrated short-term efficacy of various SRIs, opioid antagonists, and mood stabilizers in sub-samples of adult treatment seeking pathological gamblers. Pathological gambling is frequently comorbid with bipolar spectrum disorders, substance abuse/dependence, and attention-deficit/hyperactivity disorder (ADHD), and comorbidity may influence treatment response in pathological gambling. This review focuses on recent research examining the treatment of pathological gambling and highlights methodological challenges for future studies.

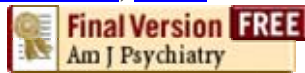
Publication Types:

- [Review](#)

PMID: 15789195 [PubMed - indexed for MEDLINE]

6: [Am J Psychiatry](#). 2005 Jan;162(1):137-45.

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Comment in:

- [Evid Based Ment Health](#). 2005 Aug;8(3):80.

Does sustained-release lithium reduce impulsive gambling and affective instability versus placebo in pathological gamblers with bipolar spectrum disorders?

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OBJECTIVE: Selective serotonin reuptake inhibitors may be effective for some patients with pathological gambling, but those with comorbid conditions, such as bipolar spectrum disorders, may relapse during treatment. To the authors' knowledge, this is the first placebo-controlled treatment study in pathological gamblers with bipolar spectrum disorders; it compares sustained-release lithium carbonate to placebo. **METHOD:** Forty pathological gambling patients with bipolar spectrum disorders entered a 10-week randomized, double-blind, placebo-controlled treatment study of sustained-release lithium carbonate. Outcome measures included gambling severity, mood, anxiety, and impulsivity scales. **RESULTS:**

Pathological gambling patients with bipolar spectrum disorders significantly improved while taking sustained-release lithium carbonate compared to placebo on total pathological gambling scores on the Yale-Brown Obsessive Compulsive Scale, including both thoughts/urges and behavior, as well as on the Clinical Global Impression severity of pathological gambling scale. Affective instability (the Clinician-Administered Rating Scale for Mania score) was also lower in the group treated with sustained-release lithium carbonate compared to placebo. Ten (83%) of 12 completers were rated as responders in the sustained-release lithium group versus five (29%) of 17 in the placebo group. Of note, improvement in gambling severity was significantly correlated with improvement in mania ratings. CONCLUSIONS: Sustained-released lithium may be an effective treatment in reducing both gambling behavior and affective instability in pathological gamblers with bipolar spectrum disorder. This study highlights the need to identify subgroups of pathological gambling patients with bipolar spectrum conditions because this may have important treatment implications.

Publication Types:

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- [Research Support, U.S. Gov't, P.H.S.](#)

PMID: 15625212 [PubMed - indexed for MEDLINE]

7: [Curr Psychiatry Rep.](#) 2003 May;5(1):9-15.
[Related Articles](#), [Links](#)

Diagnosis and treatment of pathologic gambling.

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Pathologic gambling (PG) is an impulse control disorder characterized by recurrent and maladaptive gambling behaviors that significantly disrupt the patient's functioning in the personal, familial, or vocational spheres. Pathologic gambling is estimated to currently affect 1% to 3.4% of the adult US population and is frequently comorbid with substance abuse or dependence, attention-deficit/hyperactivity disorder (ADHD), and affective disorders. Studies show evidence for the involvement of the serotonergic, noradrenergic, and dopaminergic systems in the etiology of PG. Medication treatment studies performed in PG patients demonstrated the short-term efficacy of various serotonin reuptake inhibitors, opioid antagonists, and mood stabilizers in a subsample of adult pathologic gamblers who seek treatment. This review focuses on recent research examining the neurobiology and treatment of PG.

Publication Types:

- [Review](#)

PMID: 12685996 [PubMed - indexed for MEDLINE]

□ **8:** [J Clin Psychiatry](#). 2002 Nov;63(11):1034-9.

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Nefazodone treatment of pathological gambling: a prospective open-label controlled trial.

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BACKGROUND: Pathological gambling is a disabling and highly prevalent impulse-control disorder not otherwise specified (NOS). According to the hypothesis of abnormal serotonin function in the pathophysiology of poor impulse control and pathological gambling, we assessed the efficacy and tolerability of nefazodone, a 5-HT antagonist reported to be effective in other impulse-control disorders NOS, in the treatment of pathological gambling. **METHOD:** Fourteen outpatients who met DSM-IV criteria for pathological gambling were enrolled in a prospective 8-week open-label oral nefazodone trial. Nefazodone was initiated at 50 mg/day and titrated upward to a maximum of 500 mg/day based on patient's response and side effects, with a minimum daily dose of 100 mg. Improvement in gambling was assessed via the pathological gambling modifications of the Yale-Brown Obsessive Compulsive Scale (PG-YBOCS), the Clinical Global Impressions-Improvement scale (PG-CGI-I), and self-rated gambling scales. Response was defined a priori as both a 25% reduction in PG-YBOCS score and a score of 1 (very much improved) or 2 (much improved) on the PG-CGI-I scale. **RESULTS:** Twelve subjects completed the study, and 2 subjects were early dropouts who did not receive the minimum required dose. Significant improvements were noted in all gambling outcome measures, as well as in depression and anxiety ratings (which did not significantly correlate with gambling reduction). Nine (75%) of 12 patients were rated as responders according to a priori criteria. Side effects (dry mouth and sedation) of moderate severity occurred in 4 subjects. **CONCLUSION:** These preliminary results suggest that nefazodone may be effective in reducing symptoms of pathological gambling and is well tolerated.

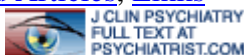
Publication Types:

- [Clinical Trial](#)
- [Research Support, Non-U.S. Gov't](#)

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□ **9:** [J Clin Psychiatry](#). 2002 Jul;63(7):559-64.

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Lithium and valproate treatment of pathological gambling: a randomized single-blind study.

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OBJECTIVE: The aim of the present study was to evaluate the efficacy and safety of lithium and valproate in nonbipolar pathological gamblers. **METHOD:** Forty-two subjects with DSM-IV-defined pathological gambling entered a 14-week single-blind trial with lithium (N = 23) or valproate (N = 19). A total of 15 subjects on lithium treatment and 16 patients on valproate treatment completed the 14-week protocol. **RESULTS:** At the end of the 14-week treatment period, both the lithium and the valproate groups showed significant ($p < .01$) improvement in mean score on the Yale-Brown Obsessive Compulsive Scale modified for pathological gambling. This improvement did not significantly differ between groups. Fourteen (60.9%) of the 23 patients taking lithium and 13 (68.4%) of the 19 patients taking valproate were responders based on a Clinical Global Impressions-Improvement score of much or very much improved. **CONCLUSION:** Findings from the present study suggest the efficacy of both lithium carbonate and valproate in the treatment of pathological gambling. This is the first controlled trial of the efficacy of mood stabilizers in pathological gambling. A double-blind, placebo-controlled trial is required to confirm these findings.

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