Are Gambler’s with Substance Use Disorders Reliable Reporters of Their Gambling Behaviors?

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Presentation Aims

• To assess variation in the reliability of DSM-IV pathological gambling disorder (PGD) by substance use disorder (SUD) status

• To provide self-reported reasons for unreliability in PGD diagnosis

• To offer implications/future directions
• High rates of co-occurring disorders are clearly evident among users of illegal substances (Compton, Thomas, Conway, Culliver, 2005).

Substance abusers are at increased risk for gambling problems (National Research Council, 1999).
Background: Problem Gambling/PGD & SUD Comorbidity

Among substance abusers:
Gambling problems = 22%
Pathological Gambling Disorder (PGD) = 11%
(Cunningham-Williams, Cottler, Compton, Spitznagel, Ben Abdallah, J Gambling Studies 2001).

Among those with PGD:
NESARC national study[1] rates of SUD:
- Drugs: 38.1%
- Nicotine: 60.4%
- Alcohol: 73.2%
Background: Issues in Nosology

Growing body of recent work:

- **Focusing on Pathological Gambling Disorder (PGD) criteria:**
  Examining whether current criteria truly captures the disorder,

Yet a dearth in studies assessing criteria’s applicability to vulnerable populations and reasons for misclassification of PGD.
Background: Issues in Nosology

- In order to effectively identify and screen for PGD among those who abuse substances, it is critical to understand ways to best assess for PGD.

- Critical to appropriate screening and treatment of gamblers with and without SUD is reliable self-reports of gambling symptoms.

- Thus, we aim to examine the assessment of PGD among gamblers who abuse and/or are dependent upon substances.
Background: Issues in Nosology

Growing body of recent work:

- Asking us to rethink the Universalist approach to the psychiatric symptom-disorder relationship\(^1\)

- Movement toward a more purposeful analysis exploring whether current psychiatric criteria apply equally to certain groups\(^2-7\)

- **Focusing on Pathological Gambling Disorder (PGD) criteria:**
  Examining whether current criteria truly captures the disorder\(^8-12,\)

Yet a dearth of studies assessing criteria’s applicability to vulnerable populations and reasons for misclassification of PGD

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\(^1\) Algeria and McGuire 2003; \(^2\) Horton et al 2000; \(^3\) Compton et al 1996; \(^4\) Canino et al 1999; \(^5\) Hicks 2004; \(^6\) Robins & Regier 1991; \(^7\) Cooke et al 2001; \(^8\) Stinchfield 2003; \(^9\) Lesieur 1988; \(^10\) Fisher 2000; \(^11\) Beaudoin & Cox 1999; \(^12\) Toce, 2005 (presentation)
% Published Studies Using Various Assessments

- SOGS: 56.8%
- DIS: 25.4%
- MAGS: 11.1%
- Other DSM: 5.2%
- Other: 1.5%

Shaffer et al 1997
11 DEMOGRAPHIC ITEMS

21 DIAGNOSTIC ITEMS

14 NON-DIAGNOSTIC CONCEPTUAL DOMAINS

7 OBSERVATIONAL ITEMS

GAM® & C-GAM©

Cunningham-Williams, 2003
In order to examine the psychometric properties of the GAM©/C-GAM©…

We designed 2 studies:

GAMCO and GAPP

Funded by the National Institute on Drug Abuse of the National Institutes of Health - GAMCO: #DA 000430 and GAPP: #DA 015032
GAMCO/GAPP Reliability & Validity Protocols
NIDA #K01-04030 & #R01 -015042

Week 1: C- GAM© Test Interviews (n=315)
Concordance with SOGS (random order); GAM-DA; CES-D; DIS (Conduct/ASPD)

Randomization: GAMCO Key Informant Interviews (n=139)

Week 2: C- GAM © Re-Test Interviews (n=301)
Modified DIP/Debriefing Interviews

GAPP STUDY
Semi-structured Clinician C-GAM© Interviews w/timed probing (n=150)

Week 1 or Week 3 (random)

SCID-II Personality Disorder

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Sample Characteristics (n=299)

- Female (n=174)
- HS/GED+ (n=294)
- City Dweller (n=113)
- Liv Othrs (n=48)
- Married (n=113)
- Jobless (n=179)
- >25K (n=86)

- %Caucasian (n=225)
- %Afri-Amer/Other (n=87)
Methods: Analysis of Reliability

Kappa: Proportion of Agreement, corrected for chance. Varies from -1.0- +1.0

**Proportion of Agreement**

- Excellent = More than 0.75
- Good = 0.60 – 0.75
- Fair = 0.40 – 0.59
- Poor = Less than 0.40

Cohen 1960;
Fleiss & Cohen 1973
Answers the Question:

Is Reliability (agreement) statistically different for Gamblers with SUD versus Gamblers without SUD:

for gambling symptoms?

and

for DSM-IV PGD?

As operationalized by the C-GAM©
Sample: 4 Groups of Gamblers (n=290^)

Stratified by DSM-IV Substance Use Disorders*:

3) Alcohol Abuse/Dep only (n=22; 7.6%) - AA
4) Drug Abuse/Dep only – (n=44; 15.2%) - DA
5) Both Abuse/Dep (n=30; 10.34%) - Both
6) Neither Abuse/Dep (n=194; 66.9%) – Neither

*As operationalized by the GAM-DA© administered at Time 1 only

^ Missing data = n=9
RESULTS:

Substance Use Disorder (SUD)
Variation: Gambling Symptoms
**DSM-IV Criteria:** Persistent & Recurrent maladaptive gambling indicated by at least 5/10 of the following:

**From DSM-III**
- legal problems
- relationship, job/school problems
- hiding losses
- financial bail-out
- **Criterion B:** Manic Episode exclusion

**From DSM-III-R**
- preoccupation
- tolerance
- restless/irritable if unable to gamble
- chasing losses
- trying to quit/cut down
- Gambling to escape
Mean # Gambling Symptoms - C-GAM©
Test Versus Retest: By SUD Status (n=299)

Test Mean=2.77
F=11.67; df=3; p=<.0001

ReTest Mean=2.44
F=16.41; df=3; P<.0001

*sig diff
% Positive by SUD STATUS: Gambling Symptoms

Test Interview

<table>
<thead>
<tr>
<th>Condition</th>
<th>AA</th>
<th>DA</th>
<th>Both</th>
<th>Neither</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoccupation</td>
<td>.86</td>
<td>.67</td>
<td>.80</td>
<td>.73</td>
<td>.74</td>
</tr>
<tr>
<td>Chasing Losses</td>
<td>.81</td>
<td>.76</td>
<td>.76</td>
<td>.67</td>
<td>.75</td>
</tr>
<tr>
<td>Escape (n=120)</td>
<td>.65</td>
<td>.82</td>
<td>.66</td>
<td>.72</td>
<td>.73</td>
</tr>
<tr>
<td>Can't cntl/Stop</td>
<td>.90</td>
<td>.62</td>
<td>.62</td>
<td>.67</td>
<td>.67</td>
</tr>
<tr>
<td>Restless/Irritable</td>
<td>.82</td>
<td>.82</td>
<td>.66</td>
<td>.72</td>
<td>.72</td>
</tr>
<tr>
<td>Tolerance (n=64)</td>
<td>.41</td>
<td>.71</td>
<td>.66</td>
<td>.72</td>
<td>.72</td>
</tr>
</tbody>
</table>

Kappa values:

- AA: .86
- DA: .67
- Both: .80
- Neither: .73

Overall: .74
% Positive by SUD STATUS: Gambling Symptoms
Test Interview – Continued

- AA k=.88
- DA k=.95
- Both k=.79
- Neither k=.88
- Overall k=0.90

- AA k=.91
- DA k=.86
- Both k=.60
- Neither k=.80
- Overall k=0.82

- AA k=.42
- DA k=.74
- Both k=.66
- Neither k=.79
- Overall k=0.73

- AA k=.68
- DA k=.94
- Both k=.60
- Neither k=.84
- Overall k=0.86

- AA k=.69
- DA k=.80
- Both k=.59
- Neither k=.77
- Overall k=0.74

- AA k=1.0
- DA k=.88
- Both k=.76
- Neither k=.75
- Overall k=0.81

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% Positive by SUD STATUS: Gambling Symptoms
Re-Test Interview

- Preoccupation (n=74)
- Chasing Losses (n=98)
- Escape (n=120)
- Can't cntl/Stop (n=85)
- Restless/Irritable (n=73)
- Tolerance (n=64)

- %AA
- %DA
- %Both
- %Neither

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% Positive by SUD STATUS: Gambling Symptoms
Re-Test Interview (Cont’d)

- Bail Out (n=50)
- Lying/Deceit (n=85)
- Interfere (n=53)
- Relat. Prob (n=60)
- Give Up/Reduce (n=53)
- illegal acts (n=17)

Legend:
- %AA
- %DA
- %Both
- %Neither
RESULTS:

Variation by SUD Status: Pathological Gambling Disorder
DSM-IV PGD: Overall Diagnostic Classification
Prevalence and Reliability (n=299)

Overall PGD: $k=0.78$ (0.72, 0.84)

% discordant=18.4% (n=55)
RELIABILITY BY SUD STATUS

DSM-IV PGD: Overall Diagnostic Classification
Prevalence (T1) and Test-Retest Reliability (n=299)

By SUD Status Overall PGD:

k=0.74 (0.59,0.76)

K=0.74
K=0.61
K=0.76
K=1.0

By SUD Status Overall PGD:

- AA
- DA
- Both
- Neither

- PGD
- Sub-Threshold
- Non-Problem
Conditional Prevalence of Activity-Specific Diagnosis – C-GAM®
and Test-ReTest Reliability by SUD Status (n=299)

<table>
<thead>
<tr>
<th>Activity</th>
<th>%PGD</th>
<th>%SubThreshold</th>
<th>%Non-Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lottery</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>VDTs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craps</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

K values:
- AA -k=.87
- DA- k=.76
- Both k=.80
- Neither k=.71

- AA -k=.46
- DA- k=.51
- Both k=.51
- Neither k=.47

- AA -k=.66
- DA- k=.60
- Both k=.48
- Neither k=.64

- AA -k=.70
- DA- k=.83
- Both k=.65
- Neither k=.80

- AA -k=.85
- DA- k=.77
- Both k=.46
- Neither k=.76

K values:
- Slots = 0.75
- Lottery = 0.49
- VDTs = 0.62
- Cards = 0.78
- Craps = 0.75

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Conditional Prevalence of Activity-Specific Diagnosis – C-GAM© 
and Test-ReTest Reliability (n=299)

K=0.63

K=0.54

K=0.74

K=0.69

K=0.66

Market Betting: n too small to calculate reliability
Variation in Reports of Gambling Symptoms: Self-Reported Reasons for Inconsistent Responses
Self-Reported Reasons for Discrepancies: **Gambling Symptoms**

(n=136 discrepancies between T1 and T2)

- Misunderstood (n=92)
- Inattention (n=17)
- Blamed Rater (n=7)
- Didn’t Know (n=6)
- All other reasons (n=14)

Race/Ethnicity: n.s.
By HH income & Other Demographics – n.s.
By Diagnostic Classification – n.s.

X2=5.04;df=8;p=0.7529)-n.s.
Summary

DSM-IV PGD (as operationalized by the C-GAM):

- **Overall:**
  Excellent test-retest reliability overall (k=0.74)

  For Substance Abusers:
  - Alcohol k=1.0; Drugs k=0.74; Both k=0.61
  For Non-Abusers: k=0.76

- **Activity-specific diagnoses:** Applies equally-well by SUD status

- **Self-Reported Reasons for Unreliability:**
  Misunderstood the question
Implications/Future Directions

Looking toward DSM-V:

• C-GAM may be useful as it provides important and information on the symptoms that comprise current criteria (across all nosologies)

• While an activity-specific diagnosis is not yet officially recognized in the current criteria, the C-GAM data may be informative in making inroads into this unchartered area in problem gambling research

• The C-GAM may be a useful tool in the social work armamentarium aimed at reducing PGD among gamblers who abuse/are dependent upon substances
Implications/Future Directions (cont’d)

• As the kappa statistic is affected by the base rate of the disorder and says nothing about validity, it is important to triangulate these data with additional psychometric data collected in the GAMCO/GAPP protocols.

• There are likely additional confounding variables that will help to shed light on SUD variation in reliability (e.g. age, HH income, etc).

• Examine further treating PGD as a multi-dimensional (rather than categorical) construct assessing whether there are different cut-points by SUD status.
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- GAMCO and GAPP Participants

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