



Enhancing the Effectiveness and Reach of Evidence Based Treatments

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Our Research Sites



Tolan Park Building: New Home to Department of
Psychiatry and Behavioral Neurosciences

Wayne State School of Medicine

Detroit, Michigan



Problem Gambling Services

Windsor Regional Hospital

Windsor, Ontario



Casinos in our Region



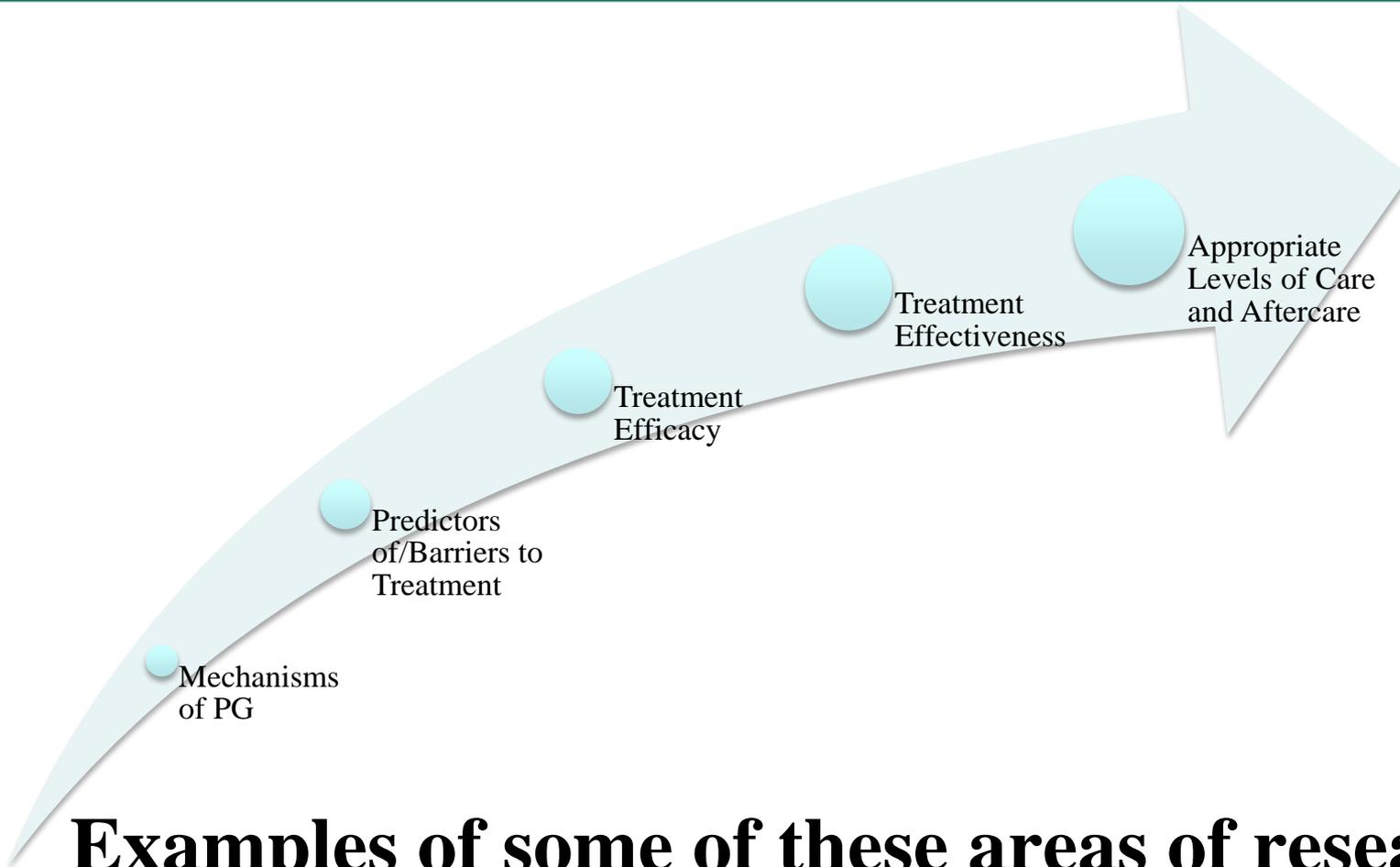


Clinical Vs. Research

- Theme: Research to Practice
- Often a view that research findings aren't very relevant to clinical practice
- Need a Translational approach
 - “Bench-to-bedside”
 - Translation of basic/clinical science into practical applications with the aim of improving the healthcare of people



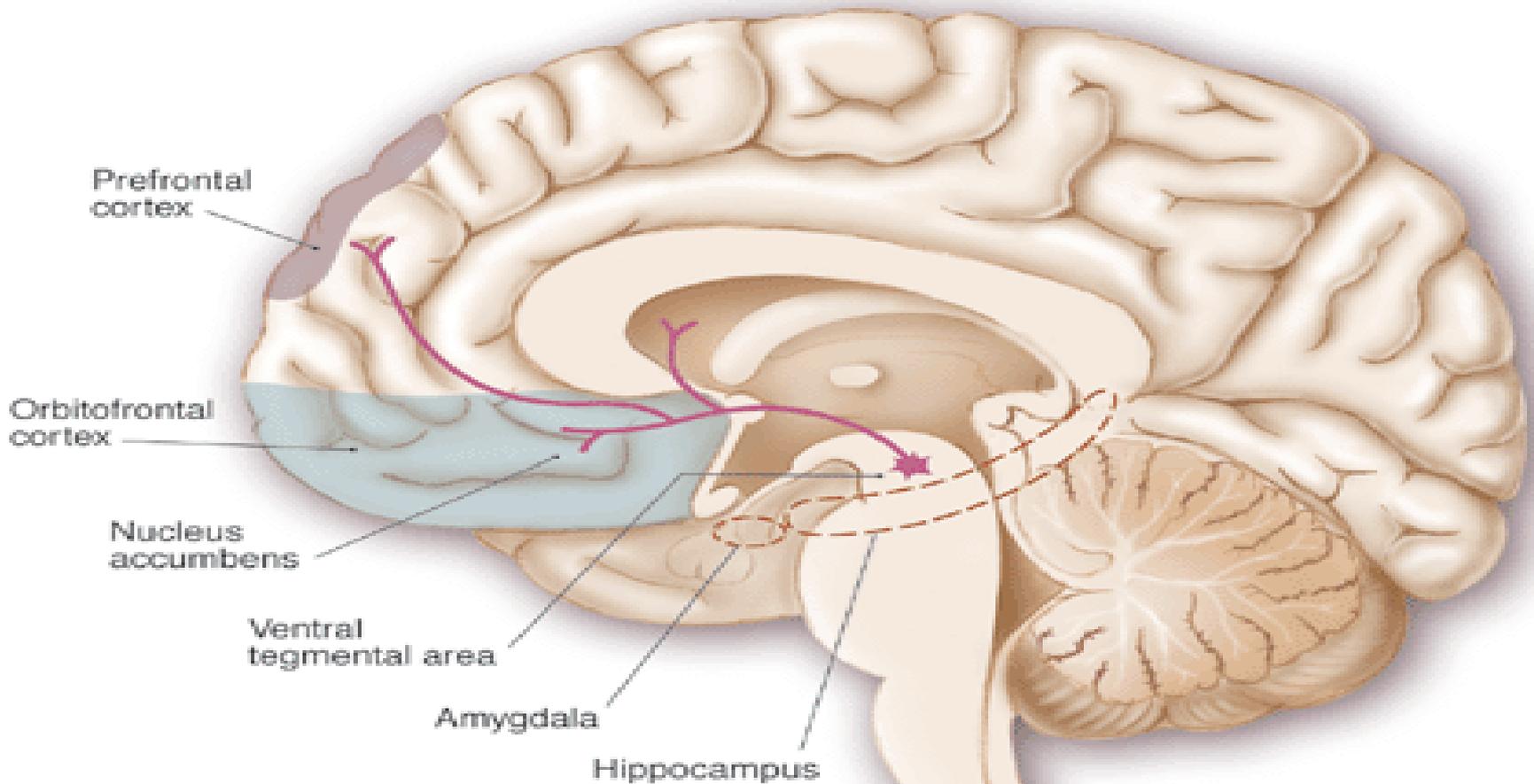
Ways Research Can Inform Clinical Practice



Examples of some of these areas of research, and how they will inform clinical practice

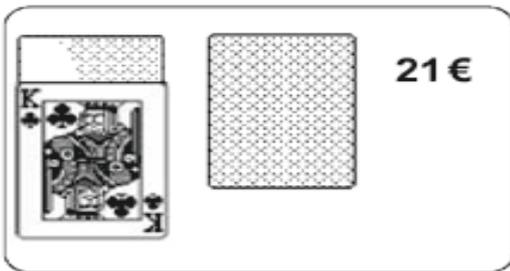


Understanding Mechanisms Underlying Pathological Gambling

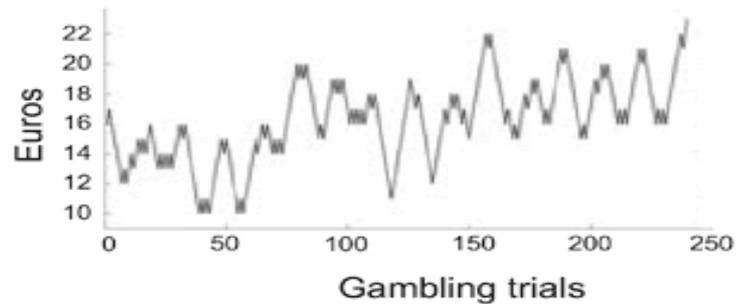


Wired. Dopamine projections link the ventral tegmental area, nucleus accumbens, and parts of the frontal lobe in a reward circuit that even nondrug compulsions may alter.

a

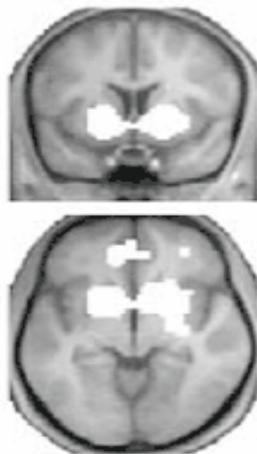


b

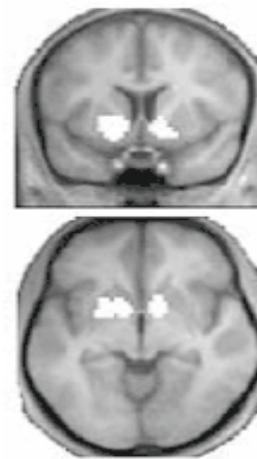


Overall
↑ ventral striatum while winning relative to losing PGs

c



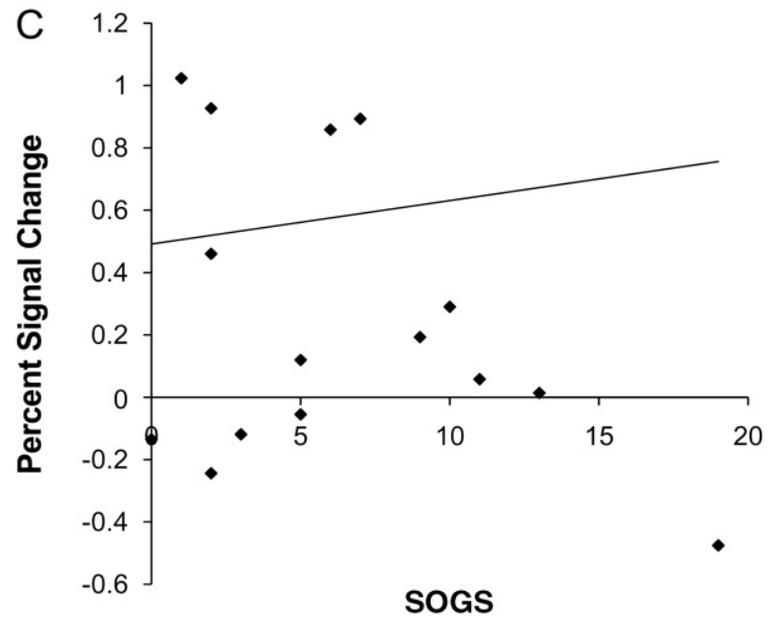
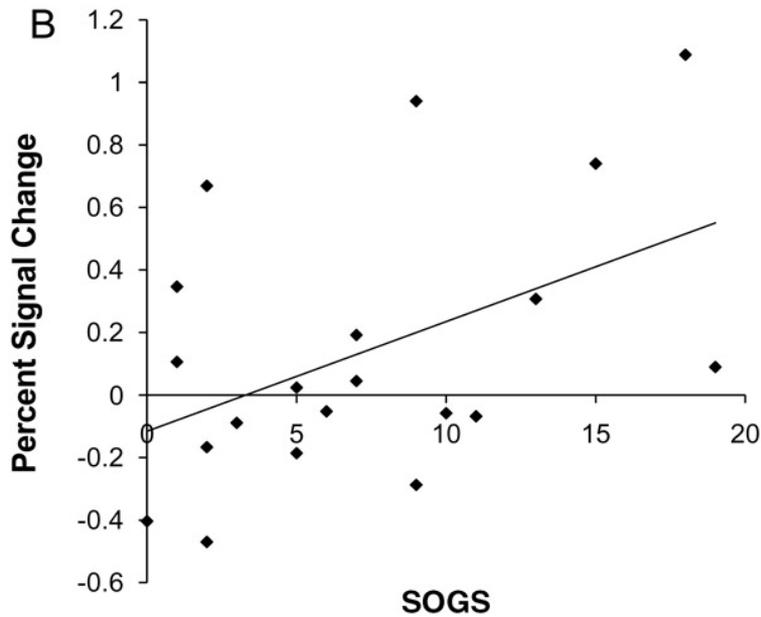
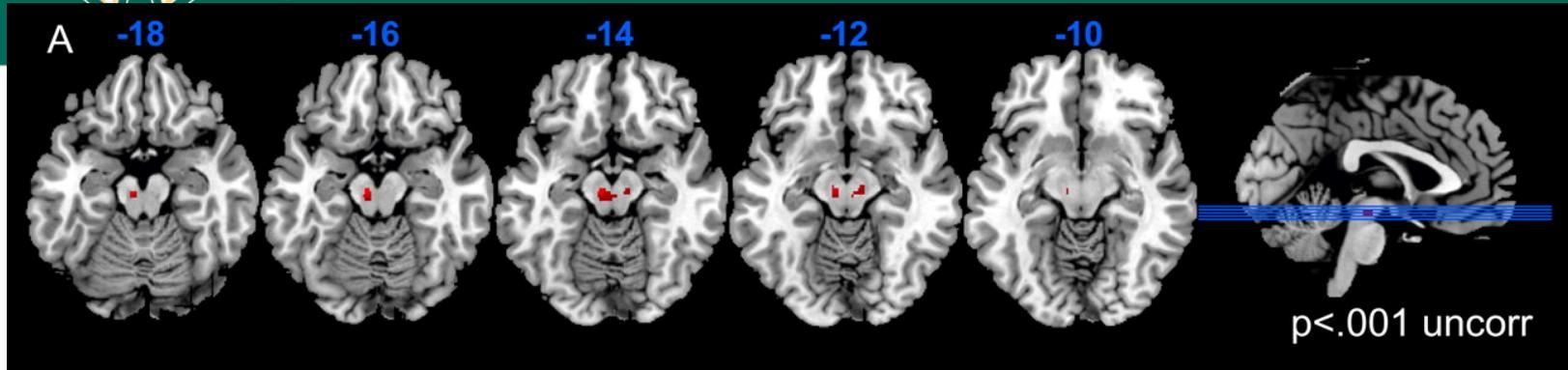
d



↓ Ventral striatal and ventromedial prefrontal activation associated with gambling severity



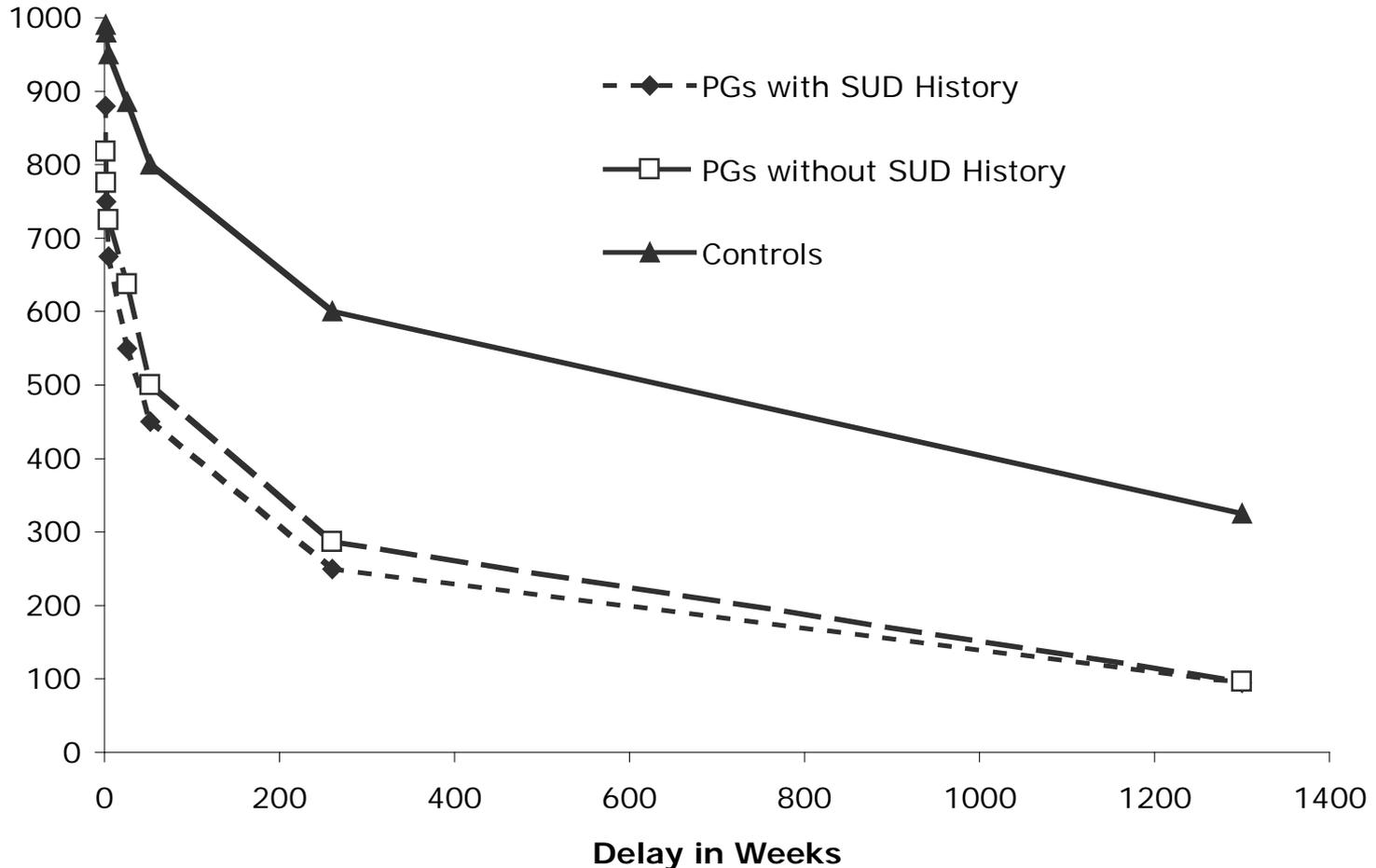
A, Effect of gambling severity (South Oaks Gambling Screen; SOGS) on near-miss-related activation, within the ROI mask (displayed at $p < 0.001$ uncorrected, $k = 10$).



Chase H W , Clark L J. Neurosci. 2010;30:6180-6187



Delay Discounting Task





fMRI Pilot Study

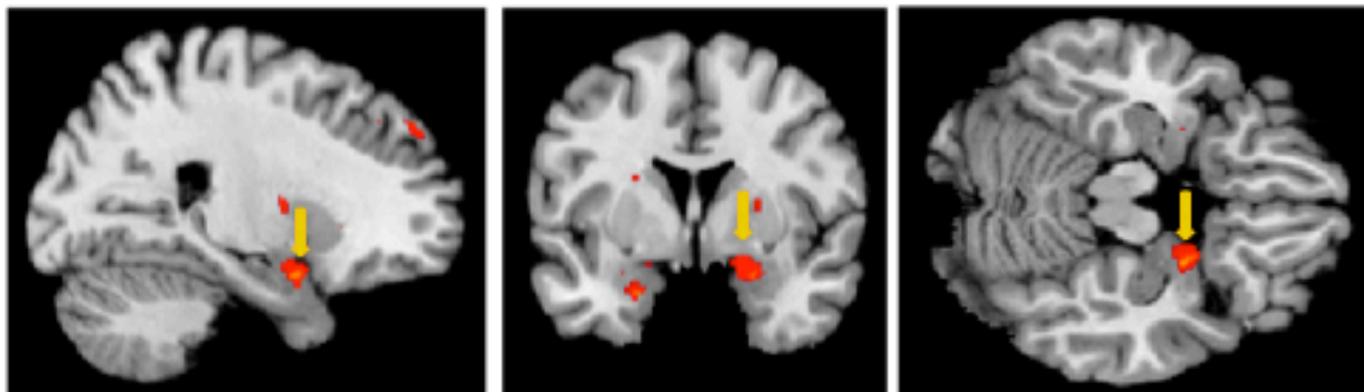
- $n = 6$ pathological gamblers; $n = 5$ controls
- Plan to expand
- Participants complete a delay discounting task in the scanner
- Like delayed gratification
- Extent to which individual selects a smaller immediate reward over a larger, delayed one



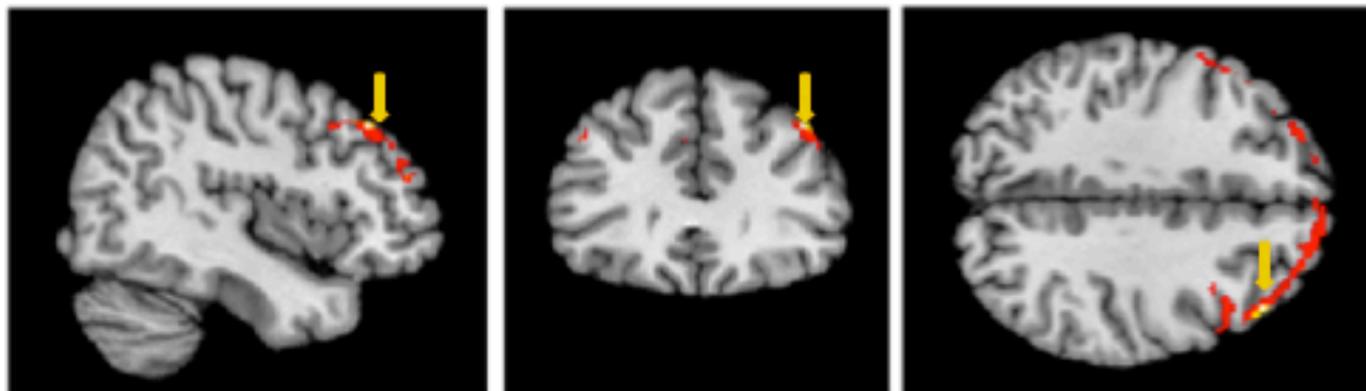
Types of responses

- Selected immediate reward over delayed reward – Expect activation in striatal/limbic areas associated with reward processing and emotion
- Select delayed reward over immediate reward – Expect activation in the frontal areas associated with planning and exec function
- More difficult choices – expect greater activation in all areas

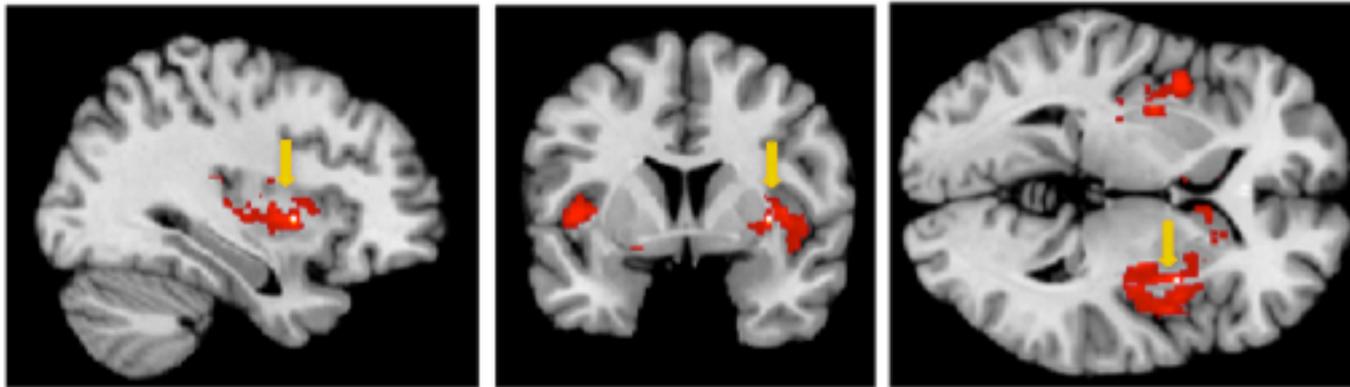
- PGs evidenced significant ($p < .001$, voxel level) amygdala and dorsal prefrontal activity (Amygdala: $x=24, y=3, z=-18, t = 7.53, k_E=138$; dPFC: $x=44, y=32, z=40, t = 14.3, k_E=650$) when they **chose *delayed* reward**.



Amygdala

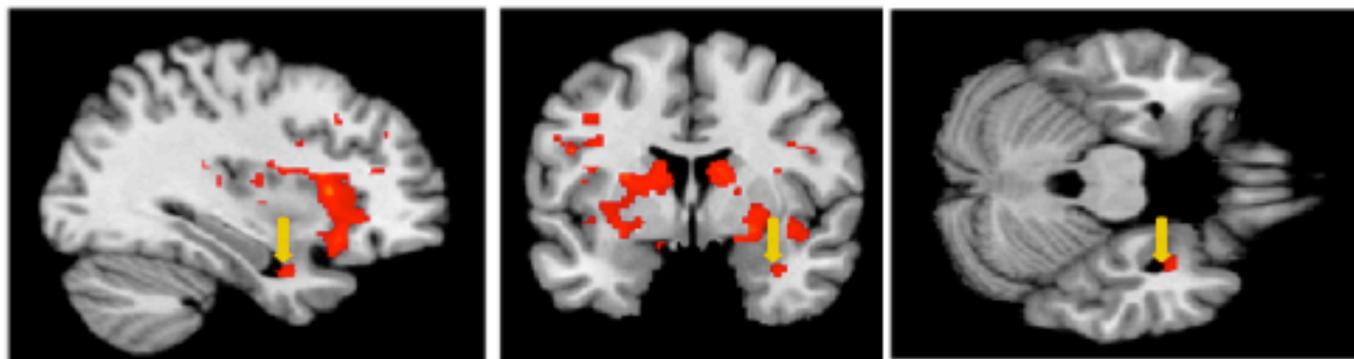


- PGs evidenced significantly striatal (Putamen: $x=34$, $y=4$, $z=1$, $t=27.35$, $k_E = 1868$, $p < 0.001$; and Insula: $x=-38$, $y=-4$, $z=4$, $t=17.96$, $k_E = 1000$, $p < 0.001$) activity when they **chose *immediate* reward**.

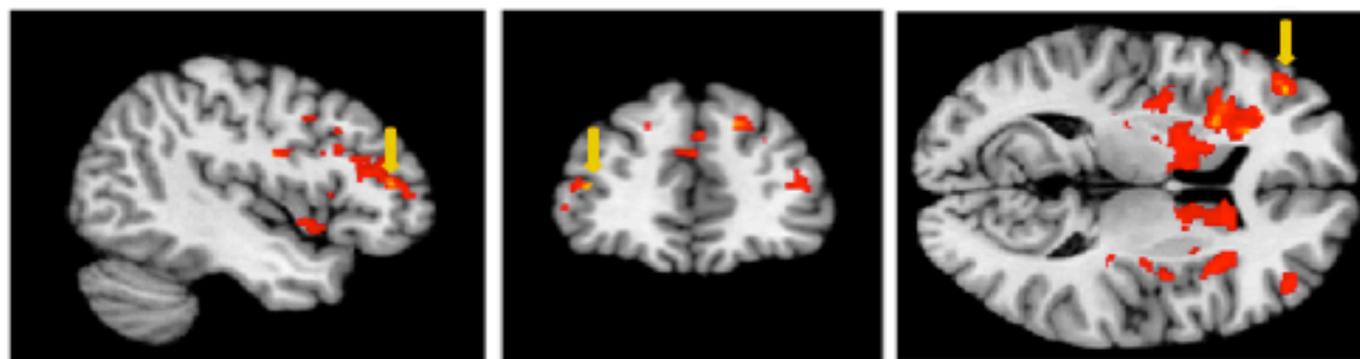


Putamen and Insula

- Amygdala, dorsal prefrontal, caudate and insula activity associated with **more difficult choice behavior**
(Amygdala: $x=24, y=3, z=-18, t=4.49, k_E = 79, p < 0.009$;
dPFC: $x=-48, y=47, z=1, t=4.46, k_E = 585, p < 0.009$;
Caudate: $x=12, y=0, z=18, t=4.70, k_E = 806, p < 0.009$;
Insula: $x=-36, y=15, z=7, t=6.75, k_E = 1298, p < 0.001$).



Amygdala



Dorsal prefrontal cortex



Implications for Clinical Practice

- Problem gamblers process rewards in different ways
- They are impulsive, more likely to select immediate over delayed rewards
- Past research finds that reward processes are blunted in pathological gamblers relative to controls
- Implications for treatment – long term recovery goals



Who Goes to Treatment?



Disordered Gambling

Disordered gambling (inclusive of problem and pathological gambling) affects 2% to 5% of the general population.

Despite the large numbers and adverse consequences of disordered gambling, few pathological gamblers ever seek or receive services (National Research Council, 1999; Slutske, 2006; Suurvali et al.).



What can we learn from people who do and don't make initial contact?

Lessons from the State of
Michigan/NSO Help-line



Study Aims

We sought to understand the characteristics of problem gamblers calling the Michigan Problem Gambling Help-line. Our study aims were:

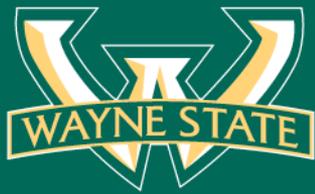
- 1) Determine the socio-economic and legal consequences of problem gambling among callers to the Michigan Problem Gambling Help-line
 - *Contacted within 2 weeks of helpline call*

- 2) Document the proportion of people seeking help from the gambling Help-line who did not enter formal treatment and the perceived and actual barriers they encountered
 - *Contacted at least 2 months following helpline call*



Demographic and gambling characteristics of helpline callers who did vs. did not attend treatment.

Variable	Initiators (N = 96)	Non-Initiators (N = 47)	<i>t</i> , <i>U</i> or χ^2	p value
Age M(SD)	50.2(11.1)	48.2(14.6)	<i>t</i> (139) = -.91	.37
Gender – Female N(%)	63.5(61)	53.2(25)	$\chi^2(1, N=143) = 1.41$.24
Race N(%)			$\chi^2(2, N=141) = .61$.74
European American	55(57.9)	24(52.2)		
African American	36(37.9)	19(41.3)		
Other	4(4.2)	3(6.5)		
Employed N(%)	49(51.0)	21(44.7)	$\chi^2(1, N=143) = .51$.48
Married N(%)	46(47.9)	18(38.3)	$\chi^2(1, N=143) = 1.18$.28
Education N(%)			$\chi^2(2, N=143) = 3.35$.19
Less than High School	6(6.3)	7(14.9)		
High School	28(29.2)	15(31.9)		
College or higher	62(64.6)	25(53.2)		



Demographic and gambling characteristics of helpline callers who did vs. did not attend treatment.

Variable	Initiators (N = 96)	Non-Initiators (N = 47)	<i>t</i> , <i>U</i> or χ^2	p value
Age of first gambling <i>M(SD)</i>	29.1(15.9)	33.6(21.7)	<i>t</i> (140) = 1.41	.16
Age of first problem gambling <i>M(SD)</i>	43.9(12.1)	45.0(19.0)	<i>t</i> (140) = .44	.66
Current gambling debt	\$3000(19903)	\$1000(14903)	<i>U</i> = 2636.0	.032
NODS – Lifetime <i>M(SD)</i>	7.3(2.4)	5.9(2.2)	<i>t</i> (141) = -3.51	.001
NODS – Past Year <i>M(SD)</i>	7.2(2.5)	5.7(2.1)	<i>t</i> (141) = -3.43	.001
URICA-G Readiness <i>M(SD)</i>	10.7(1.7)	9.3(1.8)	<i>t</i> (141) = -4.62	.001

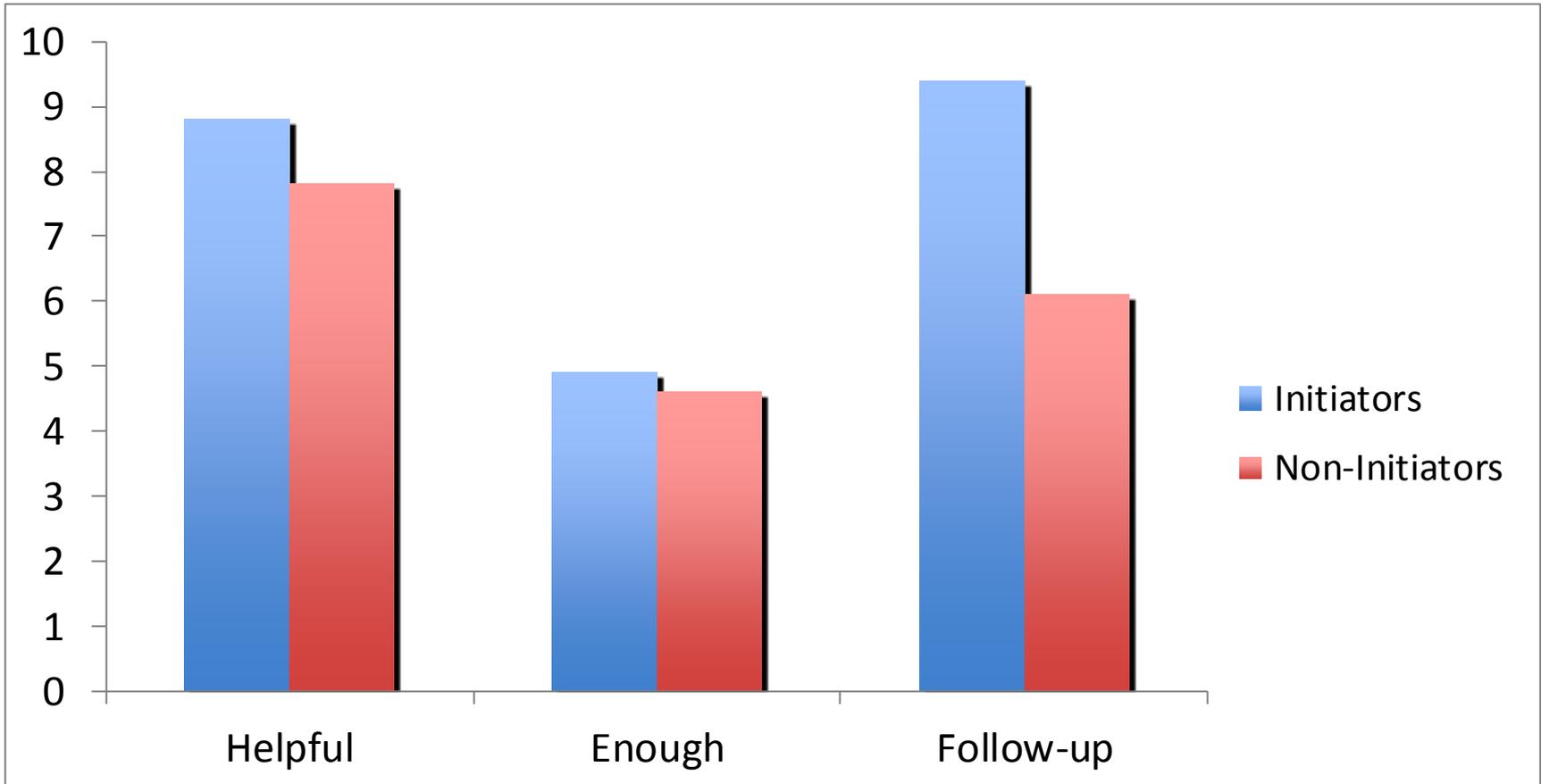


What did they think of the helpline call?

- Asked 3 Questions, on a scale of 1 to 10
 - ...how helpful was the counseling you received from the helpline?
 - ...rate the extent to which the counseling you received was enough (i.e., that you didn't need any more counseling for your gambling problems).
 - ...how likely are you to follow up on the treatment referral you received from the helpline?



Experience of help-line callers predicting treatment engagement



Ledgerwood et al., 2013, American Journal on Addictions



Multivariate Logistic Regression

Variables analyzed in bivariate logistic regression: **Financial** (debt, trouble paying bills); **Psychiatric** (anxiety, depression, suicide risk); **Substance problem** (alcohol; drugs, tobacco); **Family/social** (spousal conflict, fam. Violence/neglect); **Legal** (probation, arrest etc.); **Family hx** (alcohol/drugs, psychiatric, gambling); **Treatment hx** (Gambling, alcohol/drugs, psychiatric)

Variable	Odds Ratio	95% Confidence Interval	p value
Any Financial	3.59	1.28-10.07	.015
Any Family/Social	1.31	.58-2.95	.52
Any Legal	1.46	.59-3.61	.41
Any Treatment History	3.18	1.33-7.57	.009



What did and didn't predict?

- Did predict
 - Gambling Severity
 - Gambling Debt
 - Motivation to Change
 - Financial
 - Past Treatment for Gambling
 - Finding the Help-line Helpful
 - Intent to go to Treatment
 - Spousal Conflict
- Did not predict
 - Demographics
 - Age of gambling
 - Psychiatric
 - Substance Abuse
 - Family/Social
 - Family of Origin
 - Non-Gambling Treatment
 - Most Legal



Providing Appropriate Level of Care



Levels of Care

- Michigan offers state funded outpatient care
- Only 9 states offer higher levels of care, such as residential treatment
- Windsor Ontario has 6 residential beds and 2 IOP slots
- Could we support residential treatment for problem gambling in Michigan?



Levels of Care

- Current Project Designed to assess the need for residential and other higher levels of care in Michigan
- Partnership with MDCH-BSAAS and MAPG
- Plan to recruit up to 50 therapists and 150 current outpatients to complete surveys
- Based on American Society for Addiction Medicine (ASAM) criteria to assess appropriate level of care



Progress To Date...

- 37 Therapists have been contacted
 - 27 agreed to participate
 - 8 had no current gamblers
 - 1 refused
 - 15 remain to be contacted
- Identified 157 currently treated outpatients on their case loads
- Preliminary analysis on our first 50 outpatient clients (age 52; half women) and 62 therapist questionnaires



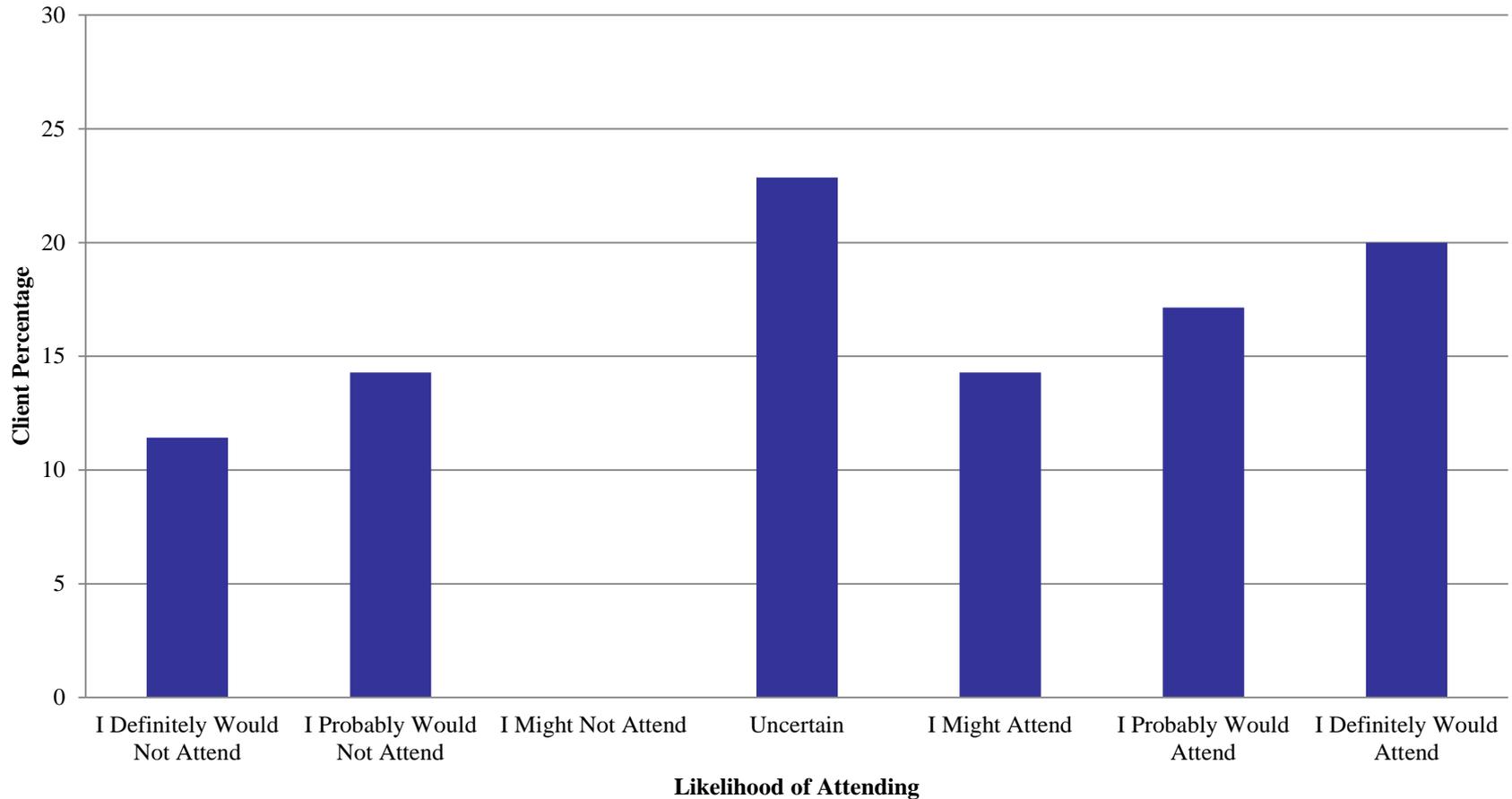
Residential

- If you were offered RESIDENTIAL TREATMENT – a live-in treatment where you would stay for up to a month and receive intensive treatment for your gambling – What is the likelihood that you would attend this treatment type?



Willingness to Attend Residential

Residential Treatment





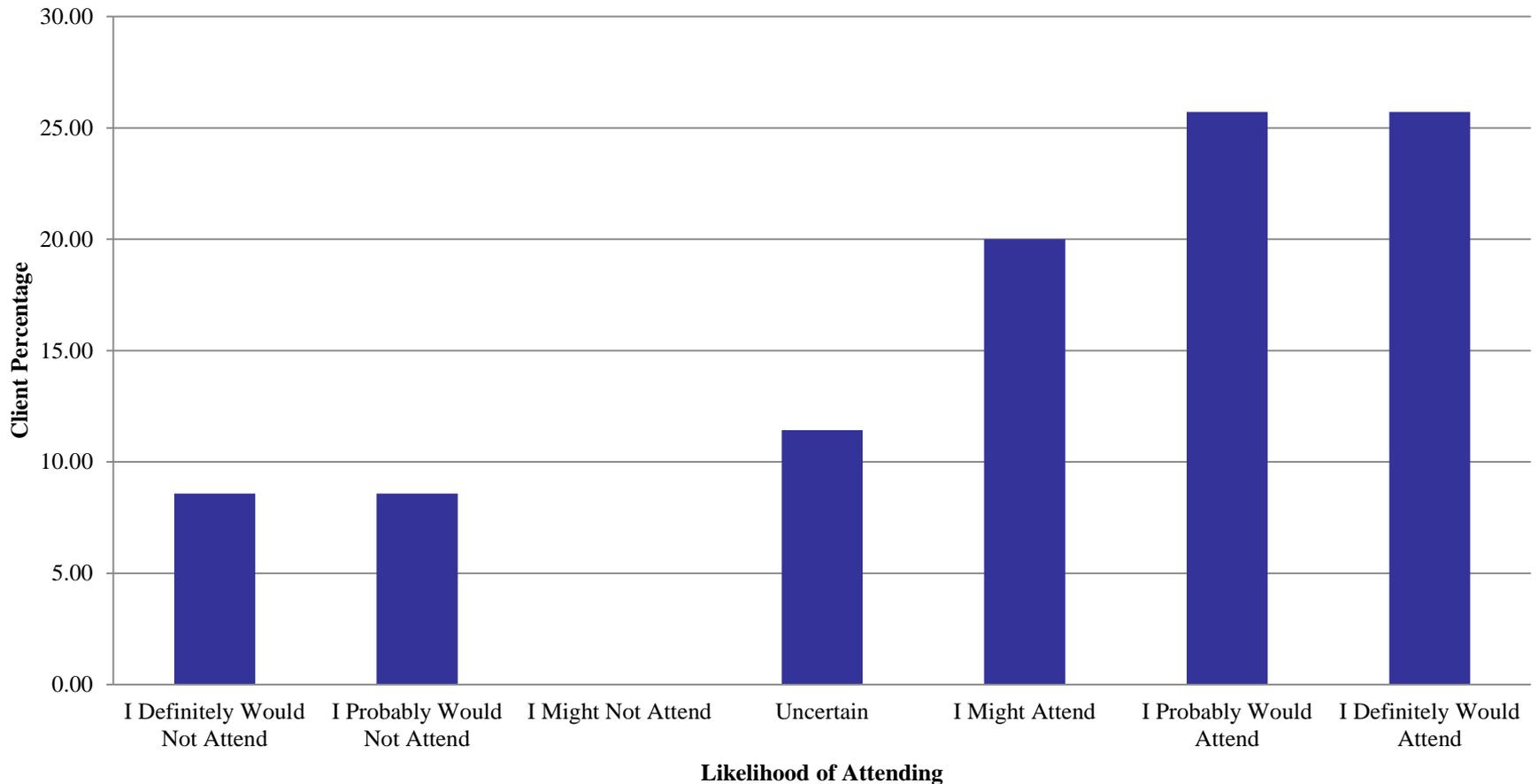
Intensive Outpatient

- If you were offered INTENSIVE OUTPATIENT TREATMENT – an outpatient treatment where you would attend for several hours (e.g., six hours) daily for a period of a few weeks – What is the likelihood that you would attend this treatment type? (Circle your response)



Willingness to Attend IOP

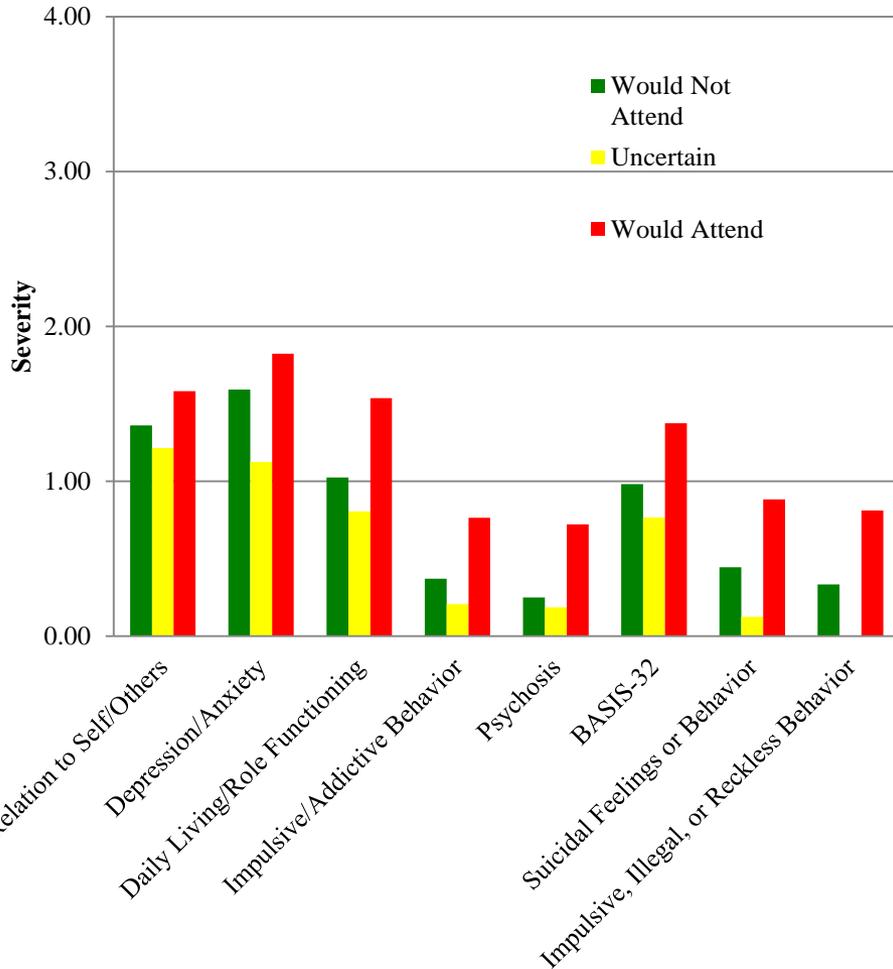
Intensive Outpatient Treatment



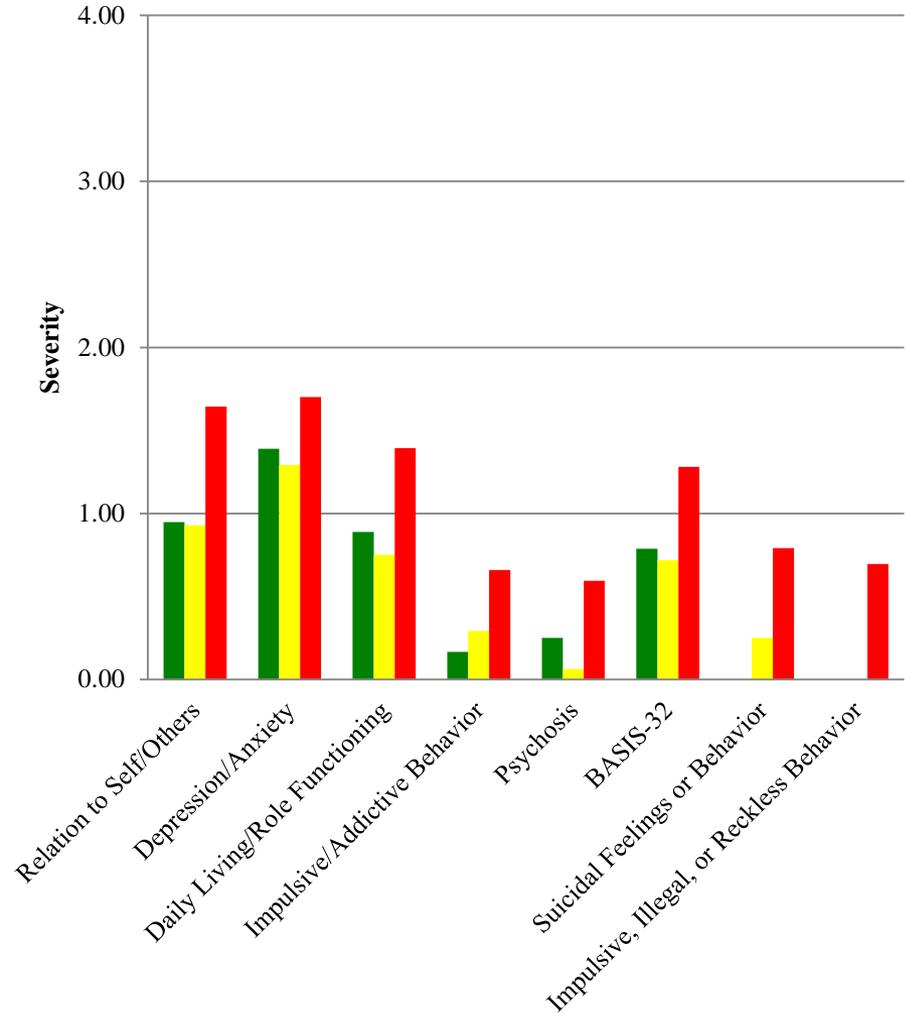


Basis-32 Scale Scores

Residential



Intensive Outpatient





ASAM Criteria

- 1. History of Treatment Failure:** Client's prior experiences with gambling treatment and/or Gamblers Anonymous were unsuccessful. If relevant, take into account previous experiences with other addiction treatment and other 12-step programs.
- 2. Co-Occurring Disorders:** Client has major depression or bipolar (Manic depressive) disorder, substance abuse or dependence, other addictive disorders, other significant disorders (medical, psychiatric) that will interfere with or make treatment more difficult.
- 3. Impulsivity:** Client has history of poor impulse control; Current highly impulsive behavior.
- 4. Social Support:** Client is lacking social support from friends, family, or others for recovery.
- 5. Suicidal Risk:** Client experiences significant suicidal ideation; Recent history of suicide attempts; Serious suicidal intent; Imminent threat for suicide



ASAM Criteria

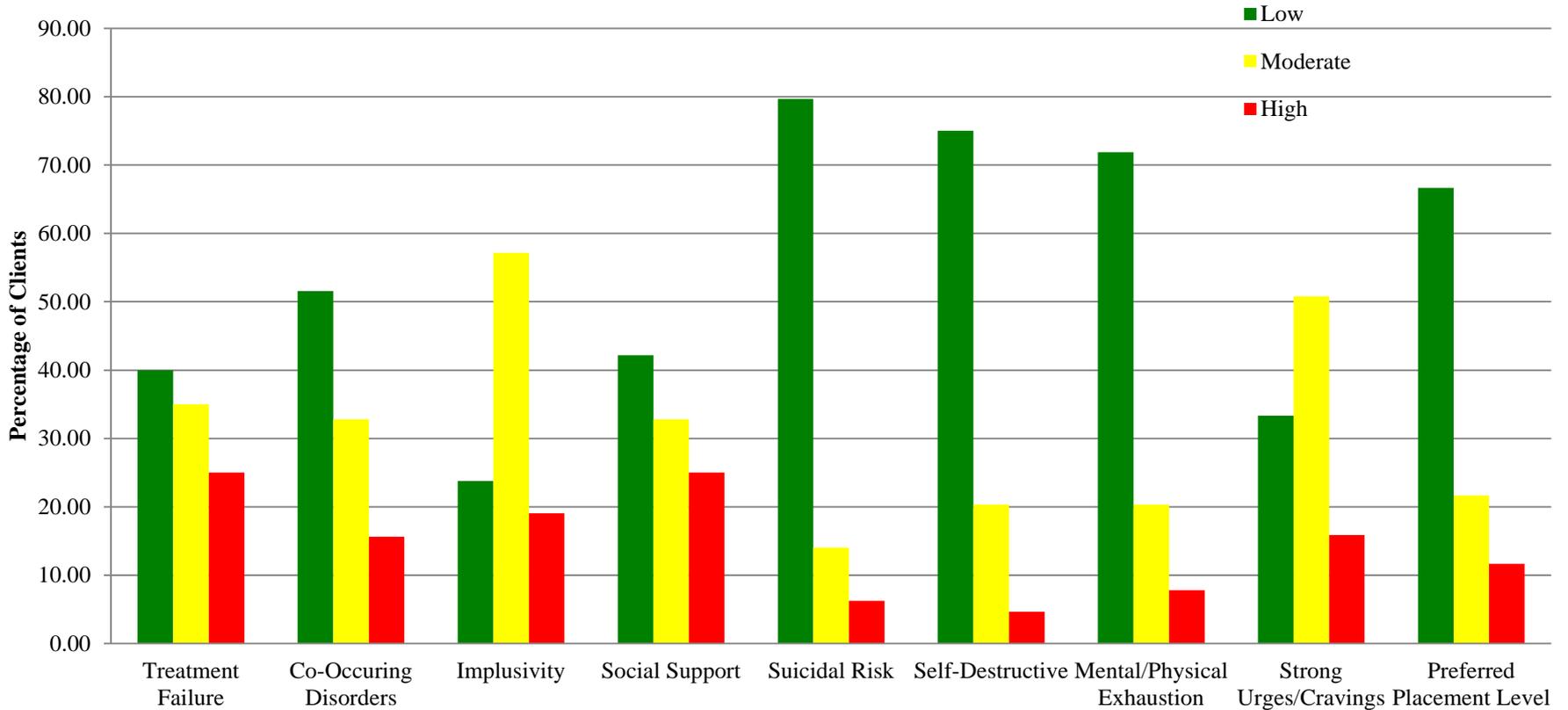
6. **Acutely self-destructive if not stopped or protected:** Client doesn't care about consequences or wants to lose everything. May be contemplating criminal behavior (e.g. embezzlement, bank robbery) or other high-risk activity that will cost them their freedom, marriage, or career.
7. **Mental/Physical Exhaustion:** Client experiences physical or psychological exhaustion due to gambling; This may be more pertinent for binge gamblers, and those who don't stop once they start, but keep gambling for days, weeks, or months. May require structure, support to stabilize basic functioning.
8. **Strong Urges, Cravings:** Client is struggling with intense, frequent, unmanageable urges, cravings to gamble.

Preferred Treatment Referral Source: Outpatient; Intensive Outpatient;
Residential



Therapists Ratings

Therapist-Client Percentage ASAM





Possible Implications

- If our data show a need, may result in greater interest in developing higher levels of care in the state
- May also show us that outpatient treatment is sufficient in most cases, and no additional care is needed
- Either way, would provide clinicians with needed information and resources
- Provide evidence for need for services key policy makers at state level



Training Community Therapists in Evidence Based Treatment

Regular article

What is usual about “treatment-as-usual”? Data from two multisite effectiveness trials

Elizabeth J. Santa Ana, (Ph.D.)^{a,*}, Steve Martino, (Ph.D.)^b, Samuel A. Ball, (Ph.D.)^b,
Charla Nich, (M.S.)^b, Tami L. Frankforter, (B.S.)^b, Kathleen M. Carroll, (Ph.D.)^{a,b}

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Abstract

Despite increased emphasis on broadening the implementation of empirically supported therapies (ESTs) to improve standard clinical practice and patient outcomes, objective descriptions of what actually constitutes standard practice in community-based drug abuse treatment do not exist. We present data from independent ratings of 379 audiotapes drawn from the “treatment-as-usual” arm of two multisite randomized effectiveness trials in the National Institute on Drug Abuse Clinical Trials Network. As expected, the most frequently occurring strategies involved assessing the participant’s substance use and social functioning, asking open-ended questions, discussing problems and feedback, and giving advice and direction. However, a number of interventions associated with ESTs were very rarely implemented in these early sessions. These data suggest missed opportunities for optimally engaging patients in the early stages of treatment and enhancing substance use outcomes and only moderate success to date of efforts to bridge the gap between research and practice. © 2008 Published by Elsevier Inc.



Effectiveness

- Several efficacy trials for CBT and MI
- Few effectiveness trials (e.g., Toneatto & Dragonetti, 2008)
- Can we train community-based therapists to administer evidence based treatments?



Effectiveness Study

- Windsor Regional Hospital – 1 mile from Detroit
- *Overall Aim*
- Examine the effectiveness of a combined motivational interviewing (MI) and cognitive behavioural (CBT) treatment for pathological gambling. The treatment will be delivered by clinicians in a community-based clinic.

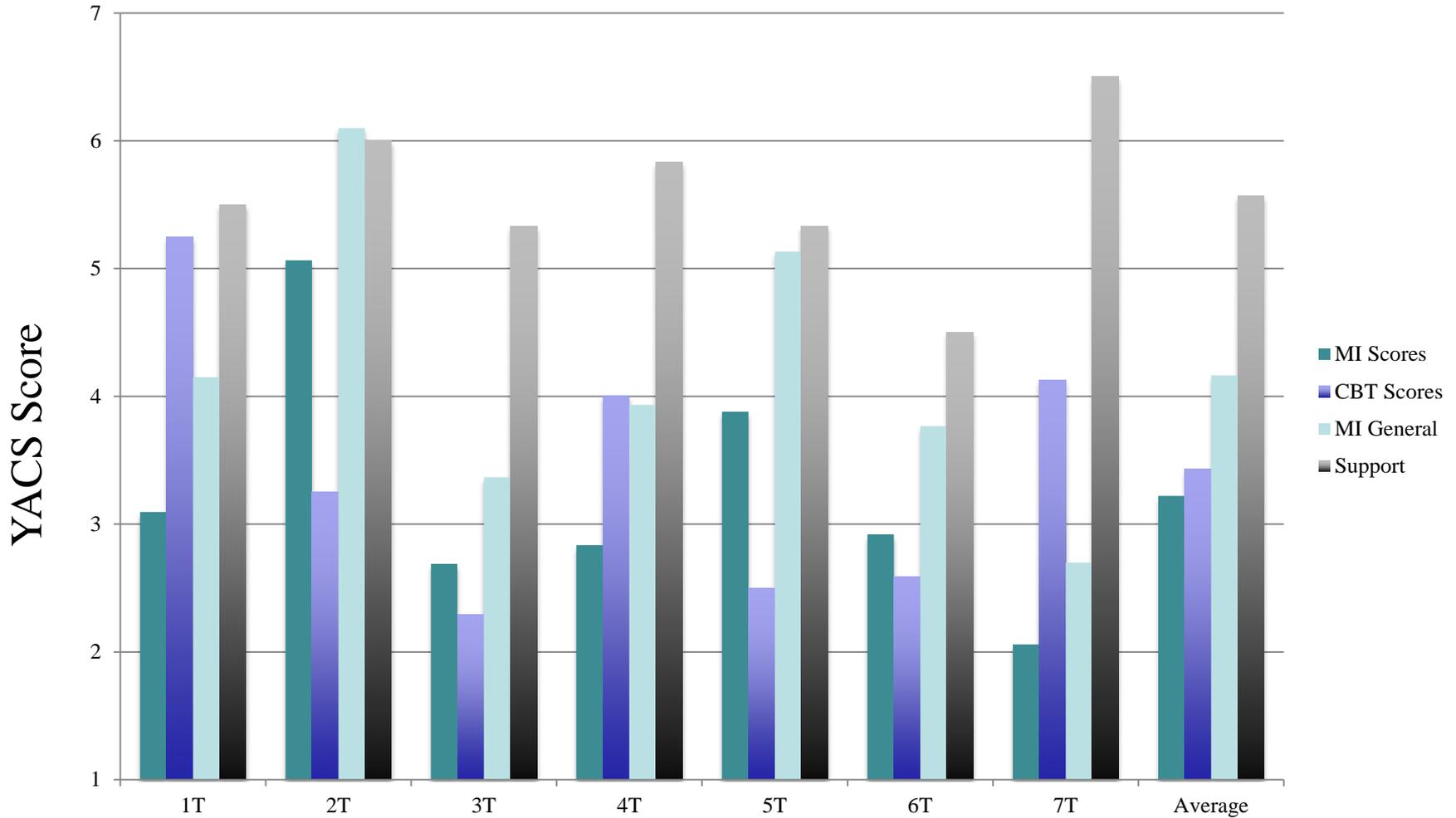


Phase 1 – Treatment as Usual (TAU) phase

- Aim: Examine the extent to which treatment providers at Windsor Regional Hospital's Problem Gambling Services engage in CBT and MI therapies as a regular part of TAU.
- Procedures: Consented therapists and pilot cases; audio-recording of therapy sessions; independent raters rated the sessions to determine the types of herapeutic interventions used at the clinic.



TAU MI and CBT scores





Phase 2 – Pilot Phase

- Aim: Provide training and supervision to therapists who will provide the CBT/MI.
- Procedures: Seven therapists were selected to provide treatment (4 CMBT and 4 TAU, randomly assigned). The therapists enrolled in CMBT were trained for the study, and saw at least one pilot case.



Phase 3: Randomized effectiveness trial

- Aim 1: Assess the effectiveness of a CBT/MI approach as delivered in a community treatment setting.
- Procedures: PGs who enter treatment at the local Problem Gambling Services at Windsor Regional Hospital are randomly assigned to receive either CMBT, treatment as usual (TAU), or go on a 12-week waitlist (at which point they will then be randomized to CMBT or TAU).



Randomized effectiveness trial

- Aim 2: Examine putative mechanisms of action of CMBT relative to TAU.
- Procedures: We will assess treatment motivation, coping style, cognitive distortions, psychiatric severity and gambling self-efficacy before and after treatment.



Relevance to Clinicians

- Provide a basis for training therapists to administer evidence-based treatments in community care
- Demonstrate the extent to which therapists may be using evidence-based practices already
- Show whether evidence-based practices are even superior to treatment as usual



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Thank You!

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