



Investigating Emotion Regulation, Anxiety and Dispositional Mindfulness in Gambling to Cope with Adversity

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Outline

1

Review of the Literature

2

Objectives of study and Methods

3

Results

4

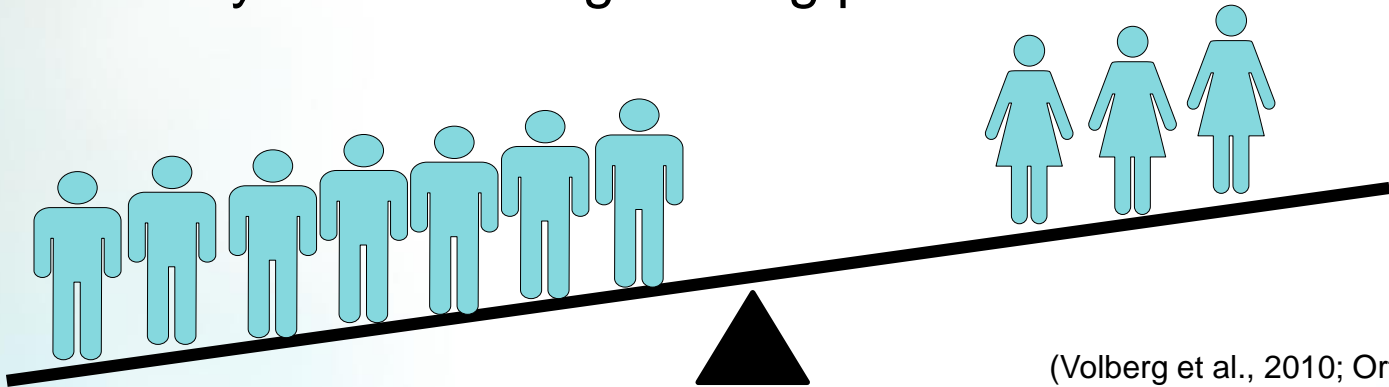
Discussion and Clinical Implications

DSM-5: Gambling Disorder Revisions

- Gambling Disorder (GD) added to DSM-5 under *Substance Use Disorder* in a new behavioral addictions category
 - Reflects research that GD is similar to substance-related disorders in clinical expression, brain origin, comorbidity, physiology and treatment
- Defined as *persistent* and *recurrent* problematic gambling behavior leading to significant impairment or distress

Gambling Participation

- $\approx 80\%$ of adults report yearly gambling engagement
 - 1-2% of adults have a severe gambling problem
- 36-79% of adolescents worldwide report yearly gambling engagement
 - 3-8% of youth have a gambling problem



Gambling Disorder Risk Factors

- International population studies have found common risk factors
 - Ethnic minorities
 - Male gender
 - Under 30 years
 - Low Income
 - Single marital status
 - Early on-set of gambling participation
- Recent research by Volberg et al. (2018) confirmed many of these risk factors, added *physically disability*
- Participants who completed graduate or professional school had 64% lower odds of being a problem gambler compared to high school or less

Gambling Disorder Co-morbidities

- Higher rates of co-occurring psychiatric conditions including;
 - Mood disorders (e.g., anxiety and depression)
 - Substance use disorders (e.g., alcohol, cigarettes, illicit drugs)
 - Personality disorders (e.g., antisocial and conduct)
- Problem gambling also predicts later onset of mood disorders (e.g., anxiety)
- Gambling Disorder is associated with high rates of depression, anxiety, substance-use disorders, suicidality, as well as occupational, social and legal problems

Anxiety

- Encompasses physiological tension and arousal, cognitions of threat and behavioral avoidance
 - Can be an adaptive response when confronted with dangerous stimuli
 - When reaction occurs to unreasonably perceived danger can be detrimental to mental health
- Somatic Anxiety
 - Self-reported physiological symptoms
- Cognitive Anxiety
 - Symptoms of negative affect associated with thought processes and impaired attention
- Characterized by emotional distress and inability to elect adaptive or inhibit maladaptive responses

Gambling as a coping strategy

- Motivations predictive of greater gambling engagement
 - Enhancement motives
 - Coping motives
 - Low emotion regulation gamblers
- Individuals with higher coping motives have more severe gambling problems
- Individuals with high anxiety and poor coping may potentially be characterized by having an inability to elect adaptive or inhibit maladaptive emotional responses

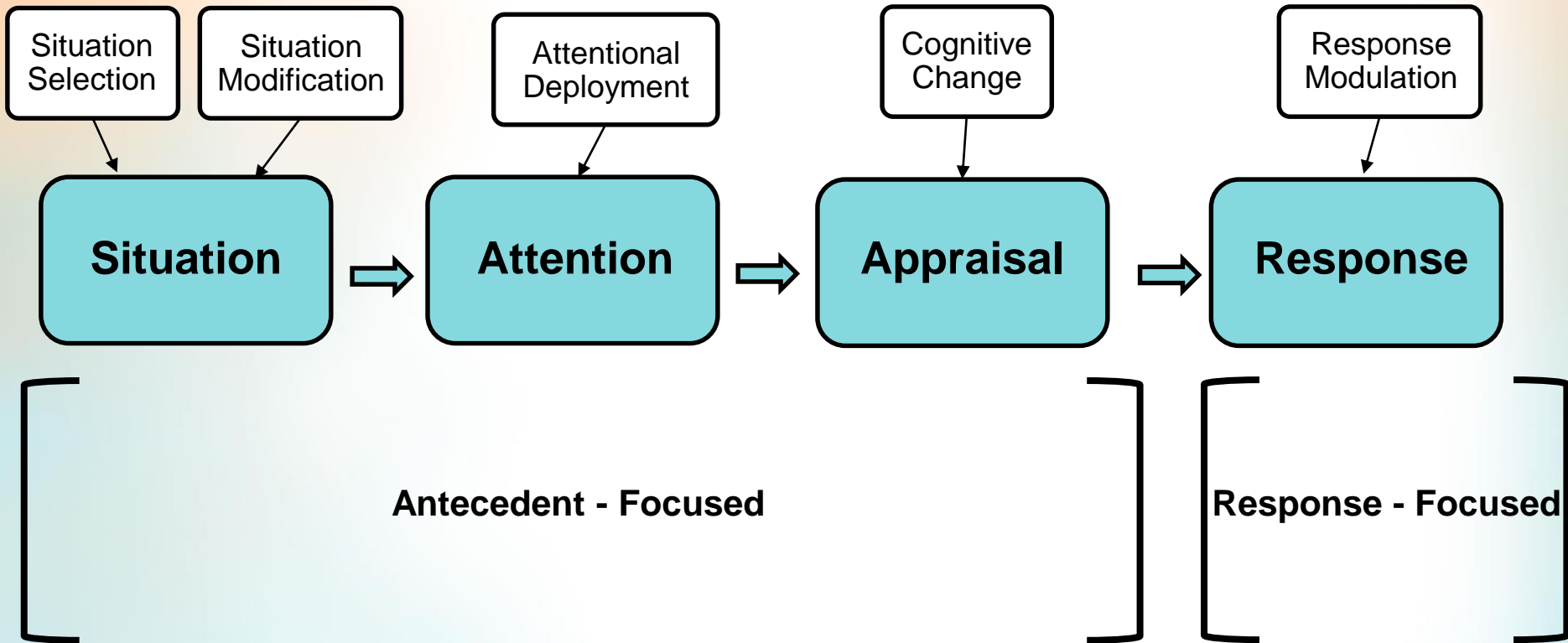
Emotion Regulation

- Internal and external processes involved in monitoring, evaluating, and altering intensity and timing of emotional reaction
- Multicomponent process involved in managing diverse systems via strategies
- Critical for adaptive social functioning, psychological adjustment, and mental health



(Cole et al., 2004; Eisenberg et al., 2004; Gross, 1998; Gross et al., 1995; Thompson, 1994)

Process Model of Emotion Regulation



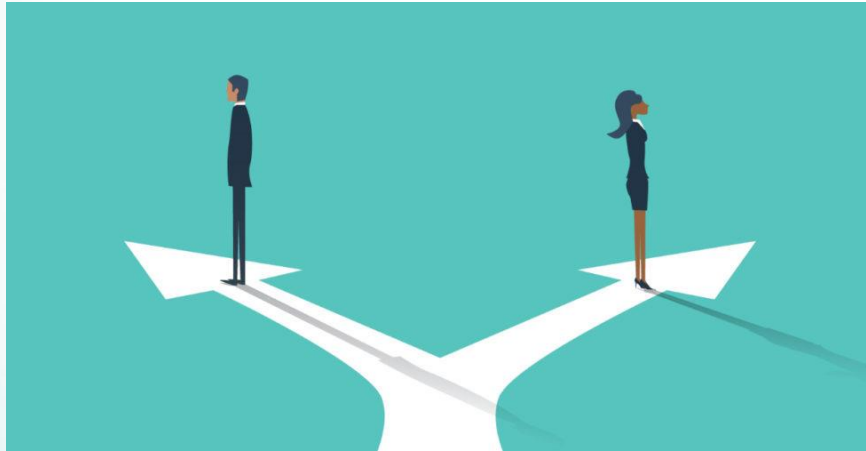
Situation Selection

- Taking actions that will make it more or less likely we will end up in a situation that will elicit desirable or undesirable emotions
- Barriers
 - Backward- and forward-looking biases
 - Appropriately weighing short-term benefits vs. longer-term costs



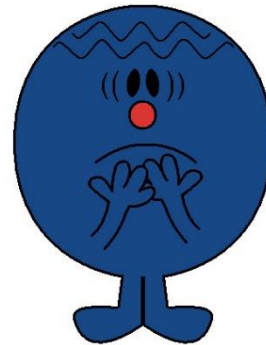
Situation Modification

- Directly modifying the situation to alter emotional impact
 - Modifying the external physical environment
 - Emotional expressions can elicit social responses that modify the situation (can facilitate or undermine emotion regulation)



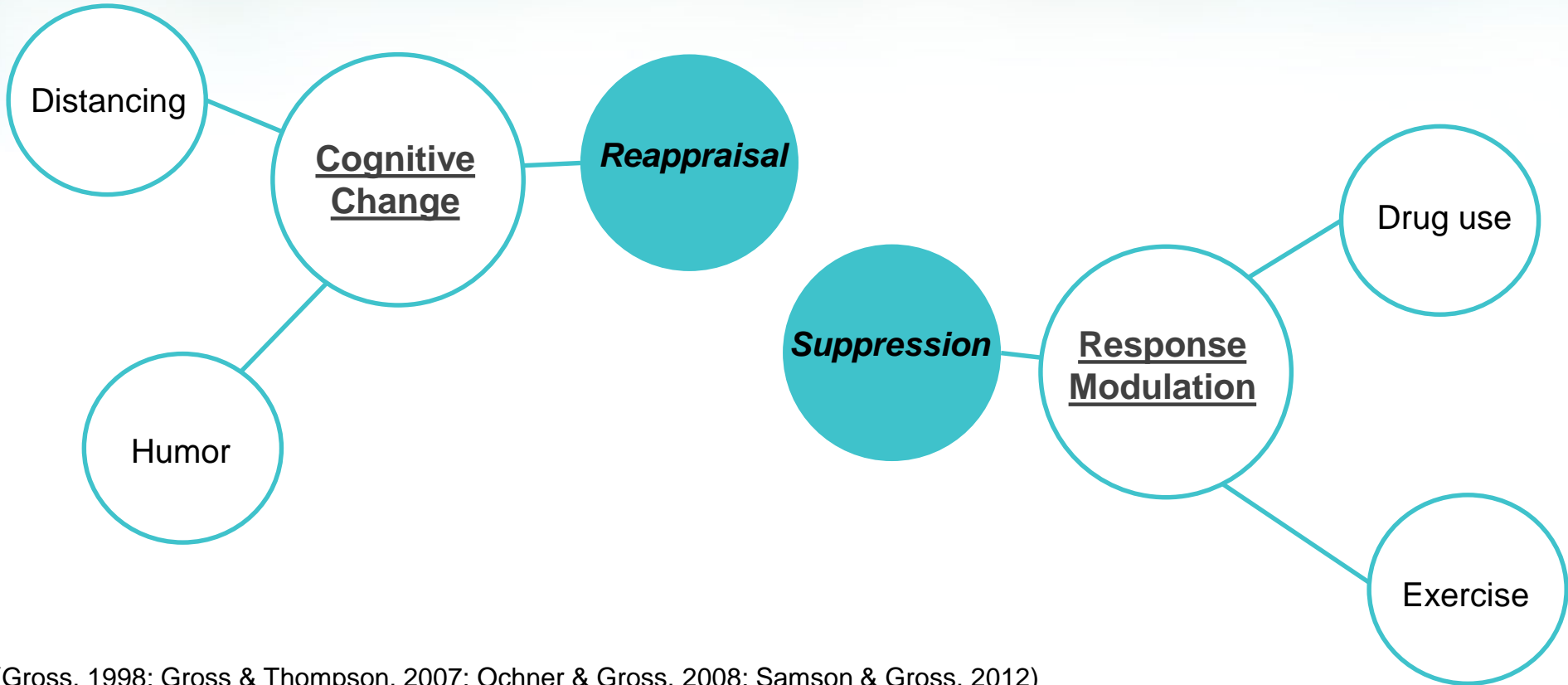
Attentional Deployment

- How we direct our attention within a given situation in order to influence our emotions
 - One of the first strategies to appear in development
- Three major attentional strategies
 - Distraction
 - Rumination
 - Worry



ER Strategies

Most Commonly Researched



Difficulties with Emotion Regulation

- Linked to higher likelihood of psychological disorders
 - Addiction
 - Anxiety
 - Depression
 - Social problems
 - Anger
 - Unhealthy relationship with food



Mindfulness

- Originated from Buddhist contemplative practice
- Increased awareness and acceptance of one's experienced emotions and cognitions
- Kabat-Zinn introduced mindfulness to western treatment methods with Mindfulness-Based Stress Reduction (MBSR)
- Goal of these treatments are not about changing one's experience, but to focus on paying attention in a particular way: “on purpose, in the present moment, and non-judgementally”

Mindfulness

- Individual is encouraged to cultivate an attitude of curiosity, openness, non-judgemental awareness, and acceptance of their present experiences
- Has shown to improve positive mental health and well-being
- Mindfulness has been associated with enhanced emotion regulation skills
- Mindfulness-based interventions for gambling have been effective in
 - Decreasing symptoms of anxiety
 - Decreasing use of thought suppression
 - Increasing levels of mindfulness, self-control, and interpersonal skills

Treatment Mechanisms in Mindfulness

Designed to facilitate behavioral change

- 1) Perceptual shift in mode of responding to sensory and cognitive-affective stimuli
- 2) Substituting maladaptive addictive behaviors with “positive behaviors” (e.g., mindfulness/ meditation)
- 3) Changing locus of control for stress from external to internal metacognitive and attentional resources
- 4) Having compassion and self-compassion
- 5) Reducing a myopic focus on reward

Treatment Mechanisms in Mindfulness

Designed to facilitate behavioral change

- 6) Growth in spiritual awareness
- 7) Adopting a non-judgemental, observatory and non-reactive stance to cravings (riding the wave)
- 8) Using conscious breathing to reduce autonomic and psychological arousal
- 9) Increasing level of patience and understanding
- 10) Better ability to label and regulate mental urges and faulty thinking patterns

Objectives of the Study



Explore the relationship between gambling to cope with adversity (escape) and gambling frequency, and the moderating effect of emotion regulation strategies



Explore the different roles ER strategies (i.e., reappraisal and suppression) and Trait Anxiety (i.e., cognitive and somatic) play in explaining gambling to cope with adversity



Explore mindfulness as potentially moderating the effect these prospective predictors have on the strength of an individual's problematic gambling

Methods - Measures

Online Survey (LimeSurvey software)

Gambling Frequency

- One item assessing gambling frequency over the past 12 months
- 5-point Likert scale

Emotion Regulation Questionnaire (Gross & John, 2003)

- Measures use of Expressive Suppression (ES) and Cognitive Reappraisal (CR)
- 10-items; 5-point Likert scale; Cronbach's α reappraisal = .75; suppression = .88

Gambling Motivations Questionnaire – 9 items (Lambe et al., 2015)

- Measures coping motives subscale
- 3-items; 4-point Likert scale; Cronbach's α = .896

The State-Trait Anxiety Inventory for Cognitive and Somatic Anxiety (Gros et al., 2007)

- Measures trait somatic and cognitive anxiety
- 21-items; 4-point Likert scale; Cronbach's α somatic = .91; cognitive = .90

Mindful Attention Awareness Scale (Brown & Ryan, 2003)

- Measures dispositional mindfulness
- 15-items; 6-point Likert scale; Cronbach's α = .90

Participants

- Recruited through online community posts ($\approx 51\%$) and University campus flyers ($\approx 49\%$)

- $N = 233$ participants
- 69.5% Female
- Age range 18 to 44+
- Majority of participants in 18 - 24 age group (57%)

Education Level	Percentage (%)
High School	25%
CEGEP/College	26%
Bachelors	36%
Masters	11%
PhD	1%
Post Graduate	1%

Results – Bivariate correlations

Table 1.

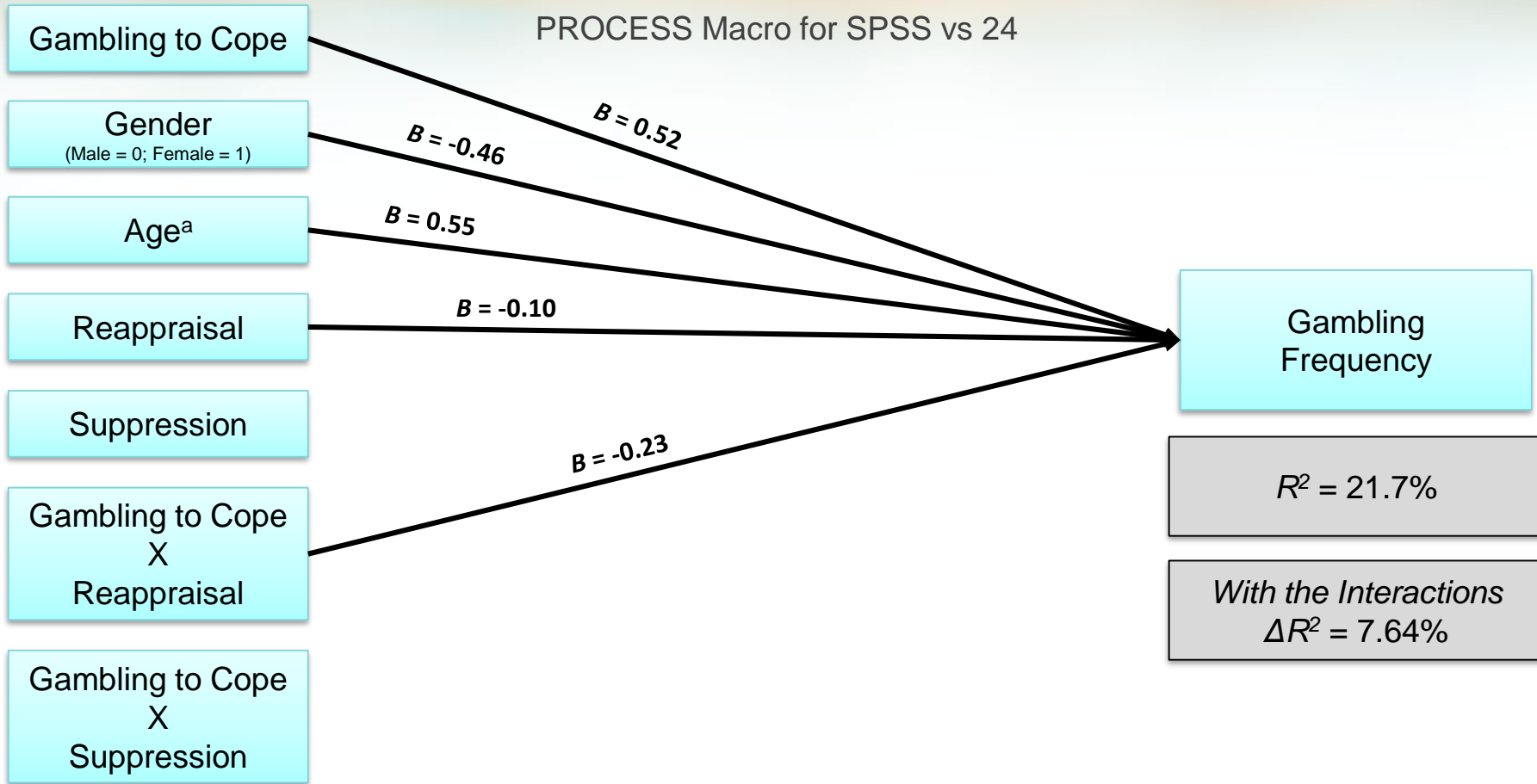
Correlations (Cronbach's on the diagonal), Mean and SDs for the total sample.

		1	2	3	4	5	6	7
1.	Gambling Coping							
2.	Gambling Frequency	.33*						
3.	Cognitive Reappraisal	.063	-.11					
4.	Cognitive Suppression	.17*	.02	.07				
5.	Trait Somatic Anxiety	.30*	.04	-.11	.27*			
6.	Trait Cognitive Anxiety	.20*	-.03	-.19*	.31*	.71*		
7.	Dispositional Mindfulness	-.064	-.10	.12	-.10	-.31*	-.40*	
	Mean	1.35	0.46	4.69	3.81	1.83	2.35	3.62
	(SD)	0.69	0.95	1.23	1.27	0.69	0.76	0.95

* $p < .05$

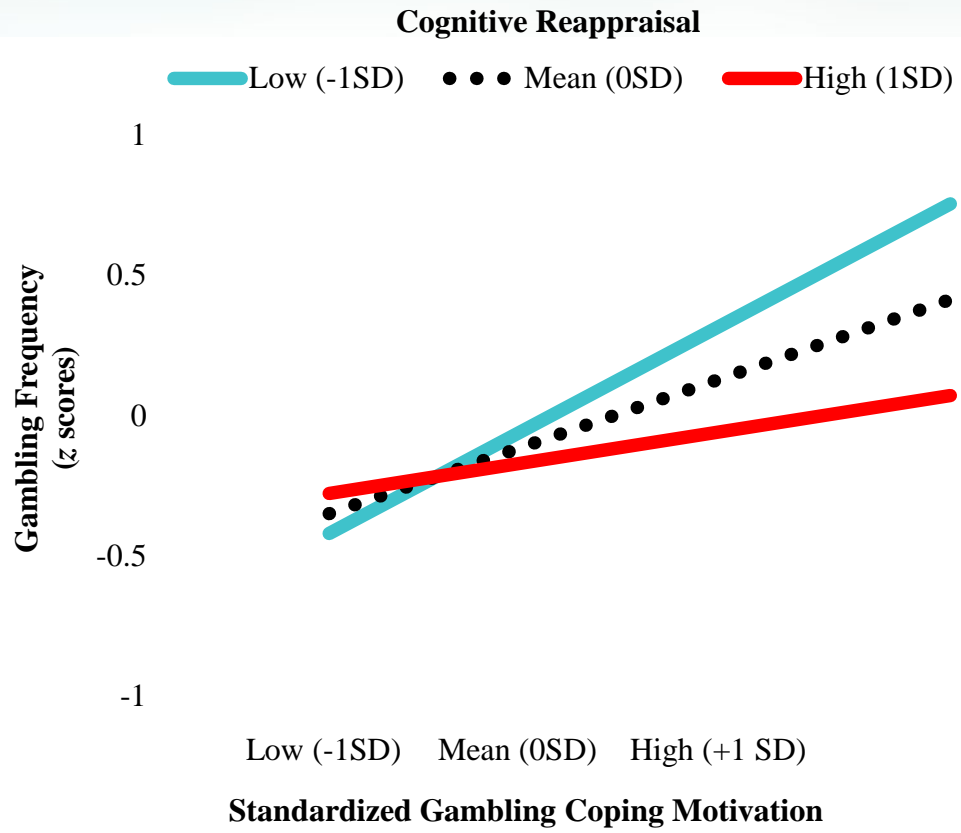
Results – Moderation Effect of ER Strategies

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Results – Moderation Effect of Reappraisal

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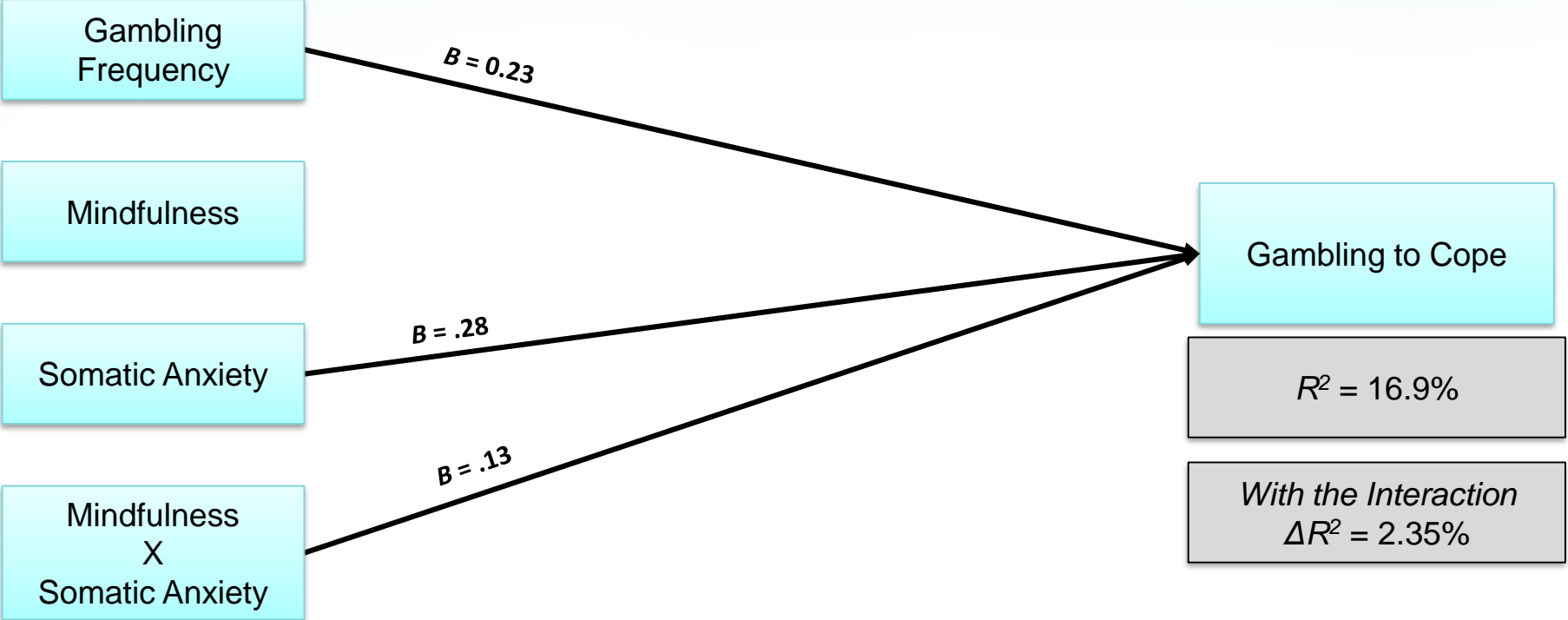


Results – Predicting Gambling to Cope

	B	p	ΔR^2
Step 1 (Constant)	0.96	0.00	11.88%
Gambling Frequency	0.24	0.00	
Gender (Male = 0; Female 1)	0.10	0.34	
18 to 24 years	0.15	0.23	
25 years and older	0.14	0.31	
Step 2 (Constant)	-0.12	0.72	9.09%
Gambling Frequency	0.24	0.00	
Gender (Male = 0; Female 1)	0.11	0.26	
18 to 24 years	0.24	0.05	
25 years and older	0.21	0.13	
Reappraisal	0.07	0.06	
Suppression	0.10	0.10	
Somatic Anxiety	0.23	0.01	
Cognitive Anxiety	0.00	0.97	

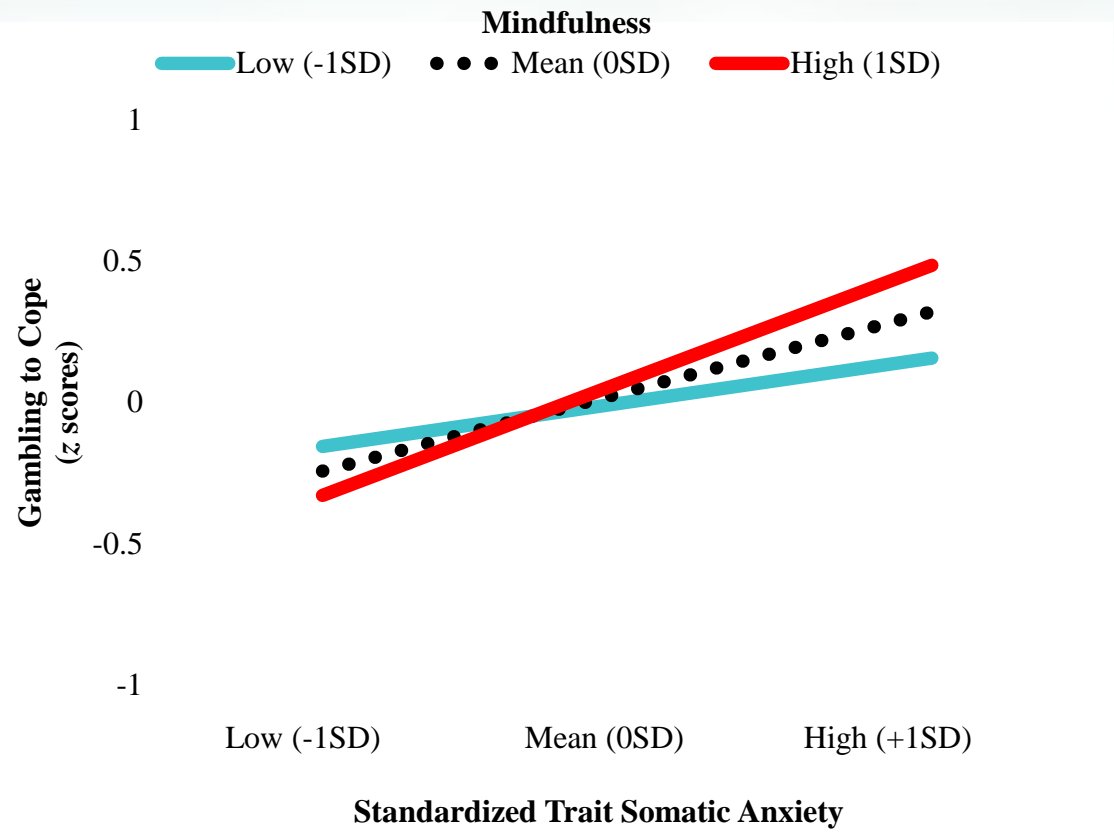
Results – Moderation Effect of Mindfulness

PROCESS Macro for SPSS vs 24



Results – Moderation Effect of Mindfulness

PROCESS Macro for SPSS vs 24



Conclusions

Objective 1



Explore the relationship between gambling as a form of escape (coping) and gambling frequency, and the moderating effect of emotion regulation strategies

- Reappraisal as an ER strategy does have a negative moderating effect on the relationship between gambling as a form of escape and gambling frequency
 - Importance of teaching adaptive ER strategies (like reappraisal)
- Suppression did not have a significant moderating effect on this relationship
 - Need to study other maladaptive response modulation strategies beyond suppression
 - Perhaps gambling itself should be considered a response modulation strategy

Conclusions

Objective 2



Explore the different roles ER strategies (i.e., reappraisal and suppression) and Anxiety (i.e., cognitive and somatic) play in explaining gambling as a form of escape (coping motivations)

- Trait somatic (but not cognitive) was a significant predictor of gambling to cope.
 - Importance of teaching ER strategies beyond cognitive change strategies
 - Importance of teaching patients how to deal with somatic and physiological consequences of anxiety

Conclusions

Objective 3



Explore mindfulness as potentially moderating the effect these prospective predictors have on the strength of an individual's gambling as a form of escape (cope motivation)

- Individuals who reported higher levels of trait somatic anxiety and higher levels of mindfulness were more likely to gamble due to coping motivations.
 - Does greater awareness of emotions lead to better mental health?
 - Anxious individuals are already hypervigilant

Limitations

- Self-report data
- Convenience sample
- Over-sampling of females
- Recruitment methods
- Cross-sectional study design

Clinical Implications

- Usefulness and benefits of mindfulness
 - Clinicians need to be aware when applying mindfulness techniques in therapy
 - Teach themes such as;
 - Non-judging; patience, trust, acceptance, letting go, genuine curiosity and openness
- Caution should be taken in teaching awareness strategies
 - Individuals should first or simultaneously acquire the skill of non-judgemental acceptance
- Clinicians need to consider the 10 key mechanisms in mindfulness provided by Shonin et al., (2014) in order to facilitate behavioral change when teaching mindfulness-based techniques to individuals

Clinical Implications

- In line with mindfulness teachings individuals need to learn how to turn *towards* their experiences rather than *away* from it
 - Instead of avoiding or distracting themselves from the urge to gamble need to be taught to observe the impulse, while remaining relaxed and separate from it
- Clinicians should introduce education on emotion regulation processes and strategies
 - Learning about emotions and their physiological presentation
 - Learning various effective ER strategies
 - Being flexible in how we use these strategies

Practical Suggestions

- Introduction to automaticity; acting without awareness
 - Mindful eating (e.g., raisin exercise)
 - Body scans
- Recognizing triggers
 - Spot the Function (functional analysis; ABCs)
 - Urge surfing
- Acceptance
 - Not struggling with the present moment, but meeting it with compassion and acceptance
 - Provides more freedom and choices in *responding*, rather than *reacting*
 - Cultivating a willingness/curiosity

Practical Suggestions

- Recognize thoughts for what they are
 - Watch each thought pass, like boxes on a conveyor belt without picking them up or holding on to them
- Identify Values
 - What activities are in line with your values
 - Link goals to values
- Carrot vs. Stick
 - Acknowledge the small steps
 - Have compassion for self
- Find positive activities for self-care

Future Directions

- Applying experimental manipulations
- Targeted sampling methods
- Longitudinal study design
- Implications for prevention



Questions?

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