A prospective natural history study of quitting or reducing gambling

Disclosure of Potential Conflict of Interest

- Funding for the current study provided by:
  - Gambling Research Exchange Ontario (formerly Ontario Problem Gambling Research Centre)
- Other funding held by presenter:
  - Manitoba Gambling Research Foundation
  - Canadian Institutes of Health Research

Question driving this research

- What leads to people successfully quitting or reducing their problem gambling?
  - Natural history research conducted to-date
  - Prospective natural history study findings

Context

- Most people who quit or reduce their gambling do so without accessing treatment
  - Cunningham (2005) and Suurvali (2008)
    - 10-18% any treatment access ever
  - Slutske (2006) – among those who recover
    - 10% treatment access
  - Treatment use more likely with severe problems

Natural History Research

- Examples:
  - Hodgins (2000), Toneatto (2008) retrospective studies
  - Cunningham et al. (2009) – representative population survey study

Natural History Research

- Explanations of successful change
  - Precipitating events – e.g., financial
  - Change in life events – increase in positive and decrease in negative events that occurred during the time after the change was made
  - Motivational – some form of personal appraisal leading to decision to quit or reduce gambling
  - Maturational or Drifting out

Prospective Natural History Research

- Example: Cunningham (2005) with problem drinkers
  - Recruited people intending to quit or reduce their drinking
  - Assessed motivation for change and life events
  - Identify those who made a serious quit attempt after 2 months
  - Follow-up at 12 months

Assessment of Motivation

- Anticipated costs and benefits of change

"IF I STOP OR CUT DOWN ....."	Probably will not happen to me	Probably will happen to me and it is ... not important	slightly important	moderately important	very important	extremely important
I will feel better physically.	0	1	2	3	4	5
I will have difficulty relaxing.	0	1	2	3	4	5
I will change a lifestyle I enjoy.	0	1	2	3	4	5

Life Events Assessment

Life event that may have happened IN THE LAST 3 MONTHS...	Happened to me in the last year		**If the event happened to you ...** Did event have a positive, negative or no effect on your life?		
1. New job	Yes	No	Pos.	None	Neg.
2. Fired from job	Yes	No	Pos.	None	Neg.
3. Laid off from job	Yes	No	Pos.	None	Neg.
4. Change of work hours	Yes	No	Pos.	None	Neg.
5. Demoted at work	Yes	No	Pos.	None	Neg.
6. Promoted at work	Yes	No	Pos.	None	Neg.

Predicting Reductions in Drinking

Predictor	Drinks per drinking day	Highest number of drinks	Proportion of drinking days
	R	*R*	*R*
Benefits subscale, ADCQ	−.22	−.38*	−.33
Costs subscale, ADCQ	.04	.20	.43*
Reduction in negative life events	−.25	−.46*	−.26
Improvement in positive life events	−.33	−.35*	−.31

Partial correlations controlling for baseline drinking

Purpose of the Current Study

- Prospective natural history of gambling problems
  - An increase in positive life events and a decrease in negative life events will be positively associated with reductions in severity of gambling
  - People with more intrinsic (autonomous) motivation for change at baseline will display greater reductions in their gambling compared to those with lower intrinsic motivation
  - People with more severe gambling problems at baseline will be less likely to succeed at quitting or reducing their gambling

Study Design

- Recruit participants thinking about quitting or reducing their gambling
- Assess problem severity, baseline motivation, and life events
- Repeat online surveys every 3 months for a year (18 month follow-up also conducted)
- Relate baseline motivation and change in life events to reductions in PGSI

Recruitment

- Potential participants respond to advertisements (mainly online)

- Advertisements placed in Ontario (96% of participants were Ontario residents)

- Issue?: Interested in people quitting or reducing but advertisement asks for people who are intending to quit

Recruitment

- Online recruitment
- Identified participants who:
  - intended to quit or reduce their gambling in next 6 months
  - Were 18 years or older
  - Had a PGSI score of 5 or more
- Completed baseline screener, returned paper consent form and completed baseline survey

Baseline Assessment

- PGSI
- Type, frequency, and amount of money spent on gambling activities
- Life events questionnaire (LEQ)
- Measure of motivation

Motivation Assessment

- Self-determination theory
  - Primary interest in autonomous motivation

	Select the option that applies to you						
The reason I would not gamble or reduce my gambling is:	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very True
Because I feel that I want to take responsibility for my own life.	1	2	3	4	5	6	7
Because I would feel guilty or ashamed of myself if I gambled.	1	2	3	4	5	6	7
Because I personally believe it is the best thing for my life.	1	2	3	4	5	6	7

Follow- up Surveys

- Repeat surveys at 3, 6, 9, and 12 months
- At each time point, ask about:
  - Gambling activities, amount spent, and PGSI
  - Life events
  - Motivation
  - Current intent to quit or reduce gambling

Participant Recruitment

- 500 respondents screened
- 345 found eligible and sent consent
  - 90% of those excluded not intending to quit or reduce in next 6 months
- Of 345 sent consent form
  - 224 returned consent form
  - 209 completed baseline assessment
- 204 included in final sample

Follow-up Rates

- **3 month** – 187 completed, 183 with usable data (**89.7%**; 183/204)
- **6 month** – 183 completed, 178 with usable data (**87.3%**)
- **9 month** - 179 completed, 175 with usable data (**85.8%**)
- **12 month** - 172 completed, 163 with usable data (**79.9%**)

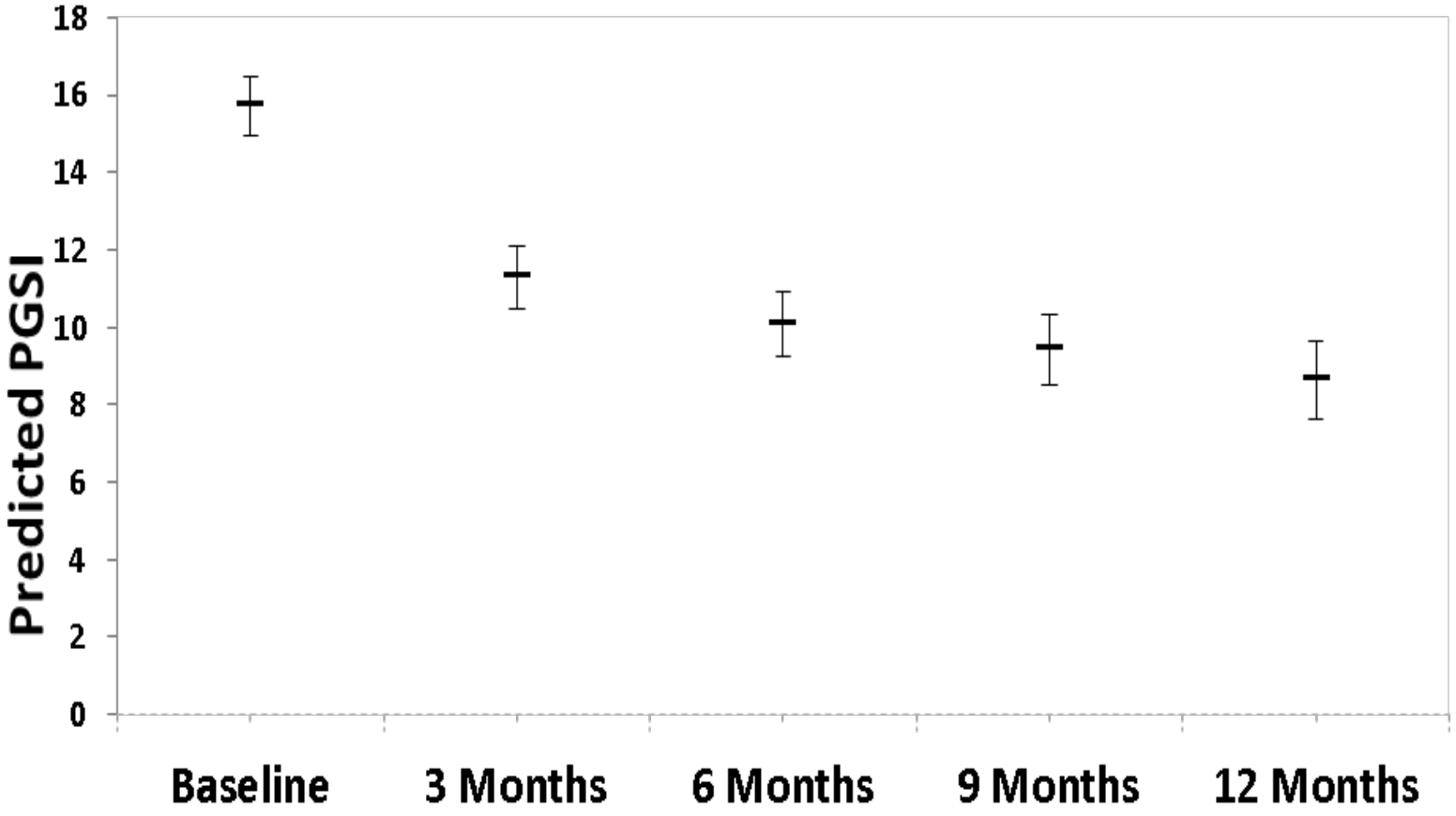
Demographics

Variable	N = 204
Mean (SD) age	41.3 (14.1)
Males, %	61.8
% Some post-secondary education	69.6
% Married/common law	35.8
% Full/part-time employed	67.2
% Personal Income	
<$30,000	47.1
$30,000–$49,999	28.4
$50,000–$79,999	17.6
$80,000 or more	6.9

Gambling Characteristics

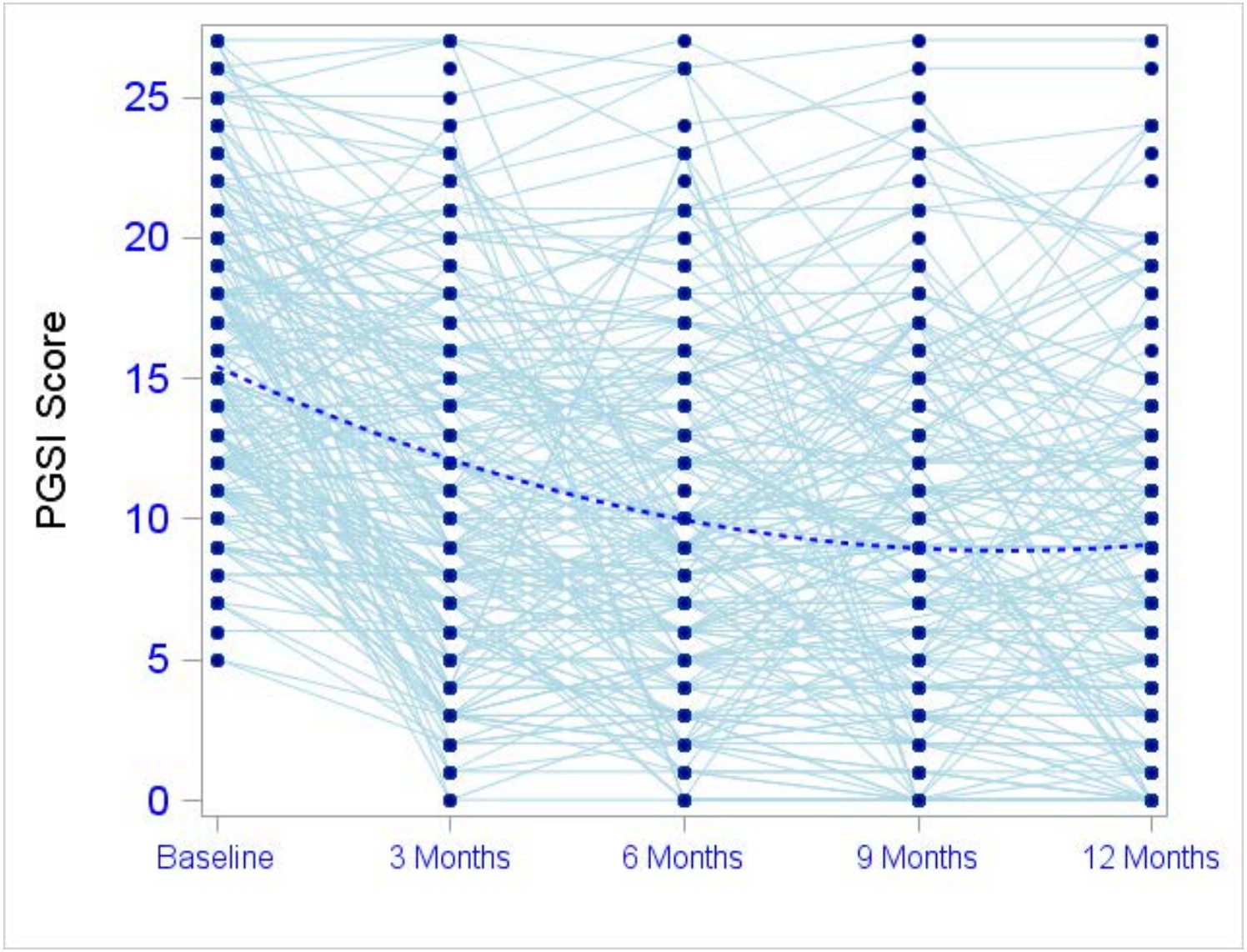
Variable	N = 204
PGSI, mean (SD)	15.7 (5.1)
Gambling Severity , %	
Moderate (PGSI = 5-7)	3.9
Problem (PGSI = 8-27)	96.1
Past year *total* amount spent, mean (SD)	$10,544 ($14,886)
Past year *largest* amount spent, mean (SD)	$1,550 ($4,400)
Type of Gambling Play, %	
Strategic	75.0
Non-Strategic	87.3
Stage of Change, %	
Contemplation	67.2
Preparation	32.8
Ever attended formal treatment, %	15.2
Currently in formal treatment, %	3.4

PGSI Trajectory Across Time

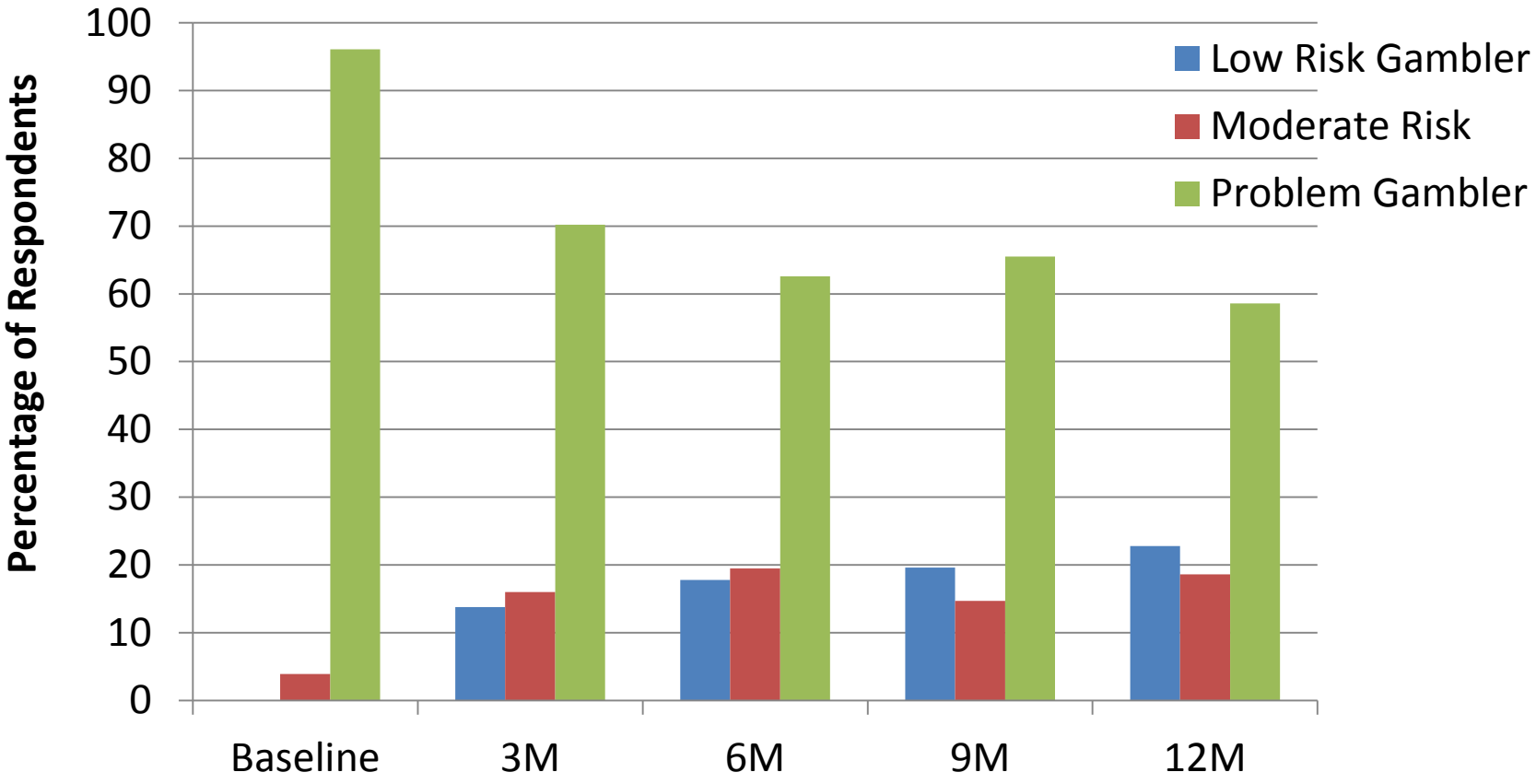


Issue?: Baseline PGSI asks about past 12 months

PGSI Trajectory Across Time

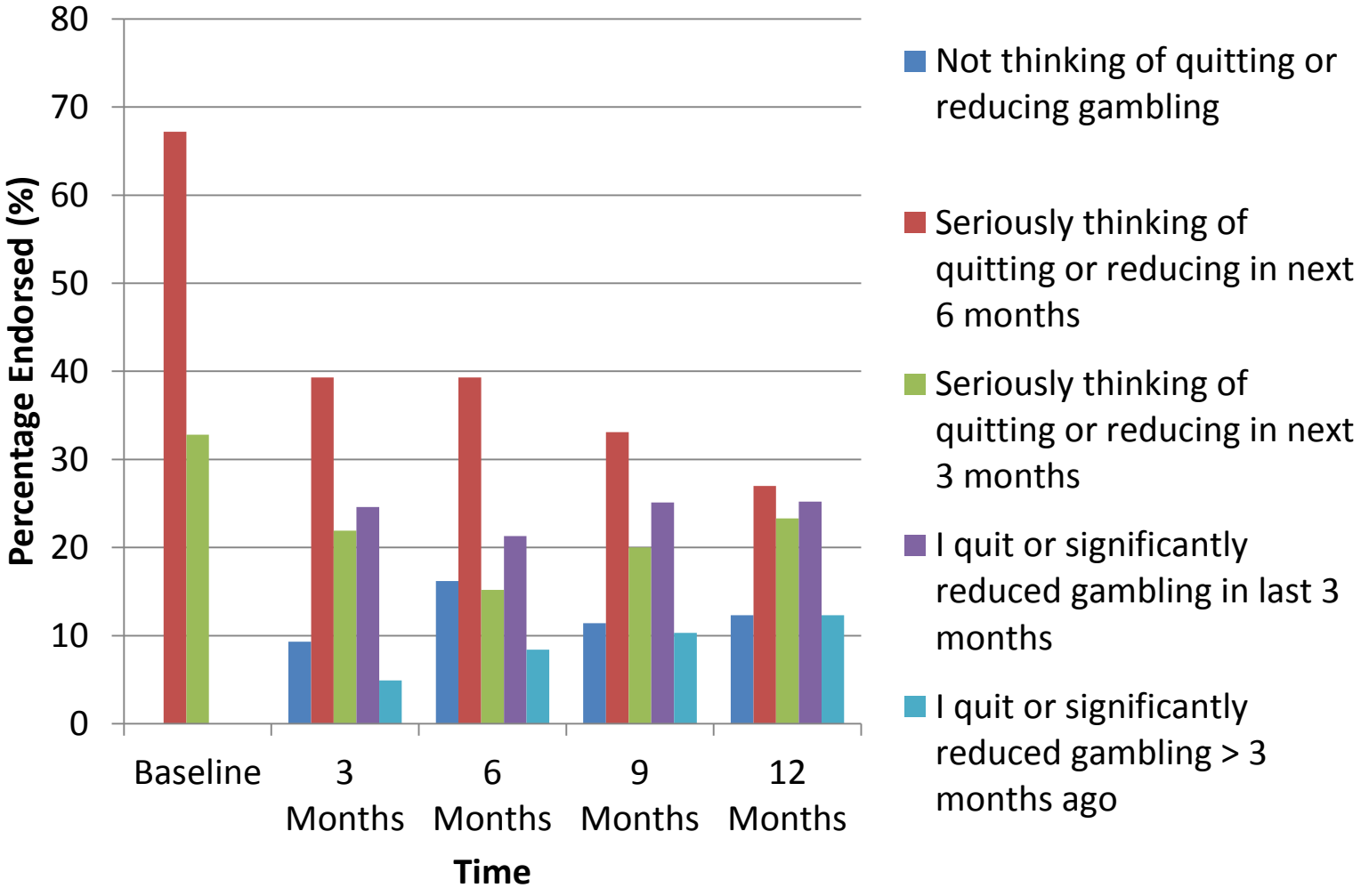


Change in Gambling Severity

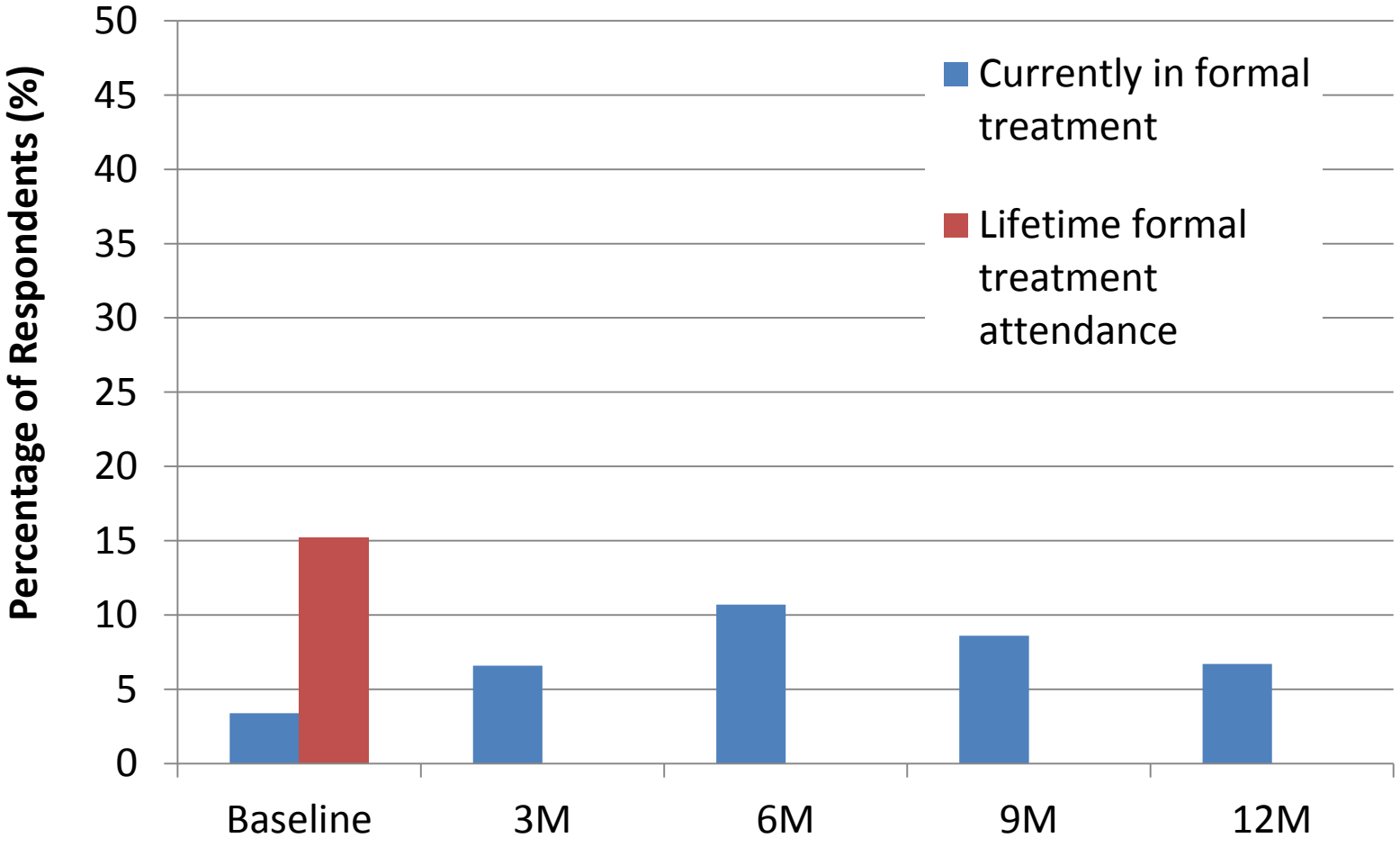


31% of participants were low risk (PGSI < 5 at at least 1 time point)

Stage of Change Over Time



Formal Treatment Use



Issue?: Does not include Gamblers Anonymous

Primary Analyses

- Complex data set with lack of independence between time points
- Generalized linear mixed effect models
- Maximum likelihood approach to dealing with missing data

Analyses Step 1

- Identify demographic and gambling characteristics that are related to changes in PGSI over time
  - Personal income, Strategic gambling, and Current formal treatment were significantly related
- Include these significant characteristics in model testing relation of change in PGSI to constructs of interest

- Issue?: Results of analyses when gambling characteristics are not included?
  - E.g., Strategic gambling

Relating Change in LEQ to PGSI

- Degree of increase in positive life events positively associated with reductions in PGSI ($p < .01$)
- Degree of decrease in negative life events positively associated with reductions in PGSI ($p < .05$)

- Issue?: Baseline LEQ asks about past 12 months

Taking a Finer Grained Look

- LEQ subscales related to reductions in PGSI (baseline included)
  - Increase in positive legal events
  - Decrease in negative friendship (social) events

  LEQ subscales are: Work, Residence, Relationship, Family, Friendships, Finance, Health, Legal, Miscellaneous

Finer Grained Look 2

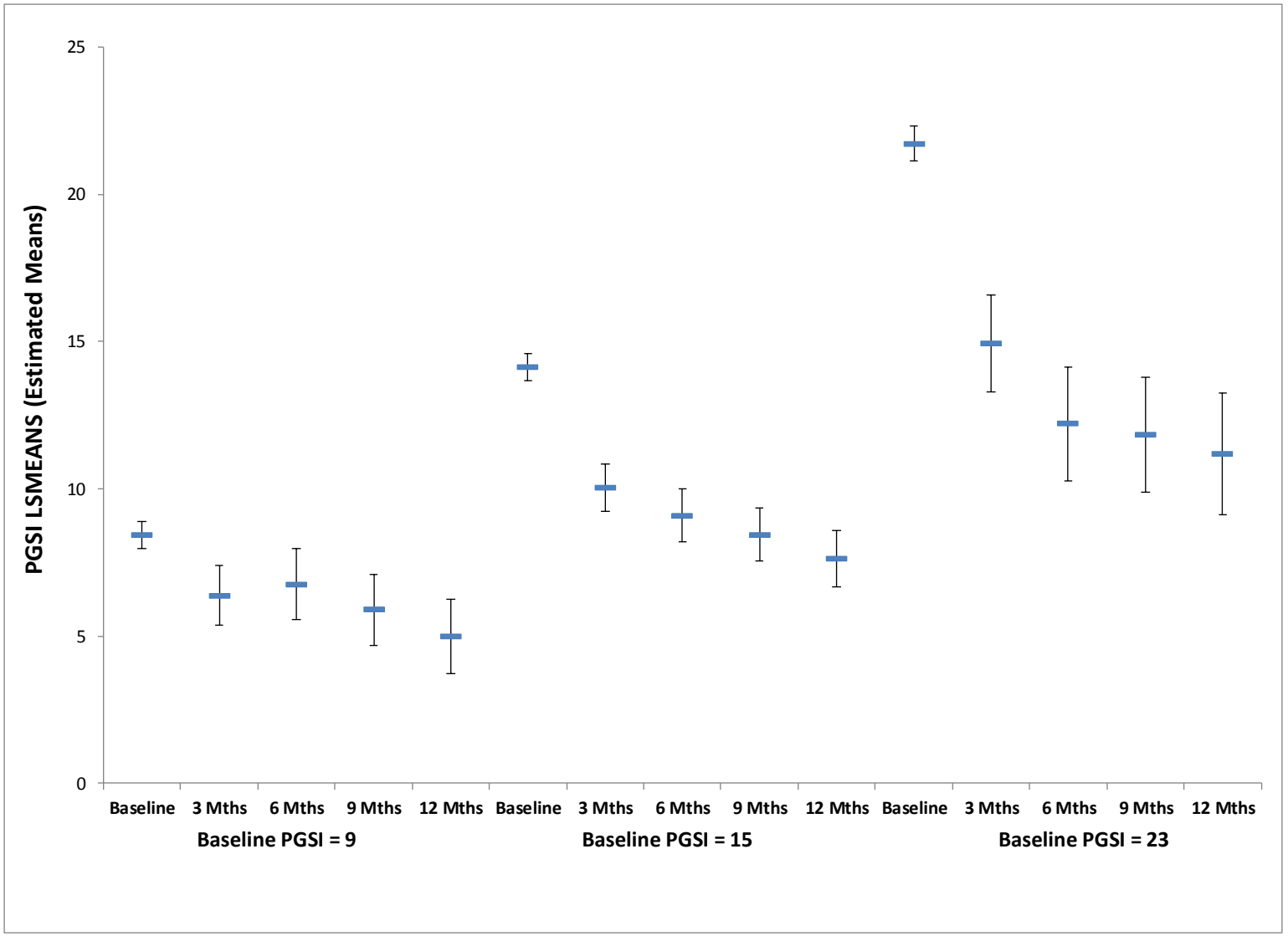
- Factor analysis with items coded as did vs did not occur
- Increase in events related to reduction in PGSI
    - Legal events, marital problems, adoption or death of child, new pet or death of pet
  - Increase in events related to increase in PGSI
    - Death or serious injury of family member

Relating Motivation to PGSI

- Two models:
  - Baseline autonomous, introjected and external motivation to change in PGSI
  - Motivation subscales at each time point
- None of the motivation subscales were significantly related to change in PGSI

- Issue?: Inter-correlation between motivation subscales

Relating Baseline PGSI to Change



Summary

- Definite relationship observed between changes in PGSI and change in frequency of life events
- No relationship observed between motivation at baseline and changes in PGSI
  - At least with the analysis conducted so far and with the measure of motivation employed
- People with lower PGSI scores at baseline are more likely to meet low risk levels of PGSI at follow-up

Next Steps

- Continue analyses
  - Including with additional measures in surveys not discussed here
    - Process of Change
    - Barriers to Change at 18 month follow-up
- Recognize that, while this is an interesting sample, we did not end up with the one intended
- Within this framework, consider implications of findings to encourage process of change in problem gamblers
  - Thoughts from the audience would be welcomed

Finally ….

- Recognize that the surveys themselves may have had an impact
  - *"I truly appreciate this online study and the help that I received. I can honestly say that it has guided me down the right path.*
    Thank you ever so much."
  - *"I have found these surveys, very helpful with my gambling. I feel like in 2015, I may stop completely."*

Collaborators

- Collaborators:

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