

# Concurrent disorders, problem gambling and decision-making ability

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# OVERVIEW

- Introduction
  - Problem gambling in New Zealand
  - Problem gambling and psychological disorders
  - Decision-making in gamblers
- Research objectives
- Methods
- Findings
- Future direction

# Problem gambling

- DSM V defines problem gambling as “persistent or episodic maladaptive behaviour leading to clinically significant impairment or distress”.
- Problem gambling, in this research is defined in broader sense, by including individuals who are experiencing difficulties with their gambling.

# Gambling in New Zealand

6 casinos  
and around  
**16,440** non-  
casino  
EGMs

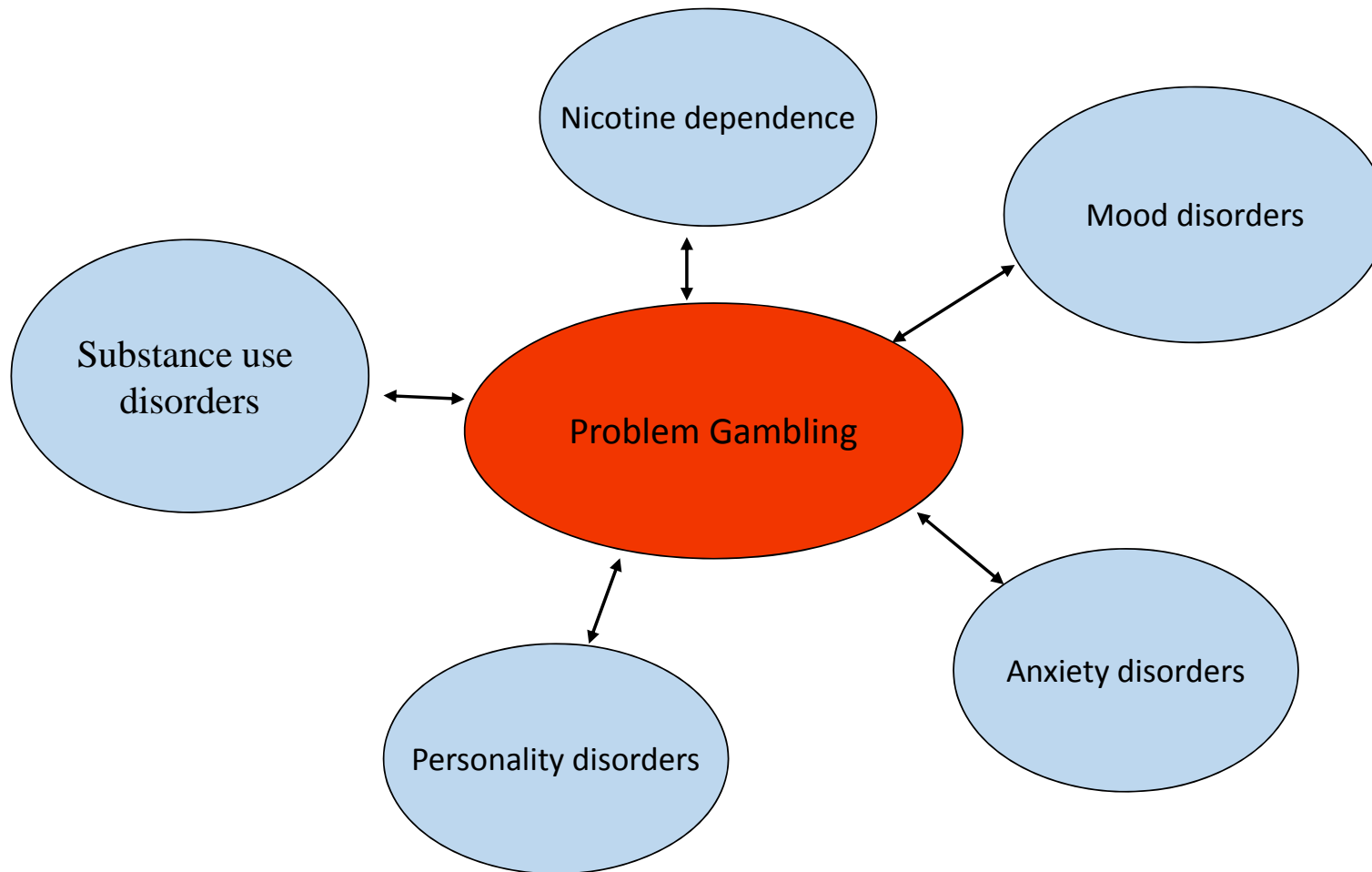
**2.5%** of NZ  
population

Over **\$2**  
**billion**  
dollars

**112,800** NZ  
adults and  
**89,100**  
adults

**\$843**  
**million**

# Problem gambling is associated with various psychological disorders



# Forms of gambling



# Forms of gambling and problem gambling

- Among all forms of gambling, Electronic gaming machines (EGM) gambling are closely associated with PG.

# Decision-making and problem gambling

- Problem gamblers prefer **high-risk, high-reward, short term gains** and **less adaptive strategies** during decision-making task.
- Poorer decision-making among non-strategic (e.g. EGM) gamblers compared to strategic (e.g. sports betting) gamblers.



# Research objectives

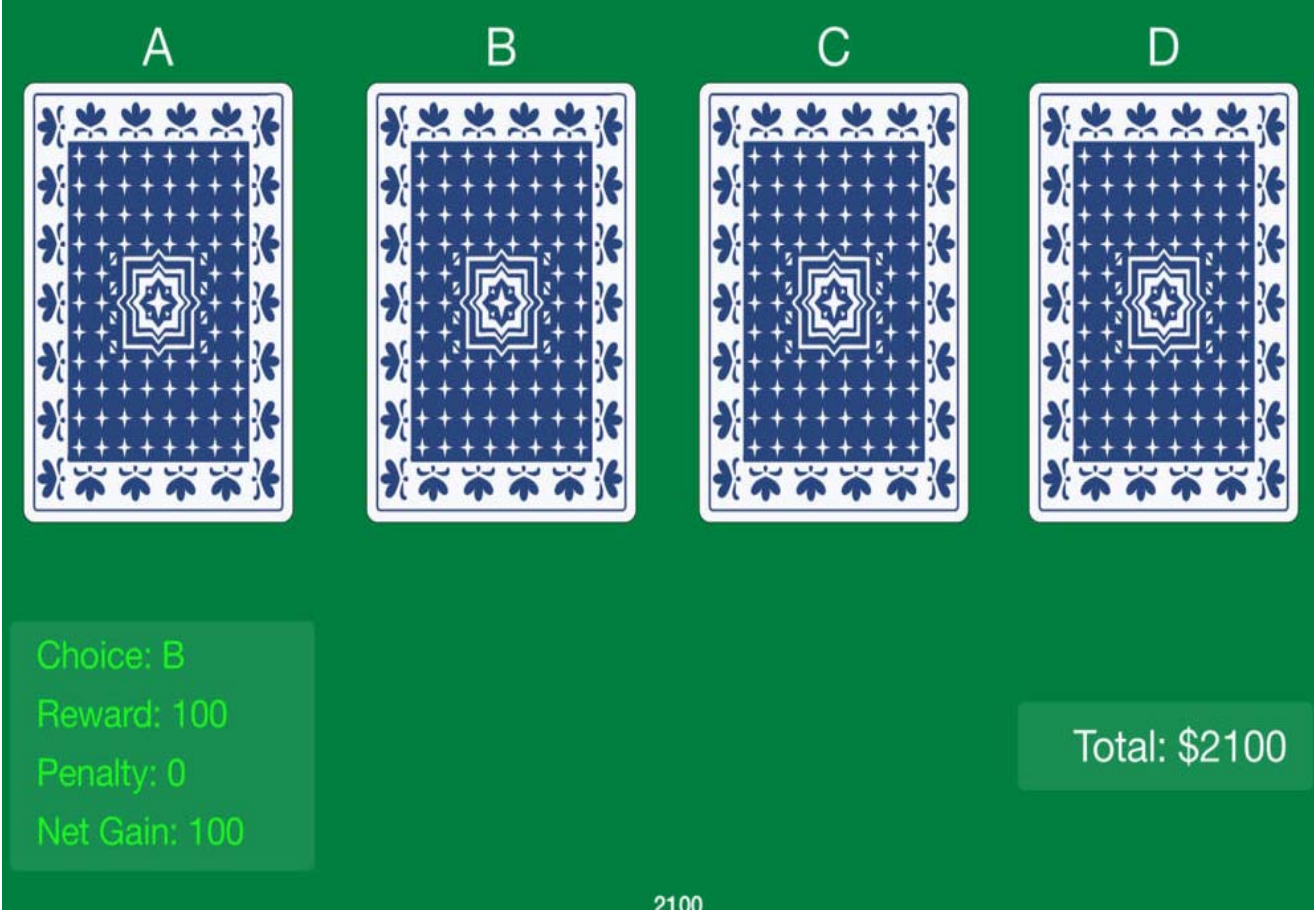
- To find association between concurrent psychological disorders (social anxiety, anxiety, depression and alcohol use) among problem gamblers with different forms and intensity of gambling
- To examine its relationship to decision-making ability using Iowa gambling task (IGT).

# Research method

- Cross-sectional study using online Survey using questionnaires
  - South Oaks Gambling screen (SOGS) to assess problem gambling (
  - Liebowitz Social Anxiety Scale (LSAS-SR) to measure social anxiety
  - Depression, Anxiety and Stress scales (DASS-21) to assess anxiety, depression and stress
  - Alcohol use disorder identification test (AUDIT) to measure alcohol use
  - Experimental task (Iowa Gambling Task)
- <http://egmplay.uoa.auckland.ac.nz/>

# Iowa Gambling Task (IGT)

- In the IGT, participants choose from 4 decks of cards, two of which has a more advantageous schedule of rewards compared to other two.



The image shows a screenshot of the Iowa Gambling Task interface. It features four decks of cards labeled A, B, C, and D, each with a different pattern of symbols. Below the decks, a green box displays the following information:

Choice: B  
Reward: 100  
Penalty: 0  
Net Gain: 100

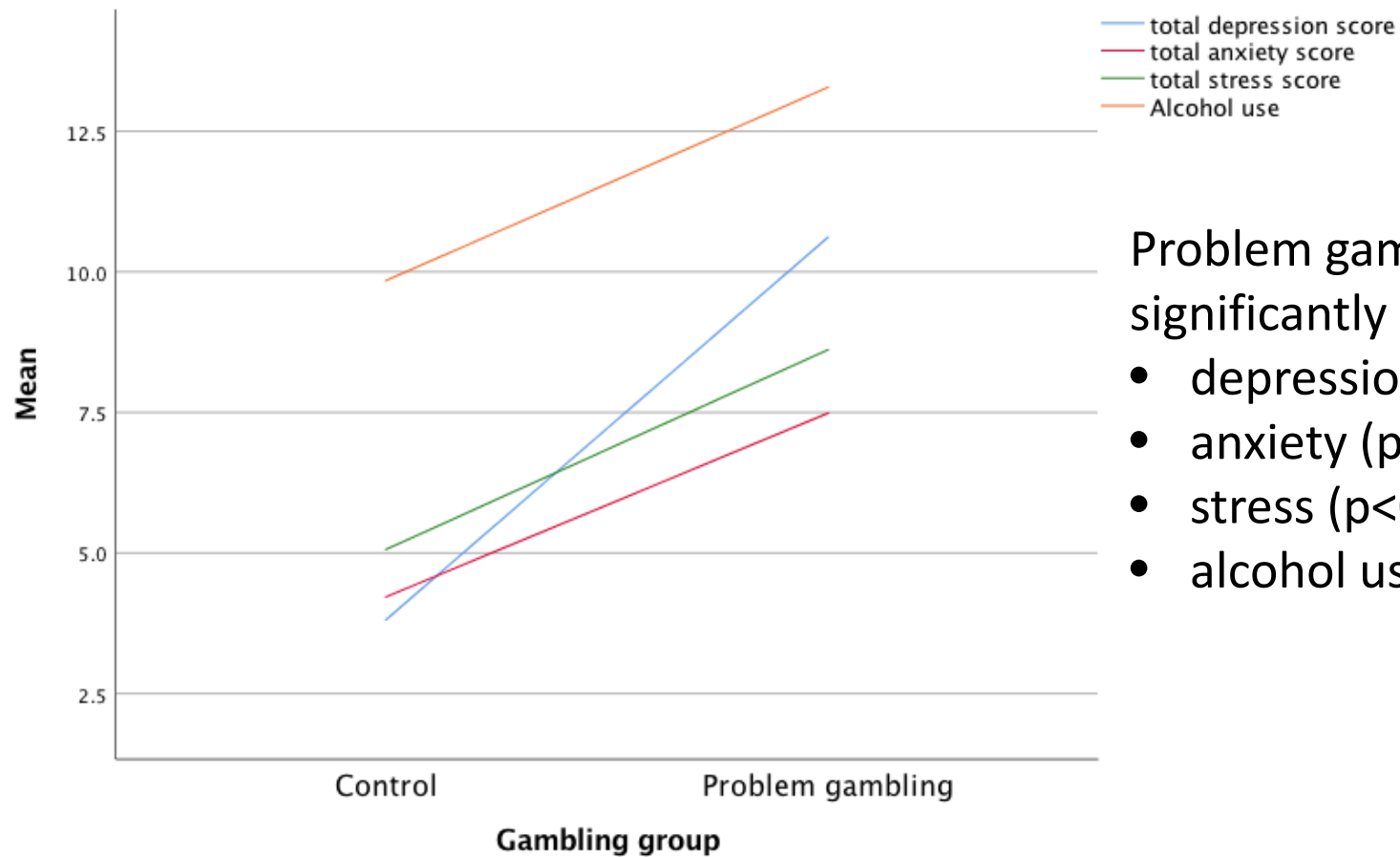
Total: \$2100

2100

# Participants

	Control group	Problem gambling group
<b>Total participants (n = 71)</b>	32	39
<b>Mean (age)</b>	29	36
<b>Gender</b>	F=16, M16	F=19, M=20
<b>Employment</b>		
• Employed	23	25
• Student	6	5
• Unemployed	2	4
• Unable to work	1	5
<b>Ethnicity</b>		
• European	22	28
• Maori	2	1
• Pacific	0	5
• Asian	3	2
• Middle eastern	3	1
• Latin American	1	1
• Others	1	1

# Association between PG and other disorders

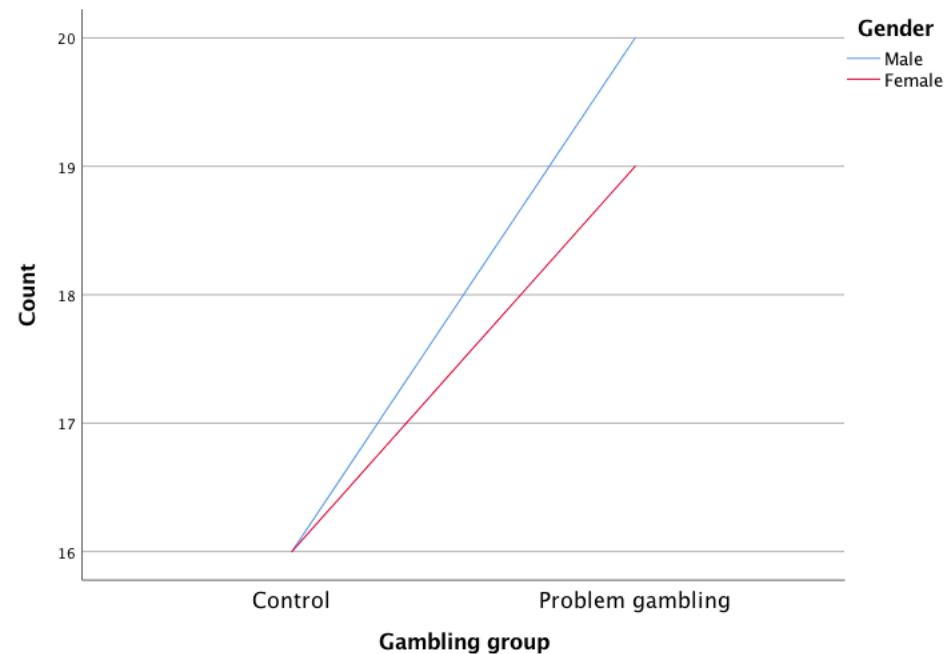


Problem gambling was significantly correlated with:

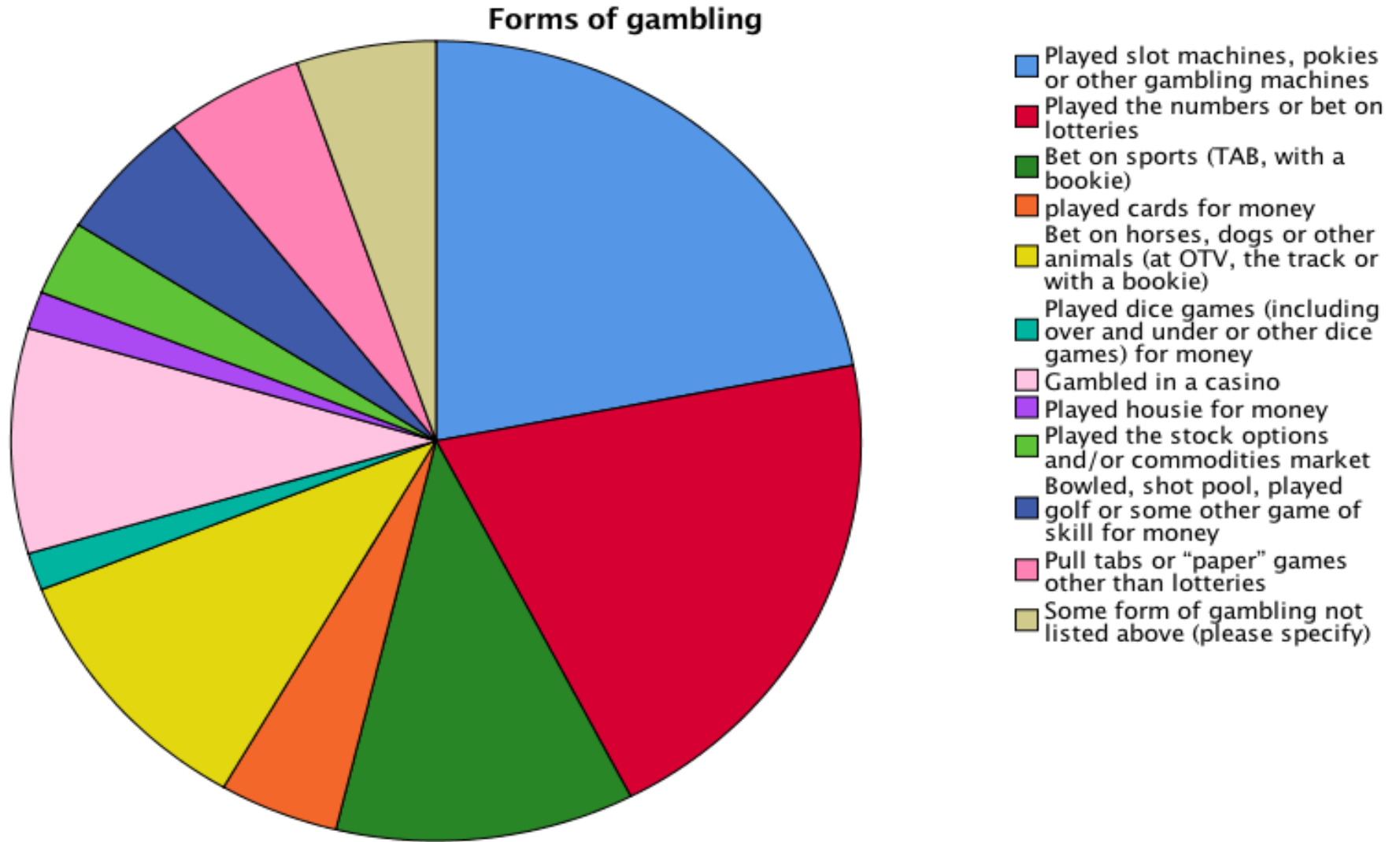
- depression ( $p < 0.00$ )
- anxiety ( $p < 0.01$ )
- stress ( $p < 0.00$ )
- alcohol use ( $p < 0.01$ )

# Association between PG and other disorders

- No association between social anxiety and problem gambling
- No association between gender and severity of problem gambling or forms of gambling.

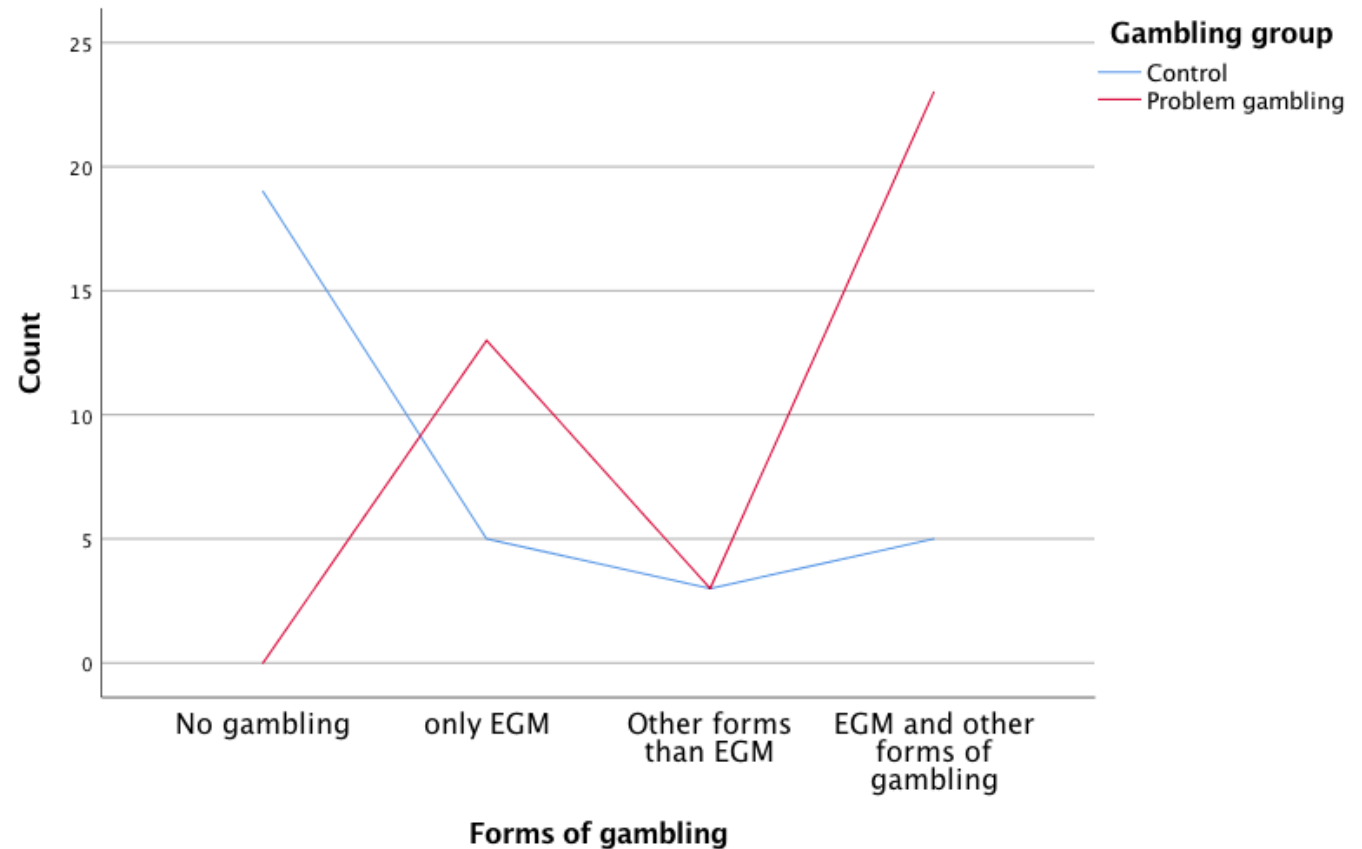


# Forms of gambling in current study



# Forms of gambling and problem gambling

- In line with literature, EGM players scored higher on SOGS compared to other forms of gambling

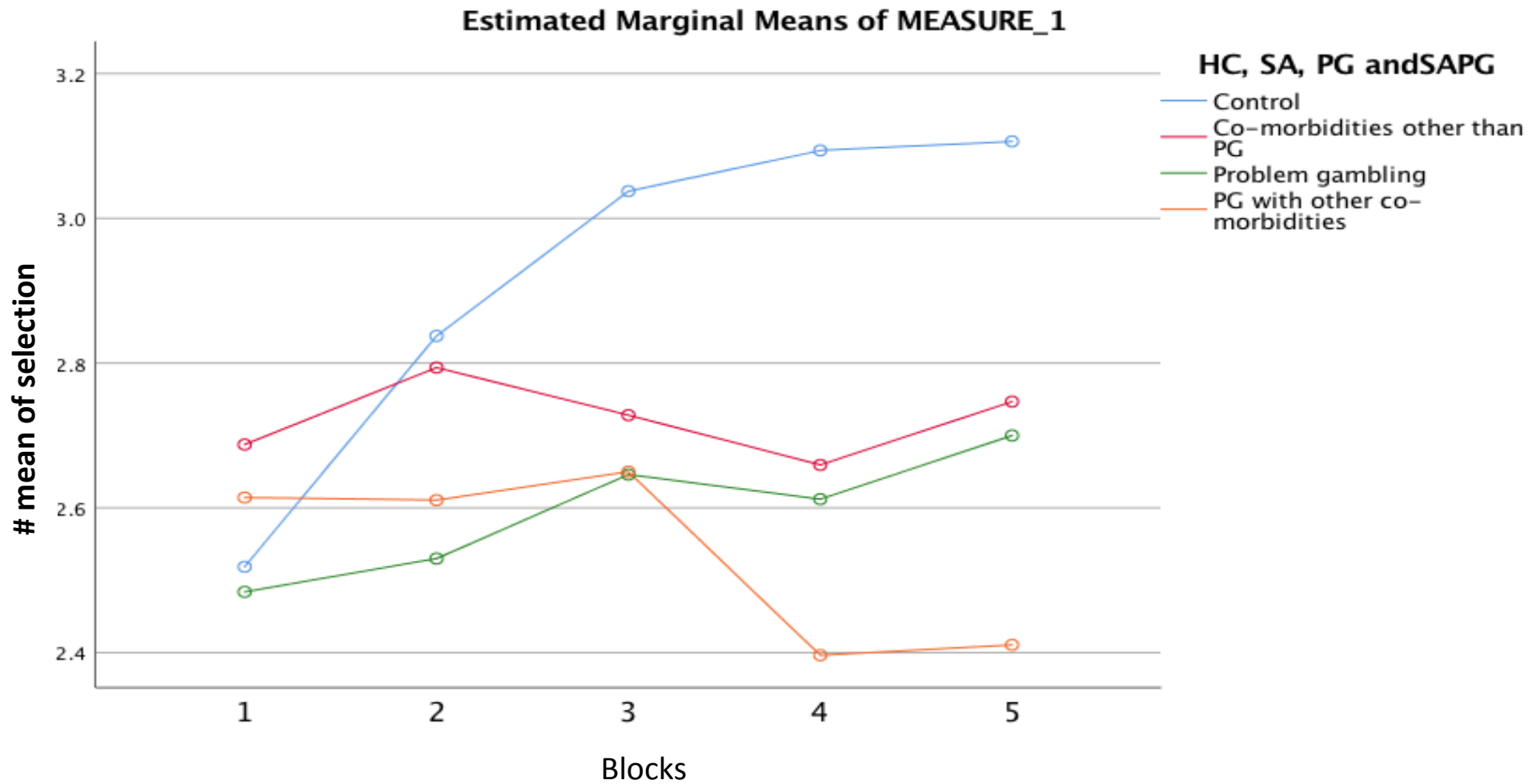




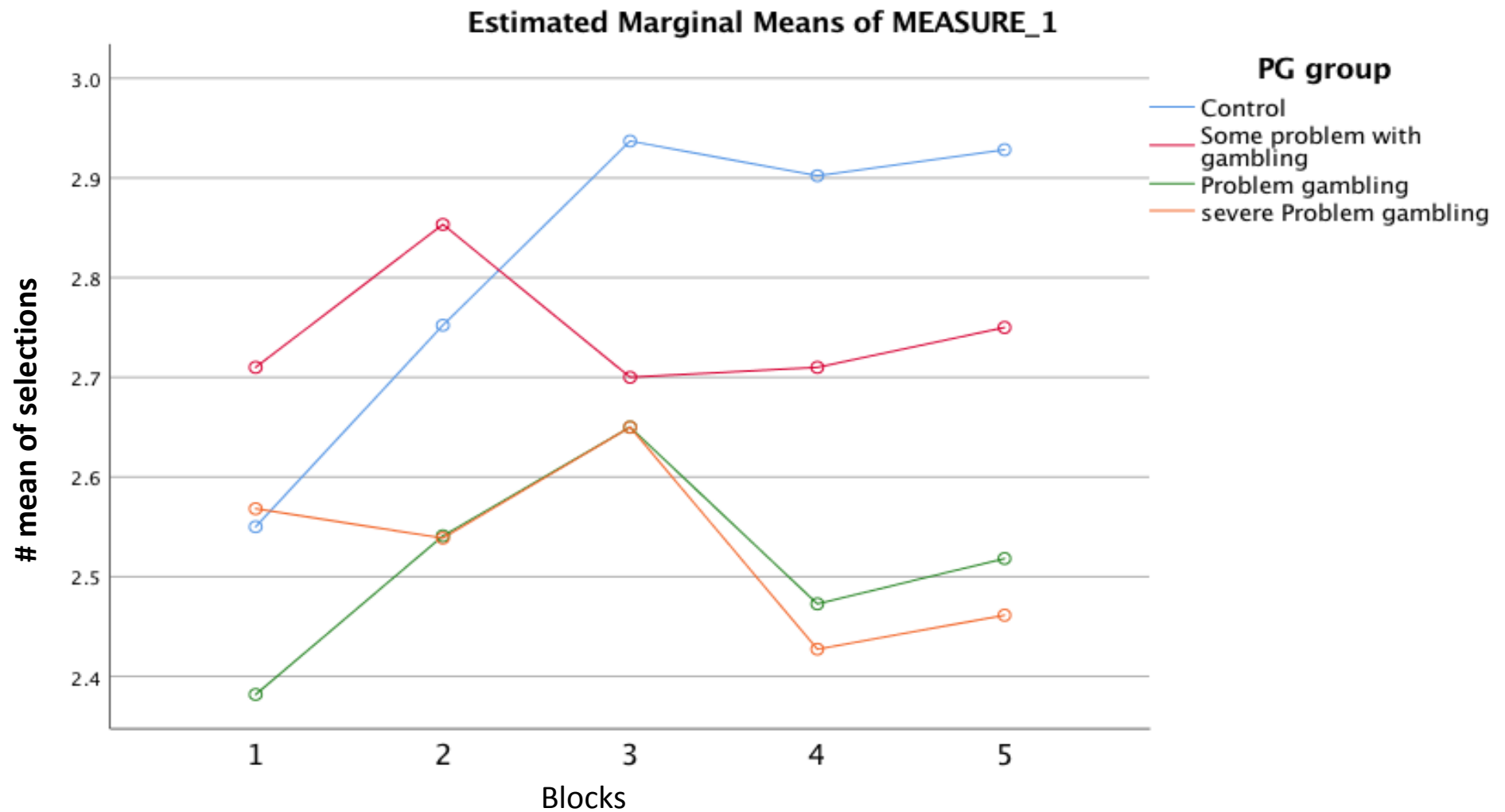
# Analysis of IGT

- General linear model analysis of changes in mean difference between advantageous and disadvantageous choices during the Iowa Gambling Task (net intermediate scores in blocks of 20 trials) for:
  - Controls
  - Controls with co-morbidities other than problem gambling
  - Problem gamblers
  - Co-morbid problem gambling with psychological co-morbidities subjects

# Problem gambling, co-occurrence on IGT



# Severity of gambling and decision-making



# Discussion

- This study successfully defines the patterns of concurrent disorders among problem gamblers in NZ population as observed elsewhere.
- Decision-making in this study has allowed for analysis of subgroups of problem gamblers with concurrent disorder where unlike controls the other three groups seem to have difficulties to learn the strategies of task or to act upon this knowledge.
- The understanding of decision-making serves to be important as severity in decision-making deficiency may be particularly high risk for relapse.

# Discussion

- In contrast to expectations and previous findings, there was no relationship found between social anxiety and problem gambling.
- Similarly, the previous findings suggest preference of gaming machines among women, however, this study did not find any statistical significance between gender and choice of gambling.

## Strengths

- First study to analyze community samples of gamblers
- Includes various cultures and gender-balanced
- Involved an online task to measure cognitive ability

## Limitations

- Reliance on cross-sectional data
- Small sample
- Subjective measures
- Online data collection

# Conclusion

- Overall, this research shows that problem gambling co-occurs with psychological disorders and the co-occurrence is associated with greater severity of gambling problems
- The people with concurrent disorders and problem gambling have impaired decision-making ability and the severity of problem gambling impacted decision-making ability.
- These findings underscore the need to address concurrent disorders in assessment and individualized treatments for problem gambling.

# Future direction of research

- Continue with data collection for this study
- Study 2 using qualitative method of data collection focusing on electronic machine gamblers.



# Questions Please !



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visit my online survey or participate  
<http://egmplay.uoa.auckland.ac.nz/>

# Reference

Abbott, M., Bellringer, M., Garrett, N., & Mundy-McPherson, S. (2014). New Zealand 2012 national gambling study: Gambling harm and problem gambling. *Report Number Two. Auckland: Gambling and Addictions Research Centre, Auckland University of Technology.*

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