

15th Gambling Risk Taking  
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AN IMPROVED PATHWAYS DEVELOPMENT MODEL  
OF PROBLEM GAMBLING:

**A SUMMARY OF 11 STUDIES  
IN HONG KONG & MACAU**

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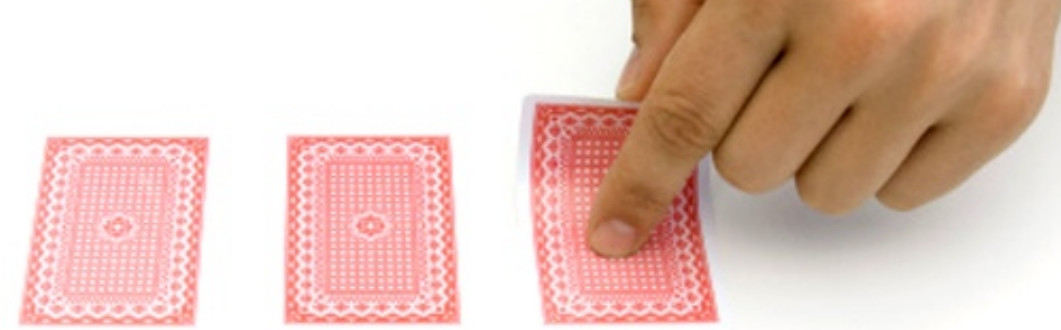


# INTRODUCTION

- ◆ The rationale of this study came from a casual meeting of our supervisor Dr. Chan Chi Chuen and Professor Blaszczynski on a bus after the 2009 Reno conference.
- ◆ On the bus, C. C. promised Mr. Blaszczynski that he would validate the pathways model in Hong Kong and Macau. And in the next 5 years, Dr. C.C. Chan and his students conducted 11 research projects on problem gambling in Hong Kong and Macau.
- ◆ Purposes of current study
  - ◎ To arrive on a summary finding from 11 studies on problem gambling
  - ◎ To validate the pathways development model proposed by Blaszczynski & Nower (2002)
  - ◎ To investigate what particular cultural factors in Hong Kong and Macau have contributed to problem gambling



# THEORETICAL FRAMEWORK



- ♦ Integrated model of pathways development (Blaszczynski & Nower, 2002)

Pathway 1:  
**Behaviorally  
Conditioned Problem  
Gamblers**



Pathway 2:  
**Emotionally  
Vulnerable Problem  
Gamblers**



Pathway 3:  
**Antisocial,  
Impulsivist Problem  
Gamblers**







# THEORETICAL FRAMEWORK

## ECOLOGICAL FACTORS

- Increased Availability
- Increased Accessibility

## ECOLOGICAL FACTORS CONDITIONING

### Arousal/ Excitement

- Subjective excitement
- Physiological Arousal

### Cognitive Schemas

- Irrational Beliefs
- Illusion of control

## HABITUATION

- Pattern of habitual gambling established

## CHASING

- Chasing wins, losses
- Losing more than expected

## PROBLEM AND PATHOLOGICAL GAMBLING

## ◆ Behaviorally-Conditioned Gamblers

- Display minimal levels of pre-morbid psychopathology
- Exhibit depression or anxiety as a consequence of chasing and financial loss
- Gamble for actions, fun and excitement



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## EMOTIONAL VULNERABILITY

### Childhood disturbance Personality

- Chasing wins, losses
- Losing more than expected

### Mood Disturbance

- Depression
- Anxiety

### Poor Coping/ Problem-solving

- Life Stresses
- Substance Use

## BIOLOGICAL VULNERABILITY

### Biochemical

- Serotonergic
- Noadrenergic
- Dopaminergic

### Cortical

- EEG differential

## CHASING

- Chasing wins, losses
- Losing more than expected

## ◆ Emotionally-Vulnerable Gamblers

- More prevalence among female gamblers
- Significant degree of pre-morbid anxiety and/or depression
- Poor coping strategies, poor problem- solving skills
- Gamble to escape or dissociate from negative moods

## PROBLEM AND PATHOLOGICAL GAMBLING



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### Poor Coping/ Problem-solving

- Life Stresses
- Substance Use

## CHASING

- Chasing wins, losses
- Losing more than expected

## ♦ Antisocial-Impulsivist Gamblers

## BIOLOGICAL VULNERABILITY

### Biochemical

- Serotonergic
- Noadrenergic
- Dopaminergic

### Cortical

- EEG differential

## IMPULSIVEIST TRAITS

### Neuropsychological

- ADHD
- Impulsivity

### Anti-social behaviour Substance abuse

- ◎ Highly disturbed individuals with biological vulnerability
- ◎ Poor interpersonal relationships, substance abuses, attention deficits, anti-social traits, early criminal records
- ◎ Undesirable family background, poor schooling and conduct problems

## PROBLEM AND PATHOLOGICAL GAMBLING



# METHODOLOGY

- ◆ The current study is a meta-analysis of the studies undertaken by the Dr. C.C. Chan and his research teams in Hong Kong and Macau
- ◆ It covers a series of small- scale qualitative studies carried out during the period of 2008-2013..



# METHODOLOGY

- ◆ All together 190 participants ( M=101, F=89, mean age: 40). There were 11 studies; all follow similar procedures. All participants were interviewed using semi-structured questionnaires that covered their developmental history, gambling habits and lifestyles.
- ◆ The interviews were based on the DSM-IV-TR (APA, 2000) & the PGSI (Ferris & Wayne, 2001)
- ◆ Some studies were included the administration of Beck Depressive Scale to assess the emotional states of participants





# CROSS-SECTIONAL STUDIES

◆ This study reviews those data from 11 qualitative studies.

## 1. Casino Players in Macau (*N*=15, 10M, 6F, age: 24-53)

Chan, C. C. & Ohtsuka, K. (in press).  
The Clinical and Social Construction of the  
Paichais of Macau. *The Asian Journal of  
Gambling Issues and Public Health*.

## 2. Young Sport Bettors (*N*=20, 19M, 1F, age: 16-26)

Au Yeung, C. S., Lam, P. Y. & Chan, C. C. (2011).  
Soccer betting in Hong Kong: A profile of young  
bettors. In *Conference Proceedings of the  
International Conference on Gaming Industry  
and Public Welfare 2011, Beijing, China* (pp.  
276-283). ISBN: 978-99965-2-036-5.

## 3. Housewives of Low Income Groups (*N*=20, age: 26-55)

Hui, H.K. Chan C.Y., Cheung, K., Hui, M., & Chan, C. C.  
(2012). Superstitious beliefs among mahjong players in  
Hong Kong. Paper presented at the 4th International  
Gambling Conference, Auckland, New Zealand

## 4. Day Traders in Stock Markets (*N*=16, 10M, 6F, age: 20-55)

Lo, O. T., Au Yeung, C. S., So, H. S., & Chan, C. C. (2012).  
Traders as Problem Gamblers: The Psychology of Traders  
in Hong Kong. Paper presented at the 9th European  
Conference on Gambling Studies and Public Issues,  
Loutraki, Greece

# CROSS-SECTIONAL STUDIES

◆ This study reviews those data from 11 qualitative studies.

## 5. Gamblers with Criminal Background

(*N*=11, 10M, 1F, age:34-58)

Khiatani, P. V., Yick, K. S. C., Tse, T. H. M., & Chan, C. C. (2011). Pathways development of problem gamblers with criminal background: Validation of Blaszczyński and Nower (2002) model. Paper presented at the 21st National Association for Gambling Studies Annual Conference, Melbourne, Australia.

## 6. Male Sex Workers and Taxi Drivers (*N*=20, age: 34-48)

Khiatani, P.V., Chan, Y., Yick, K. S. C., & Tse, T. H. M., & Chan, C. C. (2012). The pathways of gambling development of male sex workers and taxi drivers in Hong Kong. Paper to be presented at the 22nd National Association for Gambling Studies Annual Conference, Tasmania, Australia.

## 7. Female Sex Workers (*N*=20, age: 34-60)

Chan, Y., Tse, T. H. M., Khiatani, P.V., Yick, K. S. C., & Chan, C. C. (2012). Prostitution, Gambling, and Drugs: An investigation into co-addictions and pathways development of gambling among women sex workers in Hong Kong. Paper presented at the 9th European Conference on Gambling Studies and Public Issues, Loutraki, Greece.



# CROSS-SECTIONAL STUDIES

◆ This study reviews those data from 11 qualitative studies.

## 8. Cargo Labors

(*N*=25, *M*=22, *F*=3, age: 22-50)

Chan, Y. Y. & Chan, C. C. (2012, November). Pathways development of Problem Gamblers and Implications for Treatment Concerns In The First Asia Pacific Conference on Gambling Commercial Gaming Research, Macau.

## 10. Gambling Anonymous

(*N*=17, 15M, 2F, age: 22-58)

Chan, C.C. & Ohtsuka, K. (2011, October). Pathways to Development of Problem Gambling among Chinese Gamblers in Hong Kong: Validation of the Blaszczynski and Nower (2002) Model. Asian Journal of Gambling Issues and Public Health, Vol. 2, No.1, October, 2011, 17-28

## 9. Filipino Female Domestic Helpers

(*N*=11, age: 29-53)

Chiu, S.L., Wong, P.W. & Hui, L.C. (2012, October). Pathways Development of Problem Gambling with Filipino Female Gamblers in Hong Kong. (Unpublished manuscripts)

## 11. Elderly & Retirees

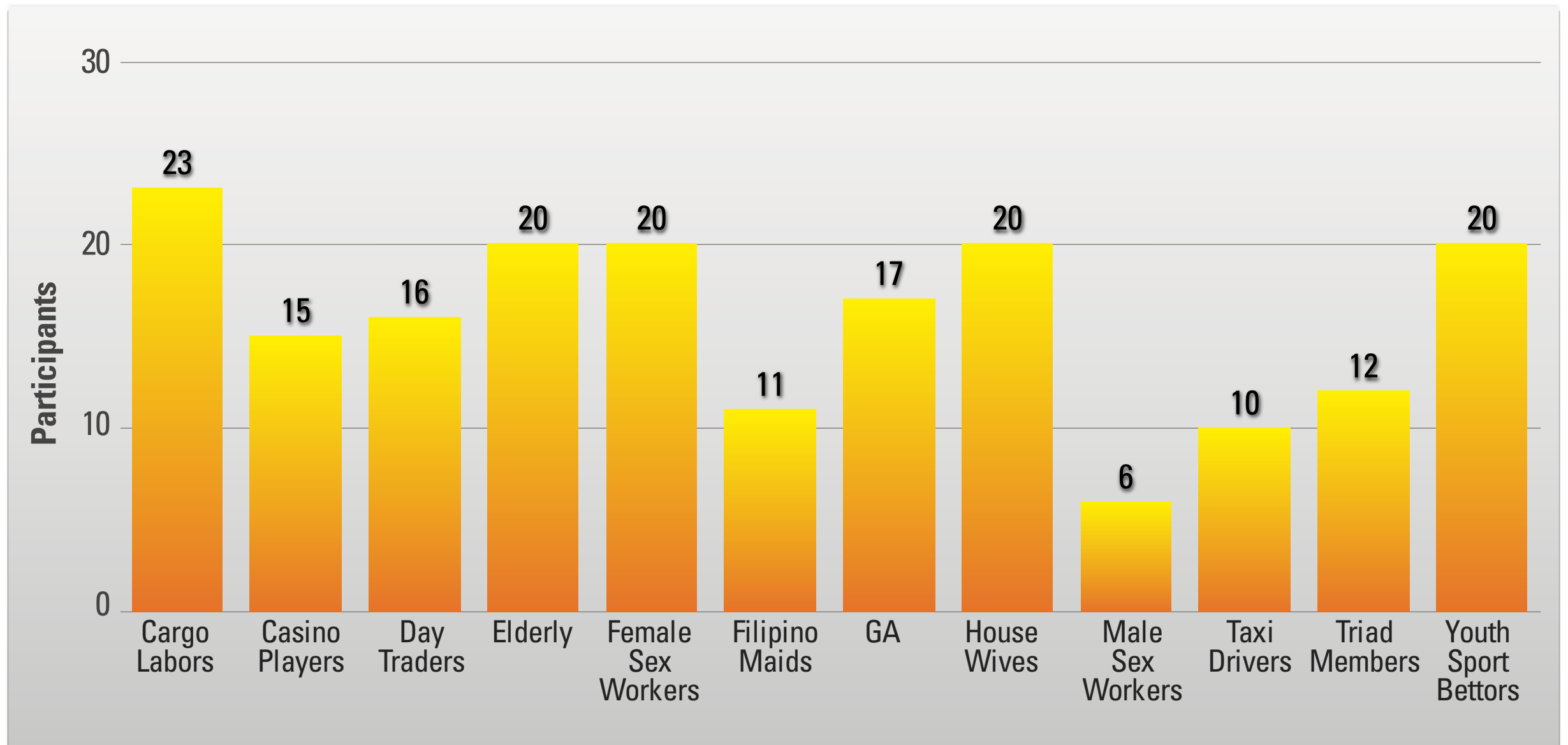
(*N*=20, 12M, 8F, age: 55-85)

Lee, W., Lee, L.F., Law, F., Tso, K.B. & Chan, C.C. (December, 2012). Gambling Behaviors Among Elderly in Hong Kong. Gaming Research Association, Issue 8, 20-26

All studies follow similar methodology in data collection

# RESULTS

## ◆ Summary of Participants (By sectors):

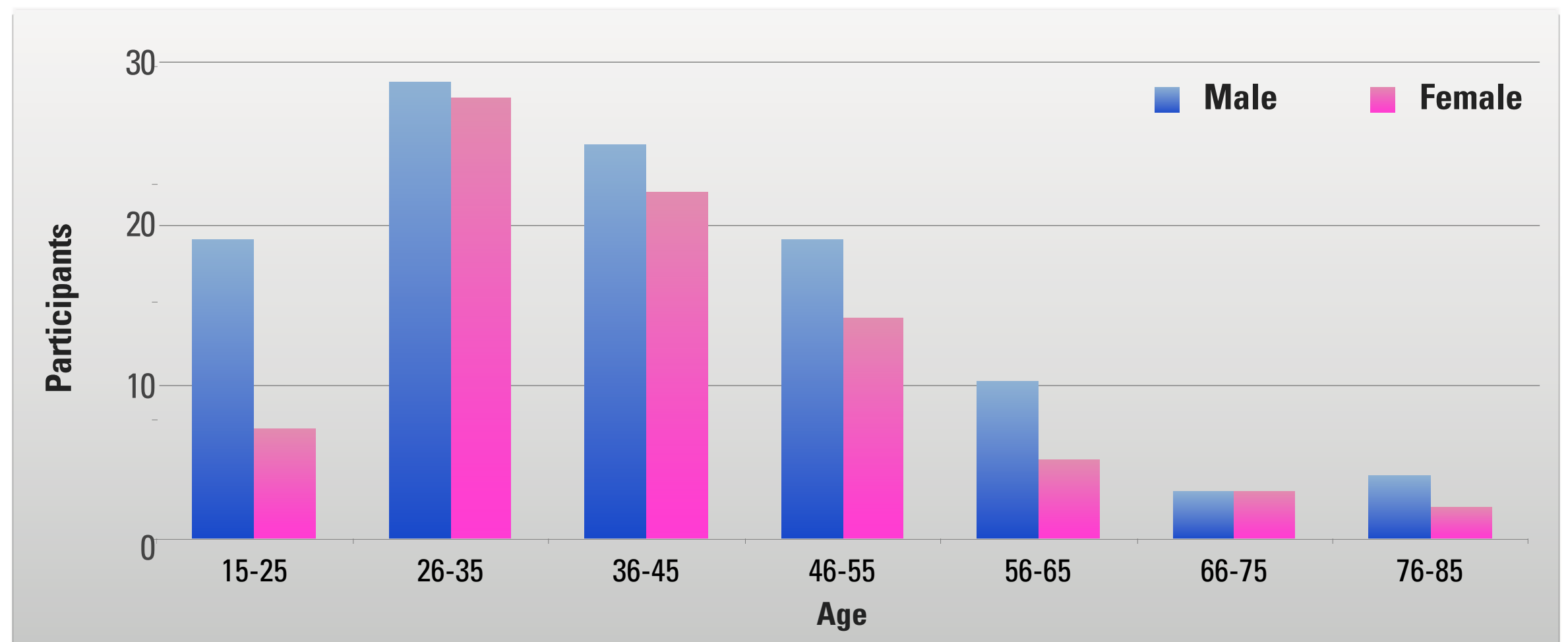




# RESULTS

## ◆ Descriptive Statistics of Participants ( $N=190$ ):

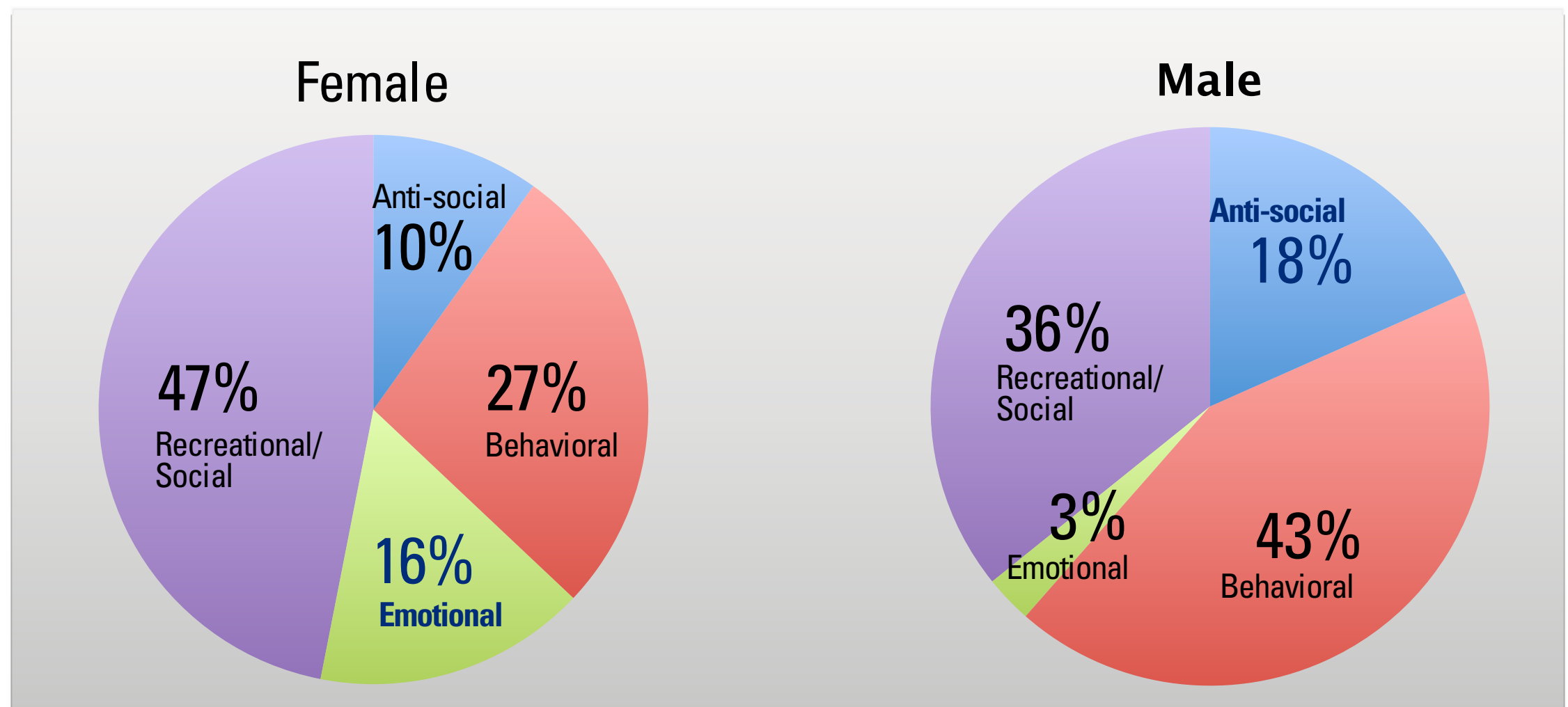
Average	Female (N=89)	Male (N=101)	Grand Average
Age	39.87	39.72	39.79
PGSI	7.80	9.11	8.57



# RESULTS

## ◆ Descriptive Statistics of Participants ( $N=190$ ):

Classifications	Recreational	Behavioral	Emotional	Anti-social
Female ( $N=89$ )	38	22	13	8
Male ( $N=101$ )	39	47	3	20





# RESULTS ♦ Behavioral-Conditioned Gamblers

## ECOLOGICAL FACTORS

- Increased Availability ✓
- Increased Accessibility ✓
- + Peer Influence in work & school

## ECOLOGICAL FACTORS CONDITIONING

### Arousal/ Excitement

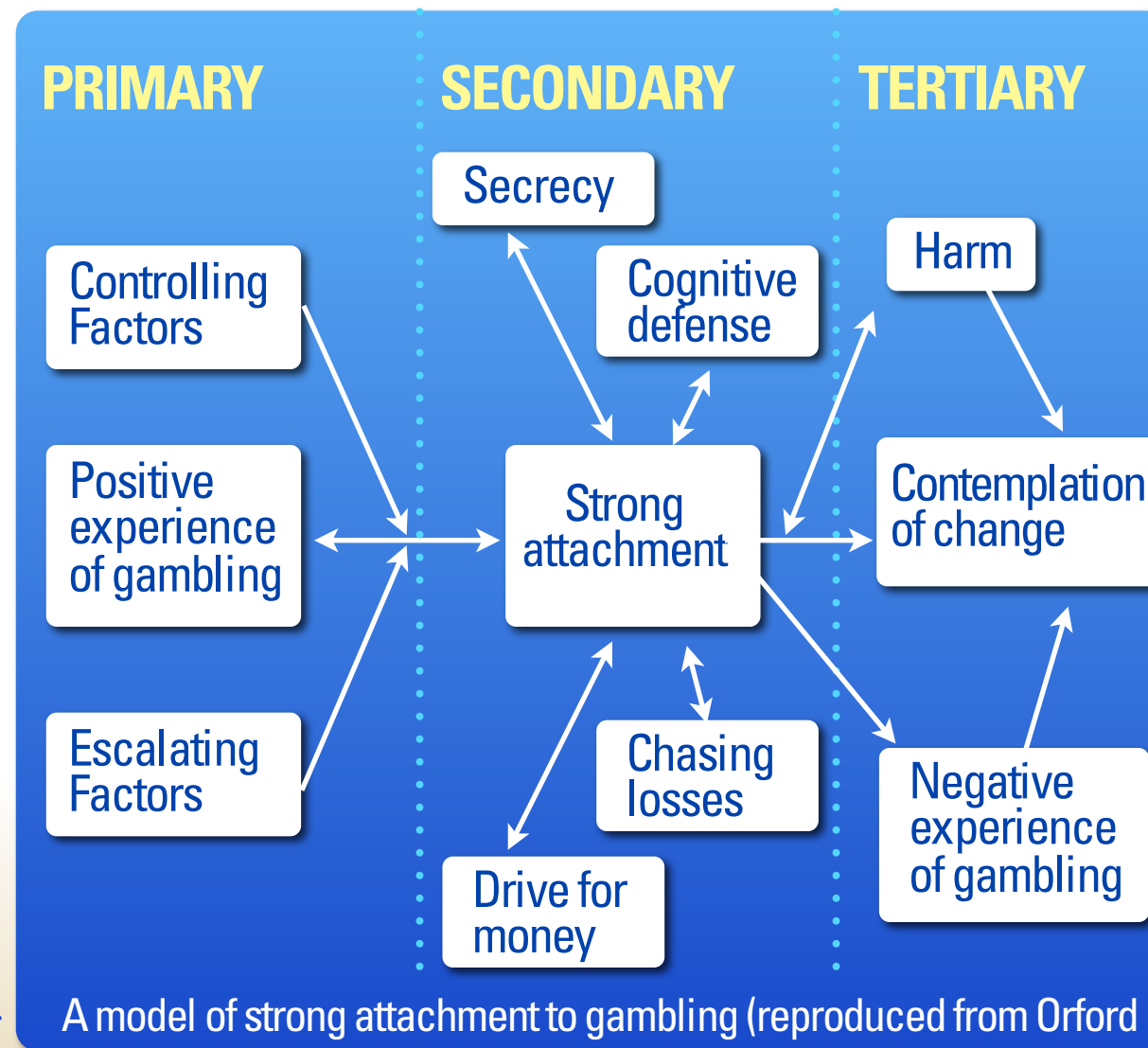
- Subjective excitement ✓
- Physiological Arousal ✓

### Cognitive Schemas

- Irrational Beliefs ✓
- Illusion of control ✓

## HABITUATION

- Pattern of habitual gambling established ✓



## PROBLEM AND PATHOLOGICAL GAMBLING

### CHASING

- Chasing wins, losses ✓
- Losing more than expected ✓
- + Significant Impaired Control of Gambling

# RESULTS ♦ Emotionally-Vulnerable Gamblers

## ECOLOGICAL FACTORS

- Increased Availability ✓
- Increased Accessibility ✓

## ECOLOGICAL FACTORS CONDITIONING

### Arousal/ Excitement

- Subjective excitement ✓
- Physiological Arousal ✓

### Cognitive Schemas

- Irrational Beliefs ✓
- Illusion of control ✓

## HABITUATION

- Pattern of habitual gambling established ✓

## EMOTIONAL VULNERABILITY

### Childhood disturbance Personality

- Chasing wins, losses ✓
- Losing more than expected ✓

### Mood Disturbance

- Depression ✓
- Anxiety ✓

### Poor Coping/ Problem-solving

- Life Stresses ✓
- Substance Use ✓

✚ The depressive moods can turn inward that contribute to the development of borderline personality disorder

## BIOLOGICAL VULNERABILITY

### Biochemical

- Serotonergic ✓
- Noadrenergic ✓
- Dopaminergic ✓

### Cortical

- EEG differential ✓

## PRIMARY

Controlling Factors

Positive experience of gambling

Escalating Factors

## SECONDARY

Secrecy

Cognitive defense

Strong attachment

Drive for money

Chasing losses

## TERTIARY

Harm

Contemplation of change

Negative experience of gambling

## PROBLEM AND PATHOLOGICAL GAMBLING

## CHASING

- Chasing wins, losses ✓
- Losing more than expected ✓

A model of strong attachment to gambling (reproduced from Orford)



# RESULTS ♦ Antisocial-Impulsivist Gamblers

## ECOLOGICAL FACTORS

- Increased Availability ✓
- Increased Accessibility ✓

## ECOLOGICAL FACTORS CONDITIONING

### Arousal/ Excitement

- Subjective excitement ✓
- Physiological Arousal ✓

### Cognitive Schemas

- Irrational Beliefs ✓
- Illusion of control ✓

## HABITUATION

- Pattern of habitual gambling established ✓

## EMOTIONAL VULNERABILITY

### Childhood disturbance Personality

- Chasing wins, losses ✓
- Losing more than expected ✓

### Mood Disturbance

- Depression ✓
- Anxiety ✓

### Poor Coping/ Problem-solving

- Life Stresses ✓
- Substance Use ✓

## BIOLOGICAL VULNERABILITY

### Biochemical

- Serotonergic ✓
- Noadrenergic ✓
- Dopaminergic ✓

### Cortical

- EEG differential ✓

## IMPULSIVEIST TRAITS

### Neuropsychological ✓

#### • ADHD ?

- Impulsivity

- Anti-social behaviour ✓
- Substance abuse ✓

## Attach gambling as daily habit

### PRIMARY

Controlling  
Factors

Positive  
experience  
of gambling

Escalating  
Factors

### SECONDARY

Secrecy

Cognitive  
defense

Strong  
attachment

Chasing  
losses

Drive for  
money

### TERTIARY

Harm

Contemplation  
of change

Negative  
experience  
of gambling

## PROBLEM AND PATHOLOGICAL GAMBLING

## CHASING

- Chasing wins, losses ✓
- Losing more than expected ✓

A model of strong attachment to gambling (reproduced from Orford)

# DISCUSSIONS

- ◆ The B & N can adequately explain and distinguish the pathways development of all the problem gamblers. However, we argue that certain new elements should be added to improve the model.
- ◆ Extra findings:
  - ◎ More time involvement in gambling create more impaired control of gambling
  - ◎ Sub-cultural influence can shape gambling behaviors
  - ◎ Alcohol consumption is insignificant in problem gambling in all three pathway





# DISCUSSIONS

## ◆ Time involvement & impairment of control

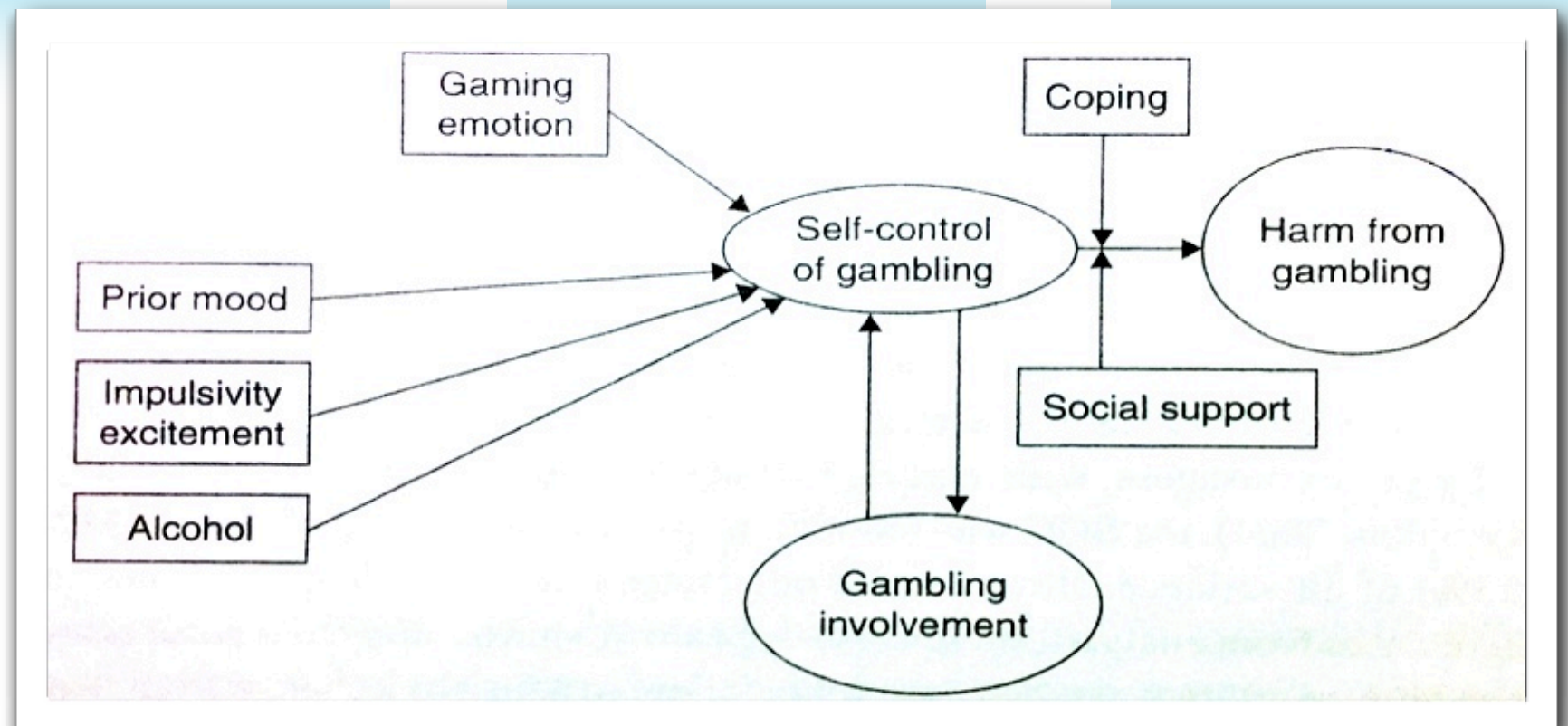
◎ Longer time involvement

◎ Deteriorate of self control

◎ More impulsivity

◎ More severe problem gambling

◎ Alcohol consumption is insignificantly related to problem gambling



Variables contributing to the development of level of involvement and impaired control of gambling: main study (Dickerson, 2001)





# THANK YOU!

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