



# Comparing Longitudinal Studies of Gambling: Methods & Findings

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# What do we know about risk factors for PG?

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- Vast majority of research carried out on PG risk factors has involved cross-sectional surveys
- PG status at a single point in time statistically correlated with behaviors & characteristics assessed at the same time
- Cannot resolve the “chicken and egg” problem
  - Does PG precede other disorders?
  - Do other disorders precede PG?
  - Or does one underlying condition account for both?





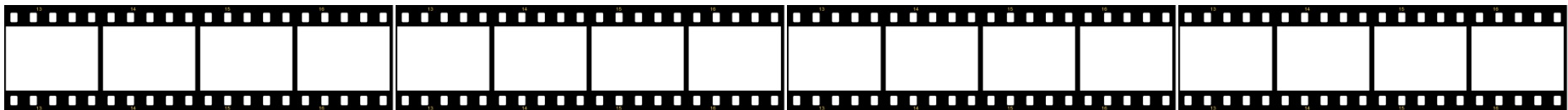
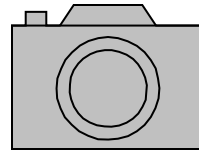
# The changing face of problem gambling

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- Early population surveys in numerous jurisdictions identified the following risk factors:
  - Male gender
  - Age under 30
  - Low income
  - Single marital status
  - Low occupational status
  - Less formal education
  - Residing in large cities
  
- “Feminization of problem gambling”
  
- “Bimodal groups”
  - African Americans in US
  - Pacific Islanders in New Zealand
  - Eastern European immigrants in Sweden

# Prevalence surveys provide 'snapshots' of a dynamic process

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# Growing number of longitudinal studies conducted internationally

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Study Population	Waves	Jurisdiction	Researchers
Children	2	Canada	Pagani, Derevensky & Japel, 2009
Adolescents & parents	2	Canada	Dane et al, 2008
Adolescents	6	United States	Barnes et al
Adolescents	6	Montreal	Vitaro et al

# Young adults

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Study Population	Waves	Jurisdiction	Researchers
Young adults	2	Canada ADHD study	Breyer et al, 2009
Young adults	2	Dunedin cohort	Slutske et al, 2005
Young adults	3	Minnesota	Winters et al, 2002, 2005
Young adults	4	Australia	Delfabbro, Winefield & Anderson, 2009
College – young adult	4	Midwest US	Slutske, Jackson & Sher, 2003
College – young adult	4	Midwest US (1 gambling item)	Goudriaan et al, 2009
Young adults	6	Australia health study	Hayatbakhsh et al, 2006

# Special populations

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Study Population	Waves	Jurisdiction	Researchers
Regular EGM players	6 (6 months)	Australia	Dickerson, Haw & Shepherd, 2003
At-risk & help-seeking gamblers	6 (12 months)	Canada	Wiebe et al, 2009
Scratchcard players	2	Netherlands	DeFuentes-Merillas et al, 2004
Regular VLT players	2	Nova Scotia	Schrans, Schellinck & Walsh, 2000
Casino employees	3	United States	Shaffer & Hall, 2002

# Adult studies

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Study Population	Waves	Jurisdiction	Researchers
Adults	2	Ontario	Wiebe et al, 2003a, 2003b
Adults	2	New Zealand	Abbott, Williams & Volberg, 2004
Older low-income adults	3	United States (1 gambling item)	Vander Bilt et al, 2004



# Adult studies

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Study Population	Waves	Jurisdiction	Researchers
Adults	3	Quebec	Kairouz et al (analysis underway)
Adults	4	Alberta LLLP	el-Guebaly et al (analysis underway)
Adults	5	Ontario QERI	Williams et al (analysis underway)
Adults	4	Victoria	Billi et al (analysis underway)
Adults	6	Sweden	Romild et al (data collection & analysis underway)



# Methodological problems

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- While the number of longitudinal studies in the gambling field is growing, many of these studies suffer from serious methodological problems
  - Small sample size
  - Biased samples
  - Low retention / high attrition rates
  - Short study duration
  - No tracking of gambling parameters
    - one-time addition of a gambling module
  - Lack of qualitative input
    - poor understanding of personal perspectives & interpretations



# Methodological advances

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- Recent studies have included much larger samples
  - Representative of population at baseline
  - Significant resources dedicated to minimizing bias due to attrition
- Recent studies have longer duration
  - More fine-grained picture of transitions
  - Better sense of scope/scale of PG status changes
- Qualitative/in-depth input increasingly incorporated



# Methodological advances

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- Recent studies have included more sophisticated analytic approaches
  - Logistic regression
  - Multivariate analyses of variance
  - Hierarchical linear modeling
  - Individual & group trajectory analysis
  - Structural equation modeling w/latent variables
  - Latent class analysis & latent transitions btw classes
  - Survival analysis
- Missing data addressed via weighting & imputation
- Attrition analysis & group classification are elements of the best studies



# Key findings

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- Differentiating between proximal & distal factors
  - Recent gambling behavior/symptoms are better predictors of same behavior in subsequent years than more distant measures
- Gambling problems tend to resolve over time
- Different groups of gamblers characterized by different trajectories towards problem gambling
  - Different predictors for at-risk & problem gambling
  - Involvement in clusters of different gambling activities associated w/different levels of risk



# Key findings

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- Substantial attention has been paid to the relationship btw gambling & personality disorders
- Hazardous alcohol use has been identified as a key risk factor for PG in several studies
- Depression & non-productive coping styles have also been identified as key risk factors
  - Proximal rather than distal?
- Only two protective factors have been identified
  - Female gender
  - Engagement in religious activities



# Risk factors predicting PG development across two studies

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- Gambling in the past year on EGMs, casino table games, Internet
- Betting weekly on horse/dog races
- Poor health (physical, mental)
- Smoking
- Risky drinking habits
- Difficulties at work
- Changes in working conditions
- Loss of a close relative
- Changes in personal/HH finances



# Some implications for policy & practice

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- Some PGs are 'new' while others are 'relapsing'
  - Important when designing treatments
  - Relapsers may have more acute problems, other physical/mental disorders
  - New PGs may be more responsive to brief interventions, less intensive treatments
- Larger % of population has experienced difficulties than prevalence rates suggest
  - 'Natural selection' will be high in this group in wake of gambling introductions, expansions
  - Policy, regulatory safeguards needed to minimize 'natural selection'
  - Prevention, intervention safeguards needed to support PGs in remission or recovery & prevent development of new PGs



# For more information:

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