

Alberta Gambling
Research Institute's
20th Annual
Conference

April 27 - 29, 2021

Program





DAY

Program Schedule

1

Tuesday, April 27



9:00-9:10 am

Blessing

Elder Jackson Wesley - Bearspaw First Nation

9:10-9:30 am

Welcome

Ashley Robertson, Government of Alberta,
Treasury Board and Finance

Len Rhodes, Alberta Gaming, Liquor and Cannabis

Seamus O'Shea, Alberta Gambling Research Institute

Robert Williams, Conference Chair

AGRI National Study

Moderator: David Hodgins

Concurrent Session

9:30-10:30 am

Session 1

**The AGRI National Project:
Overview & Main Prevalence Findings**

Robert Williams

Posters

10:30-11:00 am

Session 2

Gambling in Canada: Behind the Numbers

Rhys Stevens

11:00-11:15 am

BREAK & NETWORKING ROOMS*

11:15-11:45 am

Session 3

**Responsible Gambling in Canada:
An Analysis of the RG Check Patron Surveys**

Darren Christensen

Note: All times
are Mountain
Daylight Time



DAY

Program
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Tuesday, April 27



11:45 am
-12:15 pm

Session 4

**Employee Awareness and Referrals:
Learning from Responsible Gambling Check Employee
Surveys**

Fiona Nicoll

12:15-1:00 pm

MID-DAY BREAK & NETWORKING ROOMS *

Moderator: Robert Williams

**Concurrent
Session**

1:00-1:30 pm

Session 5

**Problem Gambling and Problem Gambling
Recovery in Canada**

David Hodgins

Posters

1:30-2:00 pm

Session 6

**Where Settler Colonialism and Indigenous
Self-Determination Meet: The State of
Indigenous Gaming and the State of
Canada**

Yale Belanger

2:00-2:30 pm

Session 7

**One Year Impact of Cannabis Legalization
in Canada**

Dan McGrath



AGRI National Study Moderator: Fiona Nicoll		Concurrent Session
9:00-9:30 am	Session 8 The Etiology of Problem Gambling in Canada Robert Williams	Posters
9:30-10:00 am	Session 9 Impact of COVID on Gambling in Canada: A Prospective Study Carrie A. Leonard	
10:00-10:30 am	Session 10 Going Beyond 'Set a limit and stick to it' - Canada's First Lower Risk Gambling Guidelines Shawn Currie & Matthew Young	
10:30-10:45 am	BREAK & NETWORKING ROOMS*	
Gambling Provision Moderator: Yale Belanger		
10:45 am - 11:30 pm	Panel - Session 11 Future of Commercial Gambling Provision in Canada Steve Lautischer	

Note: All times are Mountain Daylight Time



11:30-12:15 pm

Panel - Session 12

Future of Indigenous Commercial Gambling Provision in Canada

Chief Darcy Dixon and Murray Marshall

12:15-1:00 pm

MID-DAY BREAK & NETWORKING ROOMS*

Moderator: Darren Christensen

Concurrent
Session

1:00-1:45 pm

Panel - Session 13

Future of Responsible Gambling in Canada

Eric Baich & Jamie Wiebe

Posters

Canadian Gambling Research

Moderator: Darren Christensen

1:45-2:15 pm

Session 14

Players' Arousal and Reward Signatures to Loot Boxes: "If it Looks Like a Duck and Walks Like a Duck, It's a Form of Gambling"

Mike Dixon

2:15-2:45 pm

Session 15

Loyalty Programs: Potentials for Harm and Possibilities for Harm-Minimization

Michael Wohl



Canadian Gambling Research - Concurrent Sessions

Moderator: Dan McGrath

Moderator: Carrie A. Leonard

Posters

9:00-9:30 am

Session 16

Gambling to Cope with Negative Emotions vs. Gambling to Cope with Stress: Longitudinal and Daily Diary Studies

Sherry Stewart

Session 17

Toward an Animal Model of Gambling

David Euston

9:30-10:00 am

Session 18

Youth sports wagering: Lessons Learned and Implications for Canadian Researchers and Policy Makers

Jeff Derevensky

Session 19

Exploring Trends in Canadian Gambling Research Publications: Alignment with the Conceptual Framework of Harmful Gambling over a 12-Year Period

Margo Hilbrecht

10:00-10:30 am

Session 20

Gambling Within Video Games: Update on New Developments and Risk Factors

Igor Yakovenko

Session 21

Testing the Effects of Monetary Format on Gambling Behaviour: The Need for Convergent Research

Luke Clark

Note: All times are Mountain Daylight Time

10:30-10:45 am **BREAK & NETWORKING ROOMS***

Moderator: Dan McGrath

Moderator: Carrie A. Leonard

Posters

10:45-11:15 am

Session 22

**COVID-19 and
Gambling; Impact and
Adaptation**

Nigel Turner

Session 23

**Concurrent Treatment
for Gambling
and Alcohol Use
Disorders and Their
Comorbidities:
Mechanisms of Change
with Congruence
Couple Therapy**

Bonnie Lee & Samuel
Ofori-Dei

11:15-11:45 am

Session 24

**Research for Solutions:
Two Indexes to Map
and Cap Gambling**

Élisabeth Papineau

Session 25

**Impact of Electronic
Bingo on Gamblers'
Reported Perceptions
and Behaviours.**

Serge Sévigny

11:45 am -12:15 pm

Session 26

**Using the Courts to
Prevent Gambling Harm:
Current Advances**

Rob Simpson

Session 27

**Gambling Fallacies
During the Pandemic**

Carrie A. Leonard

12:15-1:00 pm

MID-DAY BREAK & NETWORKING ROOMS*



Canadian Gambling Research - Concurrent Sessions

Moderator: Dan McGrath

Moderator: Carrie A. Leonard

Posters

1:00-1:30 pm

Session 28

**Incorporation and
Financial Constraints:
Evidence from Lottery
Winners**

Barry Scholnick

Session 29

**Confronting the
Windigo in Indigenous
Casinos: Theory and
Practice**

Darrel Manitowabi

1:30-2:00 pm

Session 30

**Poker Players as
a Distinct Subgroup
of Gamblers: Research
Findings and Practical
Implications**

Will Shead

Session 31

**Concurrent Recovery &
Addiction Substitution:
What Happens After
People Recover from
Gambling**

Andrew Kim

2:00-2:30 pm

Session 32

**Advancing the
Pathways Model:
Financially Focused
Self-concept
and Erroneous
Beliefs as Core
Psychopathologies in
Disordered Gambling**

Nassim Tabri

Session 33

**What You Do (and
Don't) Need To Know
about Atlantic Lottery
Corporation v Babstock**

Erika Chamberlain

ALBERTA
GAMBLING
RESEARCH
INSTITUTE



DAY
Program
Schedule

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Thursday, April 29



2:30-2:45 pm

**Poster Award
Closing Remarks: Rob Williams**

* **Networking Rooms:**

- 1) Policy Issues,
- 2) Indigenous Issues,
- 3) Treatment & Prevention,
- 4) Psychology & Neuroscience and
- 5) Sociological Issues.

**This program is approved by the
Canadian Problem Gambling Certification Board**

Note: *Program subject to change.*



April 27 - 29, 2021

Conference Presenters



Eric Baich

Mr. Eric Baich is Director, Social Responsibility with Alberta Gaming, Liquor and Cannabis (AGLC). Eric has been with AGLC since 2008. His background as a social worker and counsellor provide insight into his role at AGLC and his work within social responsibility. He is proud of the work AGLC is doing to provide the policies, regulations, programs and tools to support a culture of moderation and to promote balanced/healthier choices for Albertans when it comes to alcohol, gaming and cannabis.

Panel Session: Future of Responsible Gambling in Canada



Yale Belanger

Dr. Yale Belanger is a professor of political science at the University of Lethbridge, and a Member of the Royal Society of Canada, College of New Scholars, Artists, and Scientists (2017-2024). He has written or edited numerous books and articles about First Nation casino development and the gaming industry, Indigenous self-government and self-determination, housing and homelessness, and Indigenous activism. His books include *First Nations Gaming in Canada* (Manitoba, 2011), *Gambling with the Future: The Evolution of Aboriginal Gaming in Canada* (Purich, 2006), and *Ways of Knowing: An Introduction to Indigenous Studies in Canada, 4th Ed.* (Nelson, 2021), among others.

Presentation topic: Where Settler Colonialism and Indigenous Self-Determination Meet: The State of Indigenous Gaming and the State of Canada

Gaming's promise to reinvigorate local Indigenous economies and support enhanced self-determination rights are two well-known reasons offered to explain First Nations casino development. Despite this promise, the study of First Nations casino operations tends to be framed from a deficit perspective that stresses Indigenous gaming's challenges to Canadian political, legal, social, health, and moral norms. Seeking in part to reverse these trends that if left unchallenged, would force us to conclude that First Nations casinos are simple revenue generators designed to enhance local autonomy in defiance of the state's colonial oversight, this presentation provides new insights into the state of Indigenous gaming in the State of Canada. Privileging qualitative data drawn from interviews conducted with Indigenous leaders from across Canada for the larger *AGRI Gambling and Problem Gambling in Canada: A National Study*, First Nations casinos' socio-political and -economic roles are reframed in a way that elaborate upon while simultaneously challenge academic and political talking points that date to the 1990s, many of which arguably have developed into stereotypes that could potentially hinder how we both research and come to understand First Nations casinos' social, political and economic impacts from local, regional, provincial and national perspectives.



Erika Chamberlain

Dr. Chamberlain, LLB, PhD (Cantab) is Professor and Dean of the Faculty of Law, University of Western Ontario. Prior to joining the Faculty in 2005, she served as law clerk to Mr. Justice Major at the Supreme Court of Canada and was called to the Ontario bar in 2002. Her primary research areas are impaired driving law and the tort liability of police and public authorities. She is the author of *Misfeasance in a Public Office* (2016), co-author of *Cases and Materials on the Law of Torts* (2019) and *Fridman's The Law of Torts in Canada* (2020), and the General Editor of the *Canadian Cases on the Law of Torts*.

Presentation Topic: What You Do (and Don't) Need to Know about Atlantic Lottery Corporation v Babstock

In *Atlantic Lottery Corporation v Babstock* (2020), a 5-4 majority of the Supreme Court of Canada struck out a class action based on the deceptive nature of Video Lottery Terminals (VLTs). The plaintiffs had brought claims based in negligence, breach of contract, and unjust enrichment. They did not allege that any individual gambler had suffered financial loss or addiction as a result of the defendant's deceptive practices. Rather, the plaintiffs were seeking both disgorgement of ALC's profits from VLTs and punitive damages for wrongdoing. While the court's decision provides a rich theoretical discussion of such gain-based remedies, it also provides useful guidance on the nature of the private law obligations between gaming providers and consumers. For example, the majority concluded that the ALC did not owe a contractual duty of good faith toward gamblers, and that punitive damages were not available in the absence of some wrong independent of the contract.



Darren Christensen

Dr. Darren R. Christensen received his PhD in psychology from the University of Canterbury, New Zealand. He has previously worked at the University of Arkansas for Medical Sciences and the University of Melbourne examining the efficacy of contingency management as a treatment for substance dependence and problem gambling. From 2013 to 2018, he was the Alberta Gambling Research Institute Chair in Gambling Research in the Faculty of Health Sciences at the University of Lethbridge. His research includes developing behavioural treatments for problem gambling, counselling for problem gambling, evaluations of the effectiveness of harm minimization measures, and an investigation of regular opioid antagonist dosing on gambling urge and brain function.

Presentation Topic: Responsible Gambling in Canada: An Analysis of the RG Check Patron Surveys

This study analyzed the Responsible Gambling Check patron survey data from Canadian casinos and racinos collected between 2012-2019 (18,580 patrons and 77 venues). The results indicated greater awareness and use of harm minimization tools in later years and among more frequent patrons. Although promising, of concern is the fact that a substantial percentage of gamblers are still unaware of the harm minimization tools available and the actual impact of this awareness on responsible gambling behaviour is largely unknown. We suggest further efforts are needed nation-wide to promote the awareness, utilization and evaluation of these harm minimization tools.



Luke Clark

Dr. Luke Clark is the Director of the Centre for Gambling Research at UBC, and a Full Professor in the Department of Psychology. His research on the psychology of gambling combines multiple methods including behavioural analysis, data science, functional neuroimaging, and psychophysiology. His current research focuses on three main questions: i) How do the structural features of specific gambling products (e.g. modern slot machines) relate to gambling harms? ii) How do biological and psychological traits create vulnerability to disordered gambling? iii) How can behavioural data from online gambling be used to identify at-risk individuals? He has published over 200 papers and has editorial roles at the leading journals *Addiction* and *International Gambling Studies*. Website: <http://cgr.psych.ubc.ca/> Twitter @LukeClark01 @CGR_UBC

Presentation topic: Testing the Effects of Monetary Format on Gambling Behaviour: The Need for Convergent Research

People can pay for gambling products using a variety of methods, including cash, chips, or card-based digital payments. Over the past decade, technological developments have increased interest in cashless options, amplified further by the COVID-19 pandemic. However, research from consumer psychology (e.g. the 'pain of paying') indicates that self-control may be eroded by more abstract forms of payment. In 2 experiments, community slot machine gamblers played an authentic slot machine in the lab under different monetary conditions (Expt 1: cash vs voucher, Expt 2: earned vs windfall funds). While a number of behavioural effects were seen across conditions, gambling did not vary consistently as a function of our monetary manipulations. Rather than 'asserting the null', we argue that the use of endowed funds in laboratory designs may attenuate effects of monetary manipulation. Alternative approaches using online testing and behavioural tracking will be discussed.



Shawn Currie

Dr. Shawn Currie is an adjunct associate professor in psychology and psychiatry at the University of Calgary and a licensed clinical psychologist. He is presently with Alberta Health Services as a Director of Adult Addiction and Mental health programs. Dr. Currie has authored and co-authored numerous peer-reviewed articles and book chapters on gambling including some of the original studies on low-risk gambling limits. His other research interests include epidemiology, alcohol disorders, insomnia, smoking, chronic pain, and patient experience.



Matthew Young

Dr. Matthew M. Young, Ph.D., is a Senior Research and Policy Analyst at the [Canadian Centre on Substance Use and Addiction \(CCSA\)](#) and an Adjunct Research Professor of Psychology at Carleton University in Ottawa. Matthew has been working in the field of substance use and addiction for over 20 years and currently leads CCSA's drug use epidemiology research activities, which includes co-chairing the scientific committee in charge of the Canadian Substance Use Costs and Harms project (www.csuch.ca) and the Canadian Community Epidemiology Network on Drug Use (CCENDU). He also co-chairs the scientific committee tasked with developing Canada's first Lower Risk Gambling Guidelines.

Presentation Topic: Going beyond 'Set a limit and stick to it' – Canada's First Lower Risk Gambling Guidelines

Safe gambling advice is widely promoted in many jurisdictions but the content of such messaging lacks specificity (e.g., set a spending limit and stick to it) and is minimally linked to evidence. Recent research by our team shows that regular gamblers who stay within their predetermined gambling limits are less likely to report harm. Providing gamblers with appropriate, evidence-based thresholds for monthly expenditure and frequency would be valuable public education tools. The Canadian Centre on Substance Use and Addiction has completed a project to produce Canada's first Lower-Risk Gambling Guidelines (LRGGs). This multi-faceted project has included collaboration with researchers in eight other countries, analysis of epidemiological data from over 60,000 gamblers, consultation with indigenous stakeholders, industry, regulators, and health care providers (through a nationally representative advisory committee), input from over 10,000 regular gamblers via a national online survey, and qualitative data obtained from focus groups and interviews. The presentation will unveil the key outputs from the LRGG project including: lower-risk limits for frequency of gambling, expenditure, percent of income spent on gambling and number of formats; special populations and contextual factors that will be integrated into messaging, and; preliminary knowledge translation tools to communicate the guidelines.



Jeffrey Derevensky

Dr. Jeffrey Derevensky is James McGill Professor and Director of Clinical Training in School/ Applied Child Psychology and Professor, Department of Psychiatry at McGill University. He is a clinical consultant to numerous hospitals, school boards, government agencies and corporations. Dr. Derevensky has published widely in the field of gambling, adolescence, behavioral addictions and developmental psychopathology and is on the editorial board of multiple journals. He is the Director of McGill University's Youth Gambling Research and Treatment Clinic and the International Centre for Youth Gambling Problems and High-Risk Behaviors. Dr. Derevensky and his team have helped governments establish research priorities and have been instrumental in the development of responsible practices, the development of treatment centers, prevention programs and social policy recommendations. He has testified before governmental bodies in the U.S., Canada, Europe, Asia and Australasia and is considered an expert in the field of youth gambling and behavioral addictions.



Presentation Topic: Youth sports wagering: Lessons learned and implications for Canadian researchers and policy makers

For the past 16 years, Dr. Derevensky and his team have been studying sports wagering and gambling among collegiate student athletes in the U.S. More recently, the research team has been examining sports wagering among a large group of American high school students. Whether gambling amongst peers, fantasy sports wagering, or online gambling there is clear evidence that a proportion of students are actively engaged in sports wagering and are experiencing gambling-related problems. Data from multiple studies will be presented. As Canadian provinces move toward endorsing single sporting wagering the likelihood of increased youth sports wagering and gambling problems will likely increase. Based upon the available data, Dr. Derevensky will provide suggestions for Canadian researchers and both provincial and federal policy makers.



Darcy Dixon

Chief Darcy Dixon is currently serving his 9th term as Chief of the Bears paw First Nation. After serving one term as Councilor, he was first elected as Chief in 1998, served 5 consecutive two-year terms, and is now serving his third consecutive three-year term, having been the first Chief to be elected to a three term in Bears paw Nation history.

Chief Dixon serves on many Boards on behalf of the Nation and the Stoney Tribe, as well as in Treaty 7 and the Alberta Region. He was heavily involved as a Panel Member negotiating First Nation Casino Gaming in Alberta in the early 2000's. He played a leading role in the development of the Stoney Nakoda Resort & Casino, a property owned by the three Nations of the Stoney Tribe and located on the Morley Reserve at the gateway to Kananaskis and the Rocky Mountains. Chief Dixon has served as the President of the Stoney Nakoda Resort & Casino for nine years. He is a leading advocate for the concept of the Alberta First Nations Gaming model as a living concept to be adapted to the economic realities of the Host First Nations who have undertaken the investment and initiative to host gaming facilities on their lands.

Chief Dixon is a visionary leader who, blending his leadership experience with his education, is a tireless advocate for the creation of independence and pride through the development of sustainable businesses. In addition to his role with the Stoney Nakoda Resort & Casino, he has developed the Bears paw Gas Bar and Retail Centre in Morley, Eden Valley Gas Bar, Bears paw Equestrian Centre, Bears paw Youth Centre and most recently opened the Bears paw Kananaskis Travel Centre holding the first On-Reserve Tim Hortons in the country.

Panel Session: Future of Indigenous Commercial Gambling in Canada



Mike Dixon

Dr. Mike Dixon is a professor of psychology at the University of Waterloo where he has twice served as chair of the Department of Psychology. He is the director of the Research Stream at the Waterloo Gambling Research Laboratory. This lab is best known for their work on “losses disguised as wins” and the state of “dark flow” experienced by slots players with problematic gambling behaviours. They have recently published research on the overlap between gambling and gaming, including dark flow in Candy-Crush and how “loot-boxes” may constitute a form of gambling. Dr. Dixon has been continuously funded by the Natural Sciences and Engineering Research Council since 1997. His gambling research has been supported by the Ontario Problem Gambling Research Centre, Gambling Research Exchange Ontario, and the Manitoba Gambling Research Program. He has published over 100 articles in journals such as *Addiction*, *Journal of Gambling Studies*, *International Gambling Studies*, *Nature*, *Journal of Cognitive Neuroscience*, *Cognitive Neuropsychology* and *Cortex*.

Presentation topic: Players’ Arousal and Reward Signatures to Loot Boxes: “If it Looks Like a Duck and Walks Like a Duck, it’s a Form of Gambling”

Loot boxes are purchasable video-game features containing items of cosmetic, but not monetary, value. There is debate whether they constitute a form of gambling. We showed that players treat virtual loot box rewards in ways that parallel how gamblers treat monetary rewards in slots. We showed that like rare, large slots wins, loot boxes containing the rarest items are rated as being more valuable, subjectively arousing, and urge-inducing. We then assessed the differential rewarding properties of common versus rare loot box items using measures of reward reactivity - Post Reinforcement Pauses and skin conductance responses linked to excitement-induced arousal. We showed that experienced players: paused longer to internally celebrate loot boxes containing rarer items; and showed greater reward-induced skin conductance responses for these items. These findings recall a variation on the old Ontario adage - “if it looks like a duck, and walks like a duck - it is form of gambling”.

David Euston

Dr. David Euston is an associate professor of neuroscience at the University of Lethbridge. He received his Ph.D. in Psychology at the University of Oregon in 2000 and then did postdoctoral training at in neuroscience at the University of Arizona with Dr. Bruce McNaughton. His research involves a combination of behavioral, lesion, and multi-electrode single-cell electrophysiological techniques in rats to address questions about the neural bases of behavior addiction, decision making, and social communication. Dr. Euston has been working for the past few years on developing a rodent model of gambling addiction that can be used to explore the neurobiology of problem gambling.

Presentation Topic: Toward an Animal Model of Gambling

If we ever hope to understand the neurobiology of gambling, we’re going to need animal models in which we can knock out specific brain areas, inject drugs, and measure cellular



activity. My lab has been working to develop a rat model of compulsive gambling. Rats are trained over many weeks to respond for probabilistic food reward, similar to a slot machine, while a control group gets reward on a fixed schedule. Normal rats show enhanced motivation on gambling-like schedules but fail to develop compulsion. We have also tried drug manipulations and a depression model. Both manipulations result in compulsive behavior but in neither case is the addiction-like behavior specific to the probabilistic schedule. Recently, we have shifted attention to the motivational aspects of gambling schedules. The preference for a probabilistic schedule is extremely robust and may hence serve as an excellent model to explore the neurobiology of gambling.

Margo Hilbrecht



Margo Hilbrecht is the Director of Knowledge Management at Gambling Research Exchange (GREO). She oversees the Evidence Centre, a repository of information resources, datasets, and other materials that help to advance knowledge of gambling-related issues among multiple stakeholder groups. She participates in research projects related to gambling and harm on behalf of GREO and as part of her Adjunct appointment at the University of Waterloo. Before joining GREO, Dr. Hilbrecht was the Associate Director, Research for the Canadian Index of Wellbeing. In this role, she was engaged extensively in social indicators research both at the national level and in partnership with communities across Canada. She holds a Ph.D. in Recreation and Leisure Studies from the University of Waterloo, and has research expertise in gambling-related harm, time use, and quality of life.

Presentation Topic: Exploring trends in Canadian gambling research publications: Alignment with the Conceptual Framework of Harmful Gambling over a 12-year period

Canadian gambling research draws heavily upon a psychological approach to understanding individual behaviour and treatment of people with problem gambling. Recently, there has been an international movement to adopt a public health perspective and expand the research focus to include gambling-related harm. This necessitates a broad range of disciplinary knowledge and expertise. Building on an earlier bibliometric analysis, we examine stability and change in research emphases over a 12-year period from 2008-2019 by aligning peer-reviewed research published by Canadian-based scholars with the Conceptual Framework of Harmful Gambling (CFHG). The CFHG outlines eight factors contributing to the risk and experiences of gambling-related harm. The factors are divided equally into gambling specific (exposure, environment, types, and resources) and general factors (social, cultural, psychological, and biological). We also compare trends in Canadian research publications with three other countries (Australia, New Zealand, and the United Kingdom). Results indicate the continuing dominance of psychological research in Canada and uneven growth in coverage of other CFHG factors, with implications for the development of an evidence base to guide public health policy.

Authors: Margo Hilbrecht¹ and David Baxter²

¹ GREO, Guelph, Ontario and Dept. of Recreation & Leisure Studies, University of Waterloo, Waterloo, ON

² Dept. of Political Science, University of Alberta, Edmonton, Alberta



David Hodgins

Dr. David C. Hodgins is a professor in the Program in Clinical Psychology in the Department of Psychology, University of Calgary, and a Research Coordinator for the Alberta Gambling Research Institute. He is registered as a Clinical Psychologist in Alberta. His research interests focus on various aspects of addictive behaviours including relapse and recovery from substance abuse and gambling disorders. Dr. Hodgins co-chairs the Scientific Working Group of the National Low Risk Gambling Guidelines development project.

Presentation Topic: A Profile of Canadian Problem Gamblers: Demographics, Comorbidities, and Pathways to Recovery

New national data from the Canadian Community Health Survey confirms that the prevalence of problem gambling in Canada is falling. However, about 0.6% of the adult population report past year gambling problems. The personal characteristics of these individuals will be described, including comorbid mental health disorders. A small proportion of these individuals will seek to reduce their gambling in any year, either on their own or through help from family or friends, professionals such as physicians and clergy or specialized gambling treatment services. The AGRI National Project online panel collected rich data about people's reasons for choosing different options for addressing their gambling, and the perceived effectiveness. These insights about pathways to recovery may help to plan effective treatment systems.

Presentation Topic: Going beyond 'Set a limit and stick to it' - Canada's First Lower Risk Gambling Guidelines

Safe gambling advice is widely promoted in many jurisdictions but the content of such messaging lacks specificity (e.g., set a spending limit and stick to it) and is minimally linked to evidence. Recent research by our team shows that regular gamblers who stay within their predetermined gambling limits are less likely to report harm. Providing gamblers with appropriate, evidence-based thresholds for monthly expenditure and frequency would be valuable public education tools. The Canadian Centre on Substance Use and Addiction has completed a project to produce Canada's first Lower-Risk Gambling Guidelines (LRGGs). This multi-faceted project has included collaboration with researchers in eight other countries, analysis of epidemiological data from over 60,000 gamblers, consultation with indigenous stakeholders, industry, regulators, and health care providers (through a nationally representative advisory committee), input from over 10,000 regular gamblers via a national online survey, and qualitative data obtained from focus groups and interviews. The presentation will unveil the key outputs from the LRGG project including: lower-risk limits for frequency of gambling, expenditure, percent of income spent on gambling and number of formats; special populations and contextual factors that will be integrated into messaging, and; preliminary knowledge translation tools to communicate the guidelines.



Andrew Kim

Dr. Andrew Kim is an Assistant Professor in the Department of Psychology at Ryerson University and is the director of the Addictions and Mental Health Laboratory. Dr. Kim completed his Ph.D. in clinical psychology at the University of Calgary and an accredited psychology residency at The Royal Ottawa Mental Health Centre in the Substance Use and Concurrent Disorders Program. His research interest lies in developing transdiagnostic treatments for substance and behavioral addictions as well as integrated treatment for concurrent disorders. Dr. Kim has received awards and fellowships from the Social Sciences and Humanities Research Council (Banting Post-Doctoral Fellowship; declined, Canada Graduate Scholarship), Killam Trusts, American Psychological Association's Society of Addiction Psychology, and the Canadian Psychological Association. He has ongoing collaborations with the University of Sao Paulo and the Royal Ottawa Mental Health Centre.

**Presentation Topic: Concurrent Recovery & Addiction Substitution:
What happens after people recover from
gambling**

Clinical anecdotes suggest that following recovery from a gambling disorder, some people may increase their use of other addictive behaviours; a concept known as addiction substitution. On the other hand, it is also possible that following recovery from gambling, people may concurrently recover from a secondary addiction. Despite the important clinical implications, empirical studies on addiction substitution and concurrent recovery are sparse. In this talk, results will be presented from a mixed-method study investigating the process of addiction substitution and concurrent recovery among people who have recovered from gambling disorder (N = 185). Additionally, results will be presented that investigated the demographic, gambling, and psychological characteristics associated with addiction substitution and concurrent recovery. The results may have some important clinical implications in the treatment of gambling disorder and reducing the risk of addiction substitution.




Steve Lautischer

Mr. Steve Lautischer is Acting Vice President, Gaming and Cannabis for Alberta Gaming, Liquor and Cannabis. Steve has been in the gaming industry for over 30 years in a variety of roles, both in the public and private sector. He started his gaming career with the Western Canada Lottery Corporation (WCLC) in 1986 and held positions in Distribution, Accounting and Product Marketing in both Edmonton and Stettler, AB. After a brief stint with Alberta Lotteries, which merged within the then-newly formed AGLC in 1995, Steve joined Pollard Banknote and worked from their Kamloops, BC location. In this capacity, Steve grew from managing the British Columbia Lottery Corporation's (BCLC) exclusive Scratch & Win contract, to overseeing all Canadian sales to all five regional marketing organizations (BCLC, WCLC, Ontario Lottery and Gaming Corporation, Loto-Québec, and Atlantic Lottery Corporation), as well as national games offered by the Interprovincial Lottery Corporation. In 2006, Steve returned home to Edmonton and rejoined AGLC as


Gaming Products Manager. Throughout the past 15 years, Steve has progressed in the Gaming Division, managing the totality of gaming initiatives, which drive the substantive revenue for the General Revenue Fund, charities, First Nations, casino operators, VLT retailers and Lotto Spot locations. Now, as the Acting Vice President, Gaming & Cannabis, Steve has taken responsibility for AGLC's newest line of business, cannabis. Steve also has just been appointed as a Board member for the Western Canada Lottery Corporation.

Panel Session: Future of Commercial Gambling Provision in Canada

Bonnie Lee and Samuel Ofori-dei



Dr. Bonnie Lee, Associate Professor, Health Sciences, University of Lethbridge, is the Principal Investigator of a major Alberta Gambling Research Institute grant to research the effectiveness of a systemic couple therapy compared to individualized treatment-as-usual in Alberta Health Services, Addiction and Mental Health. In recognition of her leadership in research and innovative treatment for couples and concurrent disorders, she was awarded the University Board of Governors Research Chair (Tier II) in 2016-2019. She is a highly rated presenter, trainer and keynote speaker at national and international conferences and in the Institutes of Advanced Clinical Education of the American Association for Marriage and Family Therapy. Her current focus is on the inter-relationship of adverse childhood experiences, couple distress and addiction. She teaches a graduate course on Leading Meaningful Change in Health Services to future health leaders, including a component on integrated knowledge translation and mobilization engaging multi-sectoral stakeholders.



Dr. Ofori-dei is a population health researcher and social epidemiologist with research interests in gambling and addictive disorders, social determinants of addictions, addiction treatment and health policy. He is a Postdoctoral Fellow at the University of Lethbridge, Faculty of Health Sciences, and is supervised by Dr. Bonnie Lee.

Presentation Topic: Concurrent treatment for gambling and alcohol use disorders and their comorbidities: Mechanisms of Change with Congruence Couple Therapy

Mechanisms of treatment effect are not well established for interventions for concurrent addiction and mental health disorders. We researched the mechanisms of treatment to account for the range of superior clinical outcomes with Congruence Couple Therapy (CCT) relative to individualized Treatment-as-Usual (TAU) in a randomized controlled trial. Correlational effects of the two treatments are compared with emotion regulation and couple adjustment emerging as central variables strongly associated with multiple comorbid improvements in the CCT group. Differences in treatment and correlational effects of TAU and CCT combined with participants' feedback highlight CCT's systemic mechanisms with its concurrent capabilities.



Carrie A. Leonard

Dr. Carrie A. Leonard is the Project Coordinator for the AGRI National Project (ANP). Dr. Leonard's research interests encompass individual differences, such as intelligence, cognitive style and personality, and how these personal factors contribute to psychopathology susceptibility or resistance. Her publications include: *Gambling Fallacies: Predicting problem gambling in a national sample* (2020), *Gender equality in gambling student funding: A brief report* (2020), *Fallacious beliefs: Gambling specific and belief in the paranormal* (2018), *Gambling Fallacies: What are they and how are they best measured?* (2015), and *Characteristics of good poker players* (2015).

Presentation Topic: Impact of COVID on Gambling in Canada: A Prospective Study

The current study investigated the impact of the COVID-19 pandemic national lockdown (spring 2020) on gambling and problem gambling in Canada. AGRI National Project online panel participants who had provided baseline gambling data six months prior to the pandemic were re-surveyed during the lockdown. Nearly one-third of gamblers reported a complete cessation of gambling during the lockdown. For the continuing gamblers, quantitative data indicated significant decreases in gambling frequency, time spent in gambling sessions, money spent, and the number of game types played. Gambling platform was the only gambling engagement metric where increases were found with ~17% of the gambling sample migrating to online gambling during the lockdown period. Problem gambling within the whole sample generally declined, however, engaging in online gambling was a significant predictor for classification as a problem gambler during the lockdown. COVID-specific influences on health, employment, leisure time and social isolation were moderately associated with problem gambling scores but were not independent predictors of changes in gambling engagement during lockdown. Future waves of this study are planned to examine if the pandemic related changes in gambling evidenced in this study remain stable, or if engagement reverts to pre-pandemic levels when land-based gambling venues are re-opened.

Presentation Title: Gambling Fallacies During the Pandemic - Abstract unavailable.



Darrel Manitowabi

Dr. Darrel Manitowabi is an associate professor in Human Sciences at the Northern Ontario School of Medicine and is the inaugural Jason A. Hannah Chair in the History of Indigenous Health and Traditional Medicine. He is Three Fires Anishinaabe from Wiikwemkoong Unceded Territory on Manitoulin Island, and he currently resides in the Whitefish River First Nation. His interest in Indigenous gambling is the intersection of the Indigenous cultural theory and practice of gambling within colonialism, determinants of health and Indigenous self-determination. He is currently collaborating in a national study examining the social, political, economic and cultural impact of casinos in Canada.

Presentation Topic: Confronting the Windigo in Indigenous Casinos: Theory and Practice

The following presentation is a cultural and historical analysis of Indigenous conceptions of gambling and its application to Ontario's Indigenous casino experience. In this analysis, the cultural framework is the Ojibwa/Anishinaabe concept of the windigo, which in oral history, is a mythic giant cannibal from the north. Anishinaabek studies scholars and writers have associated the emergence of casinos and gambling as representative of the windigo, consuming individuals and groups. I apply the windigo framework to my gambling research in Ontario, proposing that Indigenous individuals and communities navigate the potential of social and individual harm associated with casino gambling. I suggest Indigenous cultural gambling frameworks can inform public health initiatives in harm reduction and addictions treatment. Most importantly, it decolonizes gambling studies by demonstrating Indigenous agency in gambling theory and practice.



Murray Marshall

Mr. Murray Marshall has been a practising Canadian lawyer for more than 30 years and is, or has been, a member of the bars of Alberta, Québec and Ontario. Mr. Marshall's practice has always focused on issues of concern to aboriginal peoples and he has advocated on behalf of his clients at every level of court in Alberta, the Federal Court of Canada and the Supreme Court of Canada.

In the 1990's, Mr. Marshall established and managed the Legal Services department of the Mohawk Council of Kahnawà:ke and drafted a number of important pieces of legislation, including: the Kahnawà:ke Gaming Law and, more recently, the *Kahnawà:ke Cannabis Control Law*.

Mr. Marshall has served as legal counsel and advisor to the Kahnawà:ke Gaming Commission since its inception in 1996 and drafted the Commission's *Regulations concerning Interactive Gaming*.

Mr. Marshall has spoken at numerous aboriginal and gaming conferences in various parts of the world and authored articles and papers for a variety of publications including the Canadian Bar Review, Internet Gambling Report, Gaming Law Review and Online Gambling Lawyer.

Panel Session: Future of Indigenous Commercial Gambling Provision in Canada



Daniel McGrath

Dr. Daniel McGrath is an Associate Professor in the Department of Psychology at the University of Calgary and is a Senior Research Fellow with the Alberta Gambling Research Institute. His research is primarily focused on the co-morbid relationship between commonly used substances (e.g., tobacco, alcohol) and gambling behaviour, attentional biases in gambling disorder, and the role of personality in addiction. Much of this work involves conducting experiments in a controlled laboratory environment using drug-challenge designs and eye-gaze tracking technology. Ultimately, the goal of this work is to help researchers and clinicians better understand the interaction between use of addictive substances and gambling disorder. Dr. McGrath has been the recipient of numerous grants to support his research and has published over 45 peer-reviewed journal articles.

Presentation Topic: One Year Impact of Cannabis Legalization in Canada

A considerable body of evidence has revealed high rates of co-occurring substance use among people who are experiencing disordered gambling (DG). Of particular concern, DGs who also meet the diagnostic criteria for a substance use disorder (SUD) typically experience more problematic gambling behaviour and poorer treatment outcomes. A meta-analysis of epidemiological studies indicates that the highest prevalence rates of co-morbid SUDs among DGs are nicotine dependence (60.1%) and alcohol use disorders (28.1%), both legally available drugs. In addition, an analysis of DGs seeking treatment found that 11.5% had a co-morbid cannabis use disorder (CUD). The Government of Canada legalized recreational cannabis on October 17, 2018. According to Statistics Canada, an estimated 16.8% of Canadians reported previous three-month use in 2019, an increase from 14.9% in 2018 (prior to legalization). Despite high rates of use, the extent to which cannabis use influences gambling is still poorly understood. This presentation will describe associations between cannabis use and gambling using data collected through the National Study on Gambling (ANP): Online Panel Questionnaire. The timeframes of administration of the ANP questionnaire permit us to assess patterns of cannabis use both pre- and post- legalization. Relationships between cannabis use and gambling outcomes will be elucidated prior to legalization and after legalization. Furthermore, changes in cannabis use over time, as well as similarities and differences in cannabis-gambling relationships, will be discussed.



Fiona Nicoll

Professor Fiona Nicoll is the Alberta Gambling Research Institute Research Chair in Gambling Policy in the Department of Political Science at the University of Alberta. Her recent monograph titled [Gambling in Everyday Life: Governing Spaces, Moments and Products of Enjoyment](#) was published in 2019. She is completing a co-authored meta-analysis of peer-reviewed gambling literature examining issues of academic integrity and disciplinarity. She also co-edits the new journal [Critical Gambling Studies](#). This journal publishes articles and expert blogs to expand the range of disciplinary conversations possible within gambling studies, bolster gambling scholarship that engages critically with the complexities of playing games for money, and create a supportive space for new and emerging gambling scholars to publish their work. She is currently editing a special issue of [Critical Gambling Studies](#) to showcase theories and case studies focused on Indigenous gambling, as well as working on an AGRI large grant led by Indigenous youth based in Thunder Bay Ontario, through a partnership with [Indige-Spheres to Empowerment](#), to understand intersections between gambling and videogaming in everyday life.

Presentation Topic: Employee Awareness and Referrals: Learning from Responsible Gambling Check Employee Surveys

The Responsible Gambling Check program was developed in 2011 by the Responsible Gambling Council in consultation with policy makers, gambling providers, gamblers, and people who have experienced gambling harm. The program was designed to evaluate and accredit the responsible gambling practices of land-based casino and racino gambling venues as well as online gambling websites. Land-based accreditation assesses eight areas: responsible gambling policies, employee training, self-exclusion, assisting patrons, informed decision making, advertising and promotion, access to money, and venue and game features. The two essential components of the assessment are a Patron Survey and an Employee Survey. Sites are surveyed approximately every three years to gain and maintain their RG Check accreditation. Certification is granted when the venue scores at least 50% on all eight standards and has a total score of 70 on the Responsible Gambling Index. After submission of the RG Check report by the RG Check team, an accreditation panel member reviews the report and recommendations before confirming accreditation. The RG Check program is widely subscribed to by Canadian gambling operators. This paper analyses anonymized data from employee surveys collected as part of the RG Check accreditation program. The primary research question concerns the awareness of responsible gambling provision among employees surveyed and their knowledge about and capacity to connect patrons to services where required. This paper uses a mixed methodology. After presenting existing academic research on employees experience of and awareness about problems and harms linked to gambling, it presents a qualitative analysis of employee responses to long-form questions on a representative sample of RG check surveys administered between 2011 and 2020.



Elisabeth Papineau

Dr. Elisabeth Papineau, PhD, is an anthropologist and researcher at the Québec National Institute of Public Health (INSPQ). She is also associate professor at the School of Public Health, University of Montréal. With over 20 years working experience in the field of gambling, Dr. Papineau authored INSPQ scientific works pertaining to problem gambling prevention, moratorium on video lottery terminals, the moving of Montreal casino and the introduction of gambling salons. She has directed various subsidized projects (gambling in four cultural communities, seniors gambling, lottery and deprivation, the impact of online gambling). Her current project aims to characterize and represent both exposure and vulnerability to gambling in Quebec (CIHR). All of this work aims at a better understanding of gambling problems from a public health perspective: it highlights and questions the harmful nature of environments and games and social inequalities linked to gambling.

Presentation topic: Research for Solutions: Two Indexes to Map and Cap Gambling

The nature of the built environment and the layout of neighbourhoods may be conducive or harmful to health, community development and individual development. The Québec National Institute of Public Health has developed a method to characterize gambling environments in Quebec in order to address social inequality with respect to gambling exposure.

A Gambling Exposure Index (GEI, composed of spatial accessibility to gambling sites, density of gambling places, and relative risk associated with the types of game), and a Vulnerability to Gambling Index (VGI) were first developed and mapped. Spatial and descriptive statistical analyses showed that 2,599 of Quebec's 13,420 dissemination areas have high values of vulnerability and exposure to gambling, representing 1,394,042 people living in these sectors (17% of the Quebec population).

We will discuss the limits and the potential of this interactive online mapping tool to provide reliable criteria to municipal, regional and governmental agencies for a safer distribution of gambling offer and better targeted prevention and intervention services. We also suggest that this method and the associated tools can be adapted to address harmful gambling distribution in other jurisdictions.

Authors: *Presenter:* Elisabeth Papineau^{1,2}, PhD, Researcher, Québec National Institute of Public Health Co-authors: Éric Robitaille^{1,2}, Charles Prisca Samba¹, Fanny Lemétayer¹, Yan Kestens² and Marie-France Raynault²

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Barry Scholnick

Dr. Barry Scholnick is the Roger S. Smith Professor of Business Economics in the Alberta School of Business, University of Alberta, Canada. His PhD in Economics is from the University of Cambridge. He has published in top Economics and Finance journals, including *The Review of Financial Studies*, *The Review of Economics and Statistics*, *The Journal of Business*, *The Journal of Money, Credit and Banking*, etc. He has been awarded multiple research grants from the Social Sciences and Humanities Research Council of Canada (SSHRC) as well as from the Alberta Gambling Research Institute (AGRI). He has also been the recipient of multiple teaching awards, at the Executive MBA, MBA and undergraduate levels.

Presentation Topic: Incorporation and Financial Constraints: Evidence from Lottery Winners

While the vast majority of the Gambling literature has examined impacts of gambling on individuals who lose from gambling, and problem gamblers, the literature on lottery winners emphasizes that winners from gambling are also important to study for a fuller understanding of the effects of gambling. In this paper we examine how winning the lottery impacts the probability that a lottery winner starts a new small business. Our key assumption, is that the dollar magnitude of the lottery win (conditional on winning the lottery) is random. A finding that positive exogenous wealth shocks (from winning the lottery) increases subsequent entrepreneurial activity supports the hypothesis that individuals face financial constraints when starting their business. This is because the recipients of the positive wealth shocks (lottery wins), would not have been able to start the business without the win. Our main finding is that lottery winners' incorporations increase with lottery win amount, whereas, unincorporated business name registrations generally do not change with lottery win amount.



Serge Sévigny

Serge Sévigny (Ph.D.) is a full professor at the Département des fondements et pratiques en éducation at Université Laval where he teaches measurement and evaluation. In addition to his competence in research methods and data analysis, he has been successfully exploring the psychology of gambling for more than 20 years as a member of the Centre québécois d'excellence pour la prévention et le traitement du jeu (CQEPTJ). Since 2010, he is the French language associate editor of the *Journal of Gambling Issues*. His work has addressed fundamental and social issues related to gambling including video lotteries, poker and sports gambling. More recently, his work examined the impact of new games in the Province of Quebec: Kinzo and Bingo+.

Presentation Title: Impact of Electronic Bingo on Gamblers' Reported Perceptions and Behaviours

Background: In 2018, a new electronic gambling offer, called Bingo+, became available in five existing bingo venues located in the province of Quebec, Canada. This communication describes the new game and its impact on gamblers, nine months after implementation.



Method: A pre-post longitudinal design served to compare reported behaviours and perceptions of two groups of gamblers: traditional bingo sites (n = 190) and electronic bingo sites (n = 160). Graduate students conducted phone interviews before implementation and at the 9-month follow-up.

Results: Participants were unemployed (80%), women (80%), and the mean age was 65 (SD = 11.3). At follow-up, as compared to pre-implementation, both groups spent more money per bingo program; the electronic group reported a small decrease in the mean number of programs played per week; more gamblers set monetary limits; gambling habits decreased for 26% of the sample and increased for 5% of it. Socialization seemed important, and patrons reported few negative consequences. No statistical between-group difference emerged on weekly money spent in the most frequented bingo hall, gambling frequency, gambling consequences, and Canadian Problem Gambling Index (CPGI) scores. At follow-up, CPGI scores revealed a CPGI category upgrade for 23% of the gamblers, and a decrease for 20% of them.

Conclusion: On a 9-month-term basis, gambling characteristics reported by Quebec participants playing in bingo sites offering electronic Bingo+ were similar to those of gamblers betting in traditional bingo venues. A discussion will explore the reasons for that conclusion, nuances to consider and study limitations.

Authors: Serge Sévigny¹, Christian Jacques¹, Étienne Gagnon¹, Virginie Sorel¹, Stéphane Bouchard², Isabelle Giroux¹.

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Will Shead

Dr. Will Shead completed his Ph.D. in Clinical Psychology at the University of Calgary. He completed a predoctoral internship at the University of Manitoba, Department of Clinical Health Psychology followed by a two-year postdoctoral fellowship at McGill University at the International Centre for Youth Gambling Problems and High-Risk Behaviors. Currently, he is an Associate Professor at Mount Saint Vincent University. His research has included a range of topics related to gambling behaviours including Internet gambling, sports wagering, and poker playing. Recently, he has studied decision-making processes related to risky behaviour, mindfulness-based meditation interventions for mental health problems, and the relation between psychosis and gambling.

Presentation topic: Poker Players as a Distinct Subgroup of Gamblers: Research Findings and Practical Implications

Poker is a form of gambling that involves an element of skill. Following the “poker boom” in the mid-00s, poker has experienced a decline in popularity over the past decade. However, poker continues to be a prevalent form of gambling, particularly online. Meanwhile, poker players generally view themselves as being different from other gamblers. Consequently, assumptions about problem gambling among poker players, including our general understanding of problems, diagnostic tools, prevention, and treatment approaches



should be adapted to reflect these unique experiences. This presentation will review quantitative and qualitative findings from multiple studies providing insight into how poker players view gambling experiences. The findings will highlight how how poker players differentiate poker from other forms of gambling, including motives for gambling, how gambling problems are construed, help-seeking behaviours, and barriers to help-seeking. Together the findings highlight important differences between poker players and other gamblers that may inform prevention and treatment strategies for poker players experiencing gambling problems. Practical implications for tailoring prevention and treatment efforts will be discussed.



Rob Simpson

Rob Simpson was CEO of the Ontario Problem Gambling Research Centre from its inception in 2000 until retiring in 2010. Since that time, his gambling-related activities have included engagement as an expert witness in six liability actions launched by casino patrons, and writing on legal and policy-based approaches for the prevention of gambling harm. He has conducted seven community-based investigations into the health, economic, and social impact of gambling expansion across Ontario, and has assisted community groups responding to such expansion. He was principal author of Ontario's original server training program for licensed premises, and his testimony at trial was cited by the court in establishing the training as the standard of care under licensees' duty of care. Since then, he has served as an expert in 87 alcohol-related lawsuits. Rob is currently Principal at Sagewood Resources Inc.

Presentation Topic: Using the Courts to Prevent Gambling Harm: Current Advances

This presentation reviews contemporary legal theory in support of the rationale for a court ruling that casino operators owe a duty of care to patrons who are loyalty program members. In particular, it examines four advances:

- A more accurate specification of how the existing duty of care owed by Canadian alcohol providers parallels and supports an analogous duty for casino operators;
- An examination of the recent Initial Public Offering (IPO) of a Canadian gambling operator, and how it endeavours to persuade potential investors of its profit-maximization potential.
- An appreciation of contemporary data mining software currently employed by casinos to individually target patrons with inducements to increase their gambling losses;
- The introduction of the construct “cultivated responsivity” as the under-regarded etiological element in understanding the onset and evolution of excessive gambling involvement.

These advances represent a significant evolution in the facts put before the courts in their consideration of a duty of care for casinos.



Rhys Stevens

Rhys Stevens is an academic librarian (Librarian III) at the University of Lethbridge Library in Lethbridge, Alberta. His primary responsibility is Librarian & Information Specialist for the Alberta Gambling Research Institute, a position he has held since 2001. He is also subject liaison librarian for Geography, Maps & Government Documents, Anthropology and Spatial/Numeric Data. Over the course of his time as Institute librarian, he has had the opportunity to provide literature reviews and other research support for numerous Institute-related initiatives, most recently as a member of the research team for the Institute-funded national study of gambling and problem gambling in Canada.

Presentation Topic: Gambling in Canada: Behind the Numbers

One of the research objectives of the Institute-funded project “Gambling and Problem Gambling in Canada: A National Study” was to comprehensively document the gambling landscape in each of Canada’s provinces. This part of the national investigation was led by Institute Librarian & Information Specialist Rhys Stevens. It involved the collection of details about current legal and regulatory frameworks, types of legal gambling, revenue generation and its distribution, harm minimization strategies, and the historical development of gambling policy. These background materials provide context for the data collected from the project’s two major surveys and key informant interviews. They also help fill an information deficit that appeared when the Canadian Partnership for Responsible Gambling ceased updating its Responsible Gambling Digest. Mr. Stevens amassed a database of 750+ recent and historical annual reports and other publications containing statistics about gambling in Canada’s provinces and territories. Statistical information was extracted from these sources and the data assembled into tabular formats from which were created a series of data tables and graphical visualizations. In his presentation, Mr. Stevens will focus on current and historical statistics related to revenue generated from Canada’s major commercial gambling formats. He will also go “behind the numbers” and use them to examine differences in gambling spending between Canada’s provinces and how gambling spending compares to related products.



Sherry Stewart

Dr. Stewart holds a Tier 1 Canada Research Chair and is a Professor in the Departments of Psychiatry, Psychology and Neuroscience, and Community Health and Epidemiology at Dalhousie University. Dr. Stewart is also a licensed clinical psychologist in the province of Nova Scotia. She is well known for her research on psychosocial factors contributing to problem gambling, alcohol misuse, and the comorbidity of emotional and addictive disorders. Dr. Stewart is a member of the Scientific Advisory to the Canadian Centre on Substance Abuse, and served as Editor-in-Chief for the Journal of Gambling Issues from 2010-19. Dr. Stewart founded the Centre for Addiction Research at Dalhousie (CARD), a virtual centre at Dalhousie fostering collaborations among faculty members conducting research on addiction. She sits on the executive committee of the Quebec-Atlantic node of the CIHR-funded Canadian Research Initiative in Substance Misuse (CRISM) and leads the Atlantic component of this node. She also serves as the Graduate Program Coordinator for



the MSc and new PhD program in psychiatry research at Dalhousie. Dr. Stewart receives funding from several research agencies including the Social Sciences and Humanities Research Council, the Canadian Institutes of Health Research, the National Center for Responsible Gambling, the Manitoba Gambling Research Program, Gambling Awareness Nova Scotia, and the Canadian Foundation for Innovation. Her current research examines implicit cognition in addiction, different motives for addictive behaviors including gambling, and social influences on addictive behaviors within romantic couples and the broader social network.

Presentation Topic: Gambling to Cope with Negative Emotions vs. Gambling to Cope with Stress: Longitudinal and Daily Diary Studies

Is gamble to cope with negative emotions distinct from gambling to cope with stress? Do these motives have distinct correlates? In Study 1, 197 gamblers were assessed at baseline and six-month follow-up with an expanded Gambling Motives Questionnaire (i.e., GMQ-R) and validation measures. Results showed the GMQ-R separates coping motives into correlated yet distinct gambling to cope with negative affect vs. gambling to cope with stress factors, each with distinct antecedents and consequences. In Study 2, 123 gamblers completed the GMQ-R at baseline and reported on their daily gambling motives in “real time”. Significant effects of each trait coping motive on daily levels of the corresponding state motive provided additional validity data. Findings increase our understanding of specific coping motives that influence unique gambling behaviors and outcomes. Results may inform the refinement of motivation-matched interventions to enhance specificity for gamblers who gamble to cope with negative affect or stress.

Nassim Tabri

Dr. Nassim Tabri (Ph.D. Concordia University) is an Assistant Professor of Psychology and Director of the Mental Health and Addictions Laboratory at Carleton University. His research focuses on, among other things, how different transdiagnostic factors (e.g., overvalued ideation, perfectionism, and impulsivity) may function together to proliferate and maintain engagement in various health compromising behaviours, including disordered eating and gambling as well as other addictive behaviours (e.g., compulsive buying, substance use). Dr. Tabri has published 31 peer-reviewed papers. To facilitate his gambling research, he has received research funding from Carleton University, Gambling Research Exchange, International Center for Responsible Gambling, and Social Sciences and Humanities Research Council of Canada.

Presentation topic: Advancing the Pathways Model: Financially Focused Self-concept and Erroneous Beliefs as Core Psychopathologies in Disordered Gambling

In the Pathways Model, there are three etiological subtypes of disordered gambling: behaviourally conditioned, emotionally vulnerable, and antisocial impulsive. Despite wide acceptance and study, little is known about core psychopathologies that may traverse the subtypes. In this talk, I will discuss financially focused self-concept and erroneous





gambling beliefs as factors common in each subtype. Data will be presented from two studies (Study 1, N=215; Study 2, N=290) involving disordered gamblers that provide empirical support for a) the existing pathways model and b) our contention that a financial focus as well as erroneous beliefs are elevated across the three subtypes (i.e., they are core psychopathologies of disordered gambling). Discussion will be focused on a need for an expanded Pathways Model that includes both etiological psychopathologies that differentiates between disordered gamblers and core psychopathologies common to most disordered gamblers. Doing so will increase predictive utility and thus benefit prevention and treatment efforts.

Authors: Nassim Tabri and Michael J. A. Wohl

Nigel Turner

Dr. Nigel Turner is a scientist at the Centre for Addiction and Mental Health. He has spent the past 25 years conducting research on addictive behaviors with a focus on gambling behavior. He has published over 100 papers in peer reviewed journals.

Presentation Topic: Covid-19 and Gambling; Impact and Adaptation

Covid-19 has had a huge impact on society as governments try to limit the rate of infection and slow the spread of the viruses. Covid-19 has increased mental health distress and likely increased substance abuse. The impact of Covid-19 on gambling problems however is mixed. On the one hand many casinos have been closed or had limited and this has resulted in a sharp decrease in helpline related calls as a result of the pandemic. In addition, Covid-19 has resulted in a decrease in revenue for the gambling industry. On the other hand Covid-19 has resulted in an increase in revenue for online gambling. In this presentation I will examine the impact of Covid-19 on gambling behavior.

Jamie Wiebe

Dr. Jamie Wiebe has had more than 20 years of direct research experience in the area of problem and responsible gambling research and is currently the Director of Player Health at BCLC, a Crown Corporation that conducts and manages gambling in the province of British Columbia.

Under her leadership, Jamie has provided strategic direction and guidance in the design, analysis and interpretation of research projects to help the industry understand ways to increase safer play and reduce potential harm to players.

She oversees the operation and continuous improvement of player health programs, including research, the GameSense Advisor (GSA) Program, Player Health Marketing and Product Assessments, Voluntary Self-Exclusion Program and policies, New Horizons Conference and accreditations.

Most recently, Jamie spearheaded the Virtual GameSense Advisor Program as part of BCLC's COVID-19 response to enhance support for vulnerable players. The unprecedented program offers more one-to-one accessibility to GSAs and access to resources over the phone and live chat on PlayNow.com.

Jamie has held several research positions at organizations across the country, including the Addictions Foundation of Manitoba, the Alberta Alcohol and Drug Abuse Commission and the Canadian Centre on Substance Abuse. Prior to her leadership role at BCLC, Jamie was the Director of Advancement and Best Practices at the Responsible Gambling Council in Ontario.

Panel Session: Future of Responsible Gambling in Canada



Robert Williams

Dr. Williams is a professor in the Faculty of Health Sciences, University of Lethbridge, in Lethbridge, Alberta, Canada and also a Research Coordinator for the Alberta Gambling Research Institute. Dr. Williams teaches courses on gambling; provides frequent consultation to government, industry, the media, and public interest groups; and regularly gives expert witness testimony on the impacts of gambling. Dr. Williams is widely published and is a leading authority in the areas of: prevention of problem gambling, the etiology of problem gambling, online gambling, the socioeconomic impacts of gambling, the proportion of gambling revenue deriving from problem gamblers, the prevalence and nature of gambling in Aboriginal communities, and best practices in the population assessment of problem gambling. He is also the Team Lead for the AGRI National Project.

Presentation topic: The AGRI National Project: Overview & Main Prevalence Findings

Comprehensive national investigations of gambling have been conducted in many countries, but not Canada. The present three-year project addresses this deficit with the aid of a large multi-disciplinary, multi-university, AGRI-based team of researchers combined with co-funding from the Canadian Consortium for Gambling Research, the Canadian Centre for Substance Abuse and Addiction, and Gambling Research Exchange Ontario. The three research elements to this investigation are a national Statistics Canada Survey of 28,000 Canadians in 2018; a national two-year Online Panel cohort of 10,000 Canadians in 2018 and 2019; and Independent Corroborating Investigations in 2019 in the form of key informant interviews of major provincial stakeholders and indigenous leaders, and large-scale surveys of casino patrons and employees. The current presentation outlines the results of the 2nd and 3rd objectives of the project, which is the current Canadian and provincial rates of: a) gambling (adults, adolescents, and changes since 2002); b) online gambling (adults, adolescents, and changes since 2002); c) illegal gambling (adults); and d) problem and at-risk gambling (adults, adolescents, and changes since 2002).

Presentation topic: The Etiology of Problem Gambling in Canada

Longitudinal investigations provide the best information about the etiological contributors to problem gambling. Many prior longitudinal studies have been conducted, including large-scale ones in Alberta (LLLLP), Ontario (QLS), Sweden (Swelogs), Victoria, Australia (VGS), New Zealand (NZ-NGS), and Massachusetts (MAGIC). Collectively, these studies have provided a wealth of useful information. However, while instructive, a major limitation is that they all had very small numbers of problem gamblers (generally between 50 - 150), limiting the power of their analyses. Several of these studies also did not comprehensively

assess all variables of potential etiological importance. An important finding deriving from these investigations is that the etiological predictors identified appear to be somewhat jurisdiction and time frame specific. In this regard, there have been no national Canadian longitudinal studies, and none conducted in recent years. The present study addressed these above issues with a national cohort of 10,119 Canadian gamblers that included 1,346 problem gamblers in the 2018 baseline as well as 2,710 with a mental health disorder and 778 with a substance use disorder. This presentation will report on the predictors of both concurrent problem gambling in the 2018 baseline as well at variables that most strongly predicted future problem gambling at the follow-up in 2019. It includes an analysis of the self-reported perceived causes of problem gambling among 463 individuals.

Michael J. A. Wohl

Dr. Michael Wohl is a Professor and Graduate Chair in the Department of Psychology at Carleton University. Research in his Carleton University Gambling Laboratory focuses on, among other things, factors associated with disordered gambling (e.g., loyalty program membership), facilitators of responsible gambling (e.g., monetary limit setting and adherence), and means to overcome barriers to behaviour change (e.g., nostalgic reverie for the pre-addicted self). Dr. Wohl has published over 140 papers and is the recipient of Carleton's Research Achievement Award, the Carleton University Teaching Excellence Award, and the Faculty Graduate Mentoring Award. Recently, he was named a Fellow of the American Psychological Society and Society for Personality and Social Psychology. To facilitate his gambling research, Wohl has received funding from the Canadian Foundation for Innovation, Ontario Problem Gambling Researcher Centre (now Gambling Research Exchange Ontario), National Center for Responsible Gambling, Ministry of Health and Long-Term Care, and Manitoba Gambling Research Program.

Presentation Topic: Loyalty Programs: Potentials for Harm and Possibilities for Harm-Minimization

The field of gambling studies has been remarkably silent on the impact of loyalty programs in the gambling industry. In this talk, I review the scant empirical literature, much of which comes from my laboratory, with the aim of stimulating discussion and research about the impact of loyalty program membership may have on players. Preliminary evidence suggests that disordered gamblers are more apt to join a loyalty program and be disproportionately rewarded (due to the amount of money they spend gambling) relative to recreational and at-risk gamblers. As such, loyalty programs in the gambling industry may generate harms in vulnerable individuals. However, loyalty programs may also be well positioned to facilitate harm-minimization by promoting behavioral tracking that is collected on every member—information that can be provided to players to advance responsible gambling. Additionally, members could be rewarded for engagement with responsible gambling tools, which may increase the currently low rate of tool use. That said, structuring loyalty programs to reward the use of responsible gambling instruments with time on device or even non-monetary prizes may be incompatible with harm-minimization efforts. This talk concludes with a call for empirical research on the antecedents and consequences of loyalty program membership to better triangulate on the potential pitfall and benefits of loyalty programs in the gambling industry.

Authors: Michael J. A. Wohl, Samantha J. Hollingshead, Christopher G. Davis



Igor Yakovenko

Dr. Igor Yakovenko earned his Ph.D. in clinical psychology from the University of Calgary, completing his clinical residency at Yale University and a postdoctoral fellowship at the University of Alberta in public health and addictive behaviours. He is an Assistant Professor and clinical psychologist in the Departments of Psychology & Neuroscience and Psychiatry at Dalhousie University. His research and clinical work focus on the associated features and determinants of substance and behavioral addictions, as well as co-morbidity of addiction and other psychiatric disorders. His recent CIHR-funded research in Canada has been invested in developing evidence-based web interventions for substance use and disordered gambling in an effort to increase access to harm reduction interventions for these disorders to the general public.

Presentation Topic: Gambling Within Video Games: Update on New Developments and Risk Factors

With the introduction of Gaming Disorder as a new behavioral addiction diagnosis, gambling researchers have begun to study potentially addictive elements of video games. Often focusing on a video game feature called a loot box, this research area studies player ability to pay real money or virtual currency purchased with real money to buy a virtual box that produces randomly generated in-game rewards such as items for game characters or alterations to their visual appearance called skins. This development has blurred the lines between video gaming and gambling since these so-called “microtransactions” in games are heavily criticized due to their resemblance to slot-machine gambling (i.e., spending money on a random outcome on a virtual screen). Indeed, much like slot machine gambling, microtransaction spending has been shown to be associated with worse problem gaming and gambling outcomes in both adult gamers and adolescent gamers. Moreover, the prevalence of such transactions in video games appears to be very high with estimates of 34-54% of the top 100 mobile and computer games containing loot boxes, and 94% of these games deemed suitable for children aged 12+. The presentation will provide an overview of the microtransaction industry in video games, highlighting its gambling-like dangers. New data from a national sample of adult video gamers will be presented, reviewing potential risk factors for overindulgence in gambling within video games. Finally, public health and future research implications will be presented as a call to action for gambling researchers to turn their attention to an unregulated, potentially damaging gambling activity in a seemingly unrelated industry.



April 27 - 29, 2021

Conference Posters



Title: Executive Function Impairments as Vulnerability Markers for Gambling Disorder: A Family Study

Authors: Robert Aidelbaum¹ David Hodgins², Vina Goghari¹

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ABSTRACT: Executive function (EF) deficits have been hypothesized to represent an underlying mechanism of gambling disorder (GD) despite the lack of a clear profile of EF within GD. Additionally, it remains unclear whether EF deficits represent a manifestation of GD or vulnerability markers present before its onset, highlighting the need for studies which assess cognitive dysfunctions as GD vulnerability markers. As such, this study sought to investigate the manifestation of a broad range of EFs (i.e., verbal response inhibition, mental flexibility, working memory, motor response inhibition, risk taking, & capacity to delay gratification) in a GD sample (n = 40), their first-degree familial relatives (n = 19), and a sample of community controls (n = 50). The results of this study suggest that GD is best characterized with selective decision making (i.e., capacity to delay gratification) and response inhibition (i.e., capacity to inhibit overlearned verbal responses) impairments. Additionally, impaired capacity to inhibit verbal responses was similarly observed within the relative sample, providing preliminary evidence of its characterization as a vulnerability marker. Future research should seek to further explore the domains of decision making and response inhibition to assess for performance variation based on task characteristics (e.g., task modality, reward process).

Title: A daily diary investigation of self-regulation in gambling: factors contributing to success and failure in playing within self-imposed gambling limits

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ABSTRACT: Applying the framework of self-regulation and its depletion (Muraven & Baumeister, 2000) into the gambling domain, we conducted a daily diary study in order to investigate the possible interaction between individual difference variables and daily proximal variables known to strain self-regulation resources in the ability to stick to self-imposed gambling limits. Specifically, we assessed both individual difference variables and daily proximal variables that are associated with gambling limits violation as well as the intensity of gambling urges experienced and incidence of gambling (versus not gambling). A baseline survey was used to measure individual difference variables while 21-day daily diaries were used to assess daily proximal variables. Hierarchical linear modeling analyses were conducted in order to assess the degree to which gambling limits violation was predicted by individual difference variables, daily proximal variables and their interactions. Consistent with the framework, we found that gambling limits were more likely to be violated on days when self-regulatory resources were previously exerted to resist other additive urges and by people whose trait self-control is low. Furthermore, when self-regulatory resources were exerted on resisting many addictive temptations, participants with high trait self-control were more likely to violate their gambling limits than those with low trait self-control.

Title: A protocol for identifying gambling grey literature for systematic and scoping reviews

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ABSTRACT: Gambling research is published in both the primary and grey literature. “Grey literature” refers to research published outside of academic journals and books, such as technical reports. Preliminary data based on GREO’s Evidence Centre database show that grey literature accounts for up to 33% of recent gambling research publications in Canada. When performing systematic or scoping reviews, it is best practice to include grey literature in the search strategy. However, it is often excluded from gambling reviews because inclusion is labour intensive and requires specialized knowledge.

This poster presents a gambling adaptation of Godin et al.’s four strategies for systematically searching public health grey literature. We have adapted the methodology by incorporating gambling-specific databases and identifying target websites based on a priori criteria for organizations with gambling-related mandates.

We executed the grey literature search alongside a systematic search of journal articles on gambling from five countries including Canada for the time period 1996-2018. The searches yielded 1,501 grey documents and 4,426 journal articles, meaning grey literature comprises over 25% of the sample. This demonstrates that grey literature accounts for a significant portion of gambling research, and that it can be searched with a thorough and reproducible, yet feasible protocol.



Title: Development and validation of a DSM-5 version of the National Opinion Research Center Diagnostic Screen for Gambling Problems (NODS)

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ABSTRACT: The National Opinion Research Center Diagnostic Screen for Gambling Problems (NODS) is one of the most commonly used outcome measures in gambling intervention trials. However, a screen based on DSM-5 gambling disorder criteria has yet to be developed or validated, since the DSM-5 release in 2013. This is possibly because the criteria for gambling disorder (formerly, pathological gambling) only underwent minor changes from DSM-IV to DSM-5: the threshold for diagnosis was reduced from 5 to 4 criteria, and the “performed illegal acts” criterion was removed. Development of a measure to capture these changes is still warranted. The current study examined the psychometric properties (i.e., base rates, internal consistency, sensitivity, specificity, factor structure, etc.) of a new version of the NODS that does not include the “illegal acts” question and classifies individuals based on a cut score of 4. Discriminative validity of the DSM-5 severity cut scores were also evaluated (i.e., mild, 4-5; moderate, 6-7; and severe, 8-9). Additionally, the new NODS was evaluated for how well it identifies ICD-11 gambling disorder. Considering the lack gambling screening measures validated for use online, the NODS was administered via online self-report. 1020 participants were recruited via Amazon’s TurkPrime.

Title: A Preliminary Investigation into the Transdiagnostic Features of Behavioural Addictions and Substance Use in Individuals Seeking Treatment for Gambling Disorder

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ABSTRACT: It has been proposed that substance and behavioral addictions share similar risk and mechanistic factors, known as transdiagnostic processes. Understanding addictions within a transdiagnostic model may engender a more effective assessment and treatment process, allowing similar underlying pathologies to be targeted in the treatment of multiple addictive disorders (Kim & Hodgins, 2018). However, research investigating the transdiagnostic processes of gambling disorder (GD) and substance use disorder

(SUD) is in its infancy. Therefore, our study will investigate the transdiagnostic processes of treatment-seeking individuals with GD and SUD in São Paulo, Brazil. To this end, 43 participants with GD and 7 participants with SUD have been recruited to investigate the transdiagnostic processes. Specifically, it is hypothesized that individuals with GD and SUD will share similar features in areas of psychopathology (Beck Depression Inventory), personality (Personality Inventory for DSM-5—Brief Form), impulsivity (Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency, Impulsive Behavior Scale), trauma (Childhood Trauma Questionnaire), and emotion regulation (Difficulties in Emotion Regulation Scale). Data collection is ongoing, and we anticipate recruiting 36 more participants with SUD in the upcoming months. Overall, this study is an important first step in the development of a transdiagnostic treatment program for both substance and behavioral addictions.

Title: Compulsion without motivation: the effects of slot machine-like schedules on a depressive animal model

Authors: Danika L. Dorchak¹, Catherine S. Laskowski¹, David R. Euston¹

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ABSTRACT: Developing an animal model of gambling addiction would allow for breakthroughs in understanding the neural correlates of addiction and rapid development of treatments. We previously demonstrated that rats conditioned on gambling-like schedules of reinforcement develop high motivation but not compulsive responding. Because depression is strongly implicated in the pathology of gambling addiction, we tested whether depression might precipitate the development of compulsion. We compared 18 Wistar-Kyoto (WKY) rats, a depression model, with 18 Wistar (WIS) controls. For four weeks, animals pressed a lever to receive reward delivered on a fixed or gambling-like schedule. They were assessed using a battery of “addiction” tests, which measure persistent responding despite countervailing cues, increasing work requirements and negative consequences. WKY had slower response rates, longer pauses between trials, and displayed avolition when work requirements increased. However, WKY responded more when cues predicted reward unavailability and persevered for longer despite negative consequences, suggesting increased compulsivity, although this was not related to the schedule of reinforcement. These results demonstrate that in the WKY model of depression, compulsion is common but is not a result of the gambling-like schedule. This suggests that other factors yet to be discovered may be needed to induce behavioural addiction in rats.



Title: Longing for the game: Nostalgia for gambling predicts relapse among people living with a gambling disorder

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ABSTRACT: Nostalgic reverie (sentimental longing for the past) has been demonstrated as a means to promote behaviour change among people living with a gambling disorder. However, nostalgia may also undermine the recovery process if the content of the longing is focused on the addictive behaviour. This is because nostalgia motivates a desire to bring the longed-for past into the present. We examined this heretofore untested hypothesis among two-hundred and fifty people in recovery from a diagnosed gambling disorder. Participants completed items that assessed nostalgia for their past gambling experiences (e.g., nostalgia frequency) and behaviour change (e.g., perceived stage of change, recovery progress and previous relapses). As predicted, greater nostalgic reverie for gambling was significantly associated with reported relapses. This finding provides evidence for a novel obstacle that may be encountered on the path to recovery, and suggests that means to contend with nostalgia should be considered during the treatment of disordered gambling.

Title: Predictors of treatment goal outcome for problem gamblers who received a brief motivational intervention.

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ABSTRACT: Objective: Predictors of treatment goal outcomes (TGOs) were examined in a randomized clinical trial evaluating a brief motivational intervention (MI) for problem gamblers (PGs).

METHODS: PGs (N = 314) were randomized to one of four conditions: (1) combined telephone MI and self-help workbooks (MinimalTx), (2) combined telephone MI and self-help workbooks with telephone booster sessions (BriefTx), (3) self-help workbooks only (WB) or (4) waitlist (WL). Ordinal regressions examined predictors of TGOs (not, partially, mostly, or completely met) at three, six, and 12-month follow-ups.

RESULTS: At the three-month follow-up, individuals without previous gambling treatment, and those randomized to the BriefTx had better TGOs. Males, individuals without a comorbid alcohol use disorder diagnosis, without previous gambling treatment, and those



randomized to WB had better TGOs at the six-month follow-up. No significant predictors emerged at the nine or 12-month follow-ups.

CONCLUSION: Four predictors of TGOs were observed, suggesting specific populations may require tailored treatment approaches (e.g., women, and PGs with comorbid substance use or past gambling treatment). Although BriefTx assignment initially predicted TGOs, its predictive abilities were surpassed by the WB condition at the six-month follow-up. The absence of significant predictors at the nine or 12-month follow-ups suggests predictor effects were not sustained.

Title: Addiction Chronicity: Are all Addictions the Same?

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ABSTRACT: While many studies have assessed the onset and patterning of addictions, a head-to-head comparison of the relative chronicity of different addictive disorders has never been done. Using data from the Quinte Longitudinal Study (QLS), we compared the chronicity of addiction over five years amongst individuals who met criteria for: problem gambling (PG); behavioral addiction(s) (BA); substance addiction(s) (SA); or multiple addictions. A one-way analysis of variance found that people having multiple addictions had a significantly more chronic course. No significant difference was found in the chronicity of problem gambling compared to substance addiction. However, problem gambling was found to be more chronic than other behavioral addictions. A similar analysis was conducted on the longitudinal data from the Leisure, Lifestyle, & Lifecycle Project (LLLPP) using a different assessment system (DSM classifications for problem gambling, substance addiction, and multiple addictions). The same results were found, with multiple addictions being significantly more chronic than both substance addiction and problem gambling and no significant difference in the chronicity of SA versus PG.

Title: Social Network Moderates the Association Between Recent Retirement and Problem Gambling Severity Among Older Adults

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ABSTRACT: Gambling among older adults is increasing in prevalence. Retirement is related to increased leisure time and social isolation, which each pose potential risk for greater gambling among older adults (Subramaniam et al., 2015). This study examined the moderating influence of social networks on the relationship between retirement transition (within past 12-months) and gambling. Participants ($n=205$, age: $M=63.50$, $SD=1.01$, range=62-65) completed questionnaires including demographics, a single-item self-reporting recent retirement (yes/no), Lubben Social Network Scale (LSNS; Lubben, 1988), and 9-item Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). Results of a moderation analysis (Hayes, 2013), with PGSI as the outcome, showed a significant interaction (i.e., significant moderation) between retirement and LSNS ($b=-.14$, $SE=.05$, $p<.01$). Follow-up simple slopes examined how retirement influenced gambling at low- ($-1SD$), mean, and high-level ($+1SD$) LSNS scores. For individuals at low-level LSNS, retirement was associated with significantly increased gambling severity risk ($b=1.68$, $SE=.47$, $p<.001$); at the mean of LSNS, retirement was associated with significantly lesser risk ($b=.02$, $SE=.33$, $p=.012$); high-level LSNS did not demonstrate significant moderating effects. Results suggest that socially disengaged older adults are at increased risk of severe gambling-related problems post-retirement. Findings will be discussed in relation to gambling risk-reduction for older adults.

Title: Traditional Indigenous Forms of Gambling and Games

Authors: Marley HeavyShield¹, Kalli Eagle Speaker¹, Jennifer Williams¹, Robert Williams¹

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ABSTRACT: There is limited research that explores Indigenous gambling and gaming, and the research that does exist focuses primarily on problem gambling and addiction. The definition of 'gambling,' itself not necessarily an appropriate lens to provide a full understanding of the cultural depth and meaning of Indigenous games. Indigenous gaming has existed since pre-colonization and occurs in several Indigenous cultures throughout North America. The following research project dives into traditional Indigenous forms of gambling and games, particularly Blackfoot games. By conducting interviews with elders and knowledge keepers from the local Blackfoot community, we can grow an awareness of the long history and cultural relevance gaming has for Blackfoot Peoples. At the same time, we are able to compare the presentation of traditional games through the past and to the present through a survey collecting prevalence data of games today. Interviews conducted were unstructured and centred around the background of Blackfoot games – discussion covered what games were played, how they were played, how colonization has changed them, and their role in Blackfoot culture. The anonymous survey asked participants questions regarding Blackfoot games today – what games are still played, if



they've played them, if bets are made – and about demographics. Through a merged lens that combines scientific methods and Indigenous ways of knowing, the following poster will present a concise story utilizing the results from the interviews and survey. This story will detail the history of Blackfoot gaming, from tradition, through colonization, to the post-colonial present day – in which these games continue to provide a connection to culture, spirituality, and community for Blackfoot Peoples.

Title: Correlates of Anxiety Symptoms Among People Seeking Treatment for Gambling Disorder

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Abstract: Anxiety is one of the most frequent mental health problems that co-occur with gambling disorder. However, the correlates associated with anxiety among people who gamble is largely unknown. In the present study, we investigated gambling, personality, and addictive behaviors as potential correlates of anxiety symptoms among 415 people seeking treatment for gambling disorder in Brazil. Correlates of gambling included frequency of gambling, problem gambling severity, and cognitive distortions. Personality variables included impulsivity as well as temperament and character. Substance and behavioral addictions were also assessed. Symptoms of anxiety was measured using the Beck Anxiety Inventory. Separate multiple regression analyses were conducted to identify correlates of anxiety symptoms. Gambling severity, hours spent gambling per day, money lost in the past month, attentional aspect of impulsivity, harm avoidance, self-transcendence, severity of alcohol, shopping, work, and exercise were associated anxiety symptoms. In a final multiple regression with only the significant correlates entered, gambling severity, attentional aspect of impulsivity, harm avoidance, shopping, and work remained significant predictors of anxiety. Taken together, the research suggests that people with co-occurring gambling and anxiety may present complex clinical presentations that may warrant more intensive treatment.



Title: Negative and positive urgency moderate the relationship between attentional bias and problem gambling in electronic gaming machine players

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ABSTRACT: Attentional bias (AB) to gambling-related stimuli is associated with increased problem gambling severity. However, the specific predictors of AB among those who gamble is largely unknown. Impulsivity has been found to be associated with AB among those who abuse substances, and we hypothesized that this would also be true for individuals with problem gambling. In the present study, we tested whether facets of impulsivity, as measured by UPPS-P (negative urgency, positive urgency, sensation seeking, lack of perseverance, lack of premeditation) and the Barratt Impulsiveness Scale-11 (cognitive, motor, non-planning) moderate the relationship between problem gambling severity and AB. Seventy-five electronic gaming machine (EGM) players participated in a free-viewing eye-tracking paradigm to measure AB to EGM images. Participants completed several self-report measures, including a demographic survey, the UPPS-P, the BIS-11, and the Problem Gambling Severity Index (PGSI). As predicted, there was a significant interaction between negative and positive urgency and PGSI on AB, such that AB to EGM stimuli was greatest among those with high negative and positive urgency and problem gambling severity. Analysis of the BIS-11 did not produce similar interaction effects. The results indicate that affective impulsivity is an important contributor to the association between problem gambling severity and AB.

Title: Investigating Mind-Wandering, (Dark) Flow, and Affect During Multiline and Single-line Slot Machine Simulations

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ABSTRACT: During slots play, some players refer to a state of immersion in which their attention is locked in by the machine—a state researchers have labeled ‘dark flow.’ On single-line slots, there are long chains of losses in which the machine is silent. These losing streaks are occasionally interrupted by the attention-capturing sights and sounds following a win. On multiline slots, there are losses and wins, but also losses disguised as wins (LDWs) where despite losing money on a spin, the machine nevertheless produces win-like, attention-capturing sounds and animations. We propose that the lack of celebratory feedback during long losing streaks in single-line slots will allow players’ minds to wander and reduce flow. By contrast, in multiline slots, this propensity to mind-wander may be curtailed in part by LDWs and their attention-capturing feedback. 110 participants played a multiline and single-line slot machine simulator and were periodically interrupted by thought probes to assess whether they were thinking about the game or mindwandering. After playing each simulation, we also retrospectively assessed dark flow and affect. Compared to single-line slots, multiline play led to fewer mind-wandering responses, more dark flow, and more positive affect. Implications for problem gambling will be discussed.

Title: Winning isn’t everything: The impact of optimally challenging Smartphone games on flow, game preference and individuals gaming to escape aversive bored states

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ABSTRACT: Here we assessed whether gaming to escape is characterized by heightened boredom proneness and depression in everyday life in addition to negative consequences related to smartphone gaming. We also assessed whether escape players preferentially experience flow, positive affect and less boredom than non-escape players. We also measured whether escape players had enhanced arousal and urge during actual gameplay. To compare in-game experiences between escape and non-escape players, we characterized gaming to escape as the upper tercile of all escape scores in our sample (n=20), and non-escape players as the lower tercile of escape scores (n=20). As expected we showed that gaming to escape was associated with boredom proneness in everyday life, which was in itself correlated with depression. During gameplay, those who game to escape boredom demonstrated heightened flow and positive affect compared to non-escape players. State boredom scores however were comparable between the two groups. Importantly, those who game to escape demonstrated greater arousal and urge-to-play following gameplay than non-escape players – but only for optimally challenging games. Findings converge to suggest that bored escape players may seek flow and its consequent positive affect for relief from states of hypo-arousal and monotony through optimally challenging games.



Title: Does dopamine agonist treatment create brains that are vulnerable to gambling addiction?

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ABSTRACT: Prolonged use of dopamine agonist medications like pramipexole (PPX) produce long-lasting changes in the brain's reward system which may cause an individual to become vulnerable to drug and behavioural addictions. In this study we compared the brains of rats that were administered PPX or vehicle solutions while they worked for food reward on either a fixed ratio or a slot machine-like, random ratio schedule of reinforcement. Using immunofluorescence antibody staining we looked for changes in dopamine D2 and D3 receptor density and distribution in brain regions associated with reward processing and addiction. We found that PPX administration led to a marked increase in D2 receptor density in the medial prefrontal cortex, a region that has direct inhibitory control over reward seeking behaviours. Other regional changes to D2 and D3 receptor density, relationships to addiction-like behaviour, and the implications of these findings will also be discussed. Results from this study provide insight into exactly how the brain is affected by changes in dopamine signaling and the relationship of these brain changes to behaviour and addiction symptomatology.

Title: Development of an Ecologically Valid Non-Human Primate Model of Gambling

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ABSTRACT: Promising animal models provide insights into the psychological mechanisms of bartering and gambling. First, the token exchange paradigm shows that several non-human primate species have the symbolic and computational abilities to produce strategic economic behaviours. Second, they are subject to similar psychological dysfunctions exhibited by human problem gamblers, such as increased impulsivity and non-optimal cognitive biases when confronted with risky decision contexts. However,

the ecological validity of these laboratory-based experimental situations tends to be limited. Our research is intended to rectify these weaknesses by adapting a spontaneously occurring token-mediated bartering system in a free-ranging population of Balinese macaques into naturalistic gambling-like situations. Results from observational and field experimental data revealed a culturally maintained token economy, involving value-based token selection and payoff maximization. Our field methodology includes using a modified version of the Plinko game to test whether these monkeys exhibit the “near-miss effect”, whereby loss outcomes resembling win outcomes are treated as more similar to wins than losses. In creating a more ecologically valid animal model of bartering and gambling, the present research will provide a more solid platform for conducting animal-based gambling research, as well as shed light on the generalizability of findings from less ecologically valid models.

Title: Primary Gambling Motives Among Individuals Who Participate in Speculative Financial Market Activities

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ABSTRACT: Speculative financial market activities (SFMA) refer to the trade of short-term, high-risk financial instruments (e.g., stocks) with the goal of making immediate profits. Like investing and gambling, SFMA outcomes are chance-based, and like gambling, SFMA involve staking money on events with an unknown outcome with a high risk of loss. However, SFMA are neither expressly investments, nor gambling. Instead, SFMA can be conceptualized as existing on a continuum between investing and gambling. Past research has found individuals who engage in SFMA often exhibit greater problem gambling severity. Presently, the reasons those who engage in SFMA choose to gamble remain relatively unknown. Using the Alberta Gambling Research Institute National Project Online Panel dataset, we sought to examine how gamblers who had and had not engaged in SFMA differed in their primary motives for gambling. Participants were identified as non-speculative gamblers (NSGs), or speculative gamblers (SGs). Compared to NSGs, SGs were more likely to endorse socialization and skill development motives, less likely to endorse enhancement, coping, and financial motives, and reported greater problem gambling severity. Improved understanding of gambling motives among those who engage in SFMA may provide insight into the mechanisms that underlie their propensity for greater problem gambling severity.



Title: Illegal Gambling in Canada

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ABSTRACT: Introduction: Proponents of offering a legal gambling industry in Canada argue that a regulated industry eliminates illegal forms of gambling and redirects this money for government use. However, there has never been an empirical evaluation of this assumption, which is the purpose of this study.

METHODS: 1. Prevalence of illegal gaming/betting house charges applied by law enforcement from 1977-2018 (Statistics Canada); 2. Self-reported illegal gambling participation collected through the AGRI National Project online panel; 3. Self-reported participation in age-prohibited gambling activities among Canadians aged 15-17 in 2002 and 2018 in the Canadian Community Health Survey.

Results: Charges related to both betting house and gaming house have dramatically declined from 1977 to 2018, coincident with the introduction of legal gambling opportunities. The prevalence of self-reported illegal gambling participation in Canada is very low both nationally (<5%) and provincially. Overall, Canadians aged 15-17 have low prevalence (<5%) of self-reported age-prohibited gambling participation.

Discussion: The results of this study show that while the introduction of legal gambling opportunities appears to have significantly diminished illegal gambling, it has not eliminated it completely.

Title: Problem video gaming in adolescents: An examination of the Pathways Model

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ABSTRACT: Problem video gaming (PVG) as a behavioral addiction contributes to physical, psychological, and interpersonal issues, and is associated with increased mental health issues. Estimated prevalence rates for PVG range from 1.7% to 10% among adolescents and adult samples. Further, adolescence is a developmental period marked by substantial

changes that occur biologically, cognitively, socially, and emotionally increasing likelihood of excessive engagement in video gaming. Like other behavioral addictions, it has been proposed that PVGs are part of a heterogeneous group with different profiles dependent on specific factors that define them. Thus, the following study aims to test one of the most widely accepted frameworks for gambling, the Pathways Model, to explain the etiology of PVG among adolescents. Utilizing a cross-sectional design and self-report questionnaire from high-school students in Wood County, Ohio, the study included 228 PVGs (score of 30+ on IGDS-9; 64.9% male). Additional measures examined hours played, internalizing (anxiety/depression), and externalizing (aggression/delinquency) problems. A latent class analysis concluded 6 classes and provided preliminary support for three distinct subgroups like those proposed by the original Pathways Model. Thereby suggesting that gamers form a heterogeneous group with each profile requiring different considerations in developing targeted treatments. Implications for future research are discussed.

Title: Gambling in Canadian Primary Care: A Narrative Review

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ABSTRACT: In Canada, gambling is scarcely addressed in primary care actors' training. The impact of the COVID-19 pandemic on gamblers illustrates the importance of adequate care for this population. Improving the primary care response to this issue involves exploring the perspective of primary care actors and defining their role. We realized a narrative review of gambling and primary care in the following databases using keywords related to gambling and primary care: Academic Search Complete, CINAHL Plus with Full Text, MEDLINE with Full Text, APA PsycInfo, Social Work, Abstracts and SocINDEX. This yielded 789 articles from which 305 duplicates were removed. The 28 articles were retained and organised in four themes: beliefs and attitudes, screening, treatment, and specific populations. Studies reveal that primary care actors feel concerned by problematic gambling but report a lack of knowledge on the subject. Although screening tools have been evaluated for primary care use, populations that should benefit from screening are not clearly defined. Uncertainty as to primary care treatment and referral options persists.



Title: Moving from social gambling to problem gambling to recovery: Contextual factors

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ABSTRACT: There is an increasing acknowledgement that the financial, psychosocial, familial and community damage associated with problem gambling can occur long before a gambler reaches problematic levels with gambling. With women gamblers, recent research has indicated that there appears to be socio-cultural mediators (e.g., sexism, socio-economic status, history of abuse, history of trauma, etc.) that influence the progression of women from a social gambler into a problem gambler. Research on how particular contextual factors activate the shift to problem gambling, and correspondingly, the movement toward recovery is essential in understanding how to assist female problem gamblers, specifically relative to informing women directly about how problem gambling manifests and to inform the development of effective intervention strategies at strategic points in time. The aim of this qualitative, interprovincial study was to describe, interpret, analyze, and understand women's gambling progression and their processes of recovery in order to effectively respond to their needs. The goal was to identify potentially risky transition periods and concurring influences, to link them to intervention and education. The conceptual framework is both feminist and constructivist as women and their problem gambling are complex issues that are influenced by biological, psychological, social, cultural, and political factors. Specifically, this research conducted a qualitative exploration of how women move from social gambling to problem gamblers within the provinces of Manitoba and Alberta, Canada. The emergent themes and information derived from this provide a picture of gambling progression over time, illuminating contextual factors. Understanding the process factors that impact women's gambling experiences highlights the potential points of service intervention and treatment services at these "critical" points.

Title: Examining Problem Gaming During COVID-19: Subgroups and Mental Health Correlates

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ABSTRACT: Background: Reports indicate that more people have been playing video games since the announcement of COVID-19 restrictions. Given the unprecedented level of stress and isolation associated with the pandemic, people vulnerable to excessive gaming may be at heightened risk of developing disordered behaviours. The goal of the present multi-wave longitudinal study is to distinguish high (from low) risk gamers during the pandemic based on their gaming disorder symptoms. Method: Participants (N = 332; 54% male) completed three waves of surveys, beginning in April 2020. All participants reported gaming at least once in the three months prior to the pandemic. Results: We conducted a latent trajectory analysis using scores on the Internet Gaming Disorder (IGD) scale. Based on model fit information, two classes of gamers were identified. Class 1 (i.e., low-risk gamers) was characterized by low scores on the IGD that remained stable throughout the first three waves. Class 2 (i.e., high risk gamers) were defined by high initial scores on the IGD that remained stable across the first three waves. Follow-up analyses using t-tests revealed that compared to low-risk gamers, high-risk gamers had significantly higher baseline depression ($d = 0.59$), anxiety ($d = 0.63$), hazardous alcohol use ($d = 0.59$), and coping motives for gaming ($d = 1.20$). Conclusions: Consistent with a vulnerability model, our findings suggest that some individuals maintained high levels of problem gaming during COVID-19. These individuals were at risk for other mental health and addiction issues, which may reflect maladaptive coping strategies to manage pandemic-related distress.

Title: Self-Coding of Memory Associations: A Simple Method to Resolve Ambiguity and Improve Prediction of Behaviours

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ABSTRACT: The use of open-ended methods provides valuable information that may not be accessed through other means. However, these methods are often costly and time consuming and the issue of ambiguity is often present. This study evaluates the use of participant self-coding for measures of indirect memory associations for gambling and video gaming in an attempt to resolve these issues. A survey of 3,176 Canadian adults was conducted and participants were asked to respond to ten ambiguous word associates and ten behaviour associates. Participants were subsequently asked to classify their responses from a list of researcher-provided options including 'gambling' and 'video gaming'. Measures of gambling and video gaming behaviours and problems were also taken. Consistent with previous studies examining self-coded memory associations for alcohol and cannabis, self-coded association scores for both gambling and video gaming were significantly higher than researcher-coded scores, has significantly higher correlations with self-reported behaviours, and significantly improved the prediction of video gaming and gambling.



Title: Common Predictors of Adolescent Intentions to Gamble, Drink, and Use Cannabis

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ABSTRACT: Early initiation in risk behaviours is a common predictor of later issues and early identification and intervention of those most at risk is of key concern. One predictor of engagement in risk behaviours is the intention to engage in these behaviours in the future. This study borrows from the Theory of Reasoned Action and previous literature on cognitions and addictive behaviours to examine the common variables associated with stated intentions to engage in either gambling, consuming alcohol, or using cannabis in a sample of adolescents. A sample of 1,237 students in grades 8-10 from Vernon, BC were surveyed as part of ongoing prevention programming. Measures of intentions, word associations, outcome expectancy liking, injunctive and descriptive norms, and measures of behaviours were administered. Logistic regressions were conducted to determine the variables that significantly predicted stated intentions to engage in either gambling, drinking, or cannabis use in the next 12 months. The results of this study indicate that there are two common variables associated with the intent to engage in the indicated behaviours: increased engagement in that behaviour and higher word association scores. These results of this study have important implications for prevention, health promotion, and education.

Title: Cognitive distortions, reward-related decision-making, and trait impulsivity in community gamblers: a structural equation model study

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ABSTRACT: Reward-related decision-making (RRDM), impulsivity, and cognitive distortions are key features of problematic gambling. Yet, we are still expanding our understanding of the interplay between these processes and gambling severity. In this study we tested a model of the relationship between these processes and gambling severity in a community sample of individuals who gamble. A structural equation model was tested among 347 individuals who gamble and who were recruited through MTurk. Participants completed measures of gambling-related cognitive distortions, reward and punishment sensitivity,

impulsive personality traits, and gambling severity. They completed two behavioral tasks of RRDM: the 5-trial adjusting delay discounting task and the Iowa Gambling Task. Confirmatory Factor Analysis (CFA) was used to identify a latent “impulsive decision-making” factor which was included in the hypothesized structural equation model. CFA revealed a single latent “impulsive decision-making style” construct. Fit indices for the structural equation model were acceptable, supporting the hypothesized model that: an impulsive decision-making predicts greater cognitive distortions and poorer RRDM, poorer RRDM processes predicts greater cognitive distortions, and distortions, in turn, predict greater problem gambling severity. Supplemental SEM analyses examined the subtypes of distortions that may explain the relationship outlined above.

Title: Moderating Effects of Sex and Coping on the Relationship between Trauma and Addictive Behaviours: A Longitudinal Study using a Parallel Process Latent Growth Curve Model

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ABSTRACT: Despite a robust association between early traumatic experiences (ETEs) and addictive behaviours, very few longitudinal studies have directly investigated this relationship in adolescents. Previous studies have focused primarily on alcohol to the exclusion of other drugs and gambling, and have neglected potentially important moderating variables. The current study examined the relationship between ETEs and addictive behaviours in adolescents ($n = 436$), with a focus on sex and coping as moderating variables, using three waves of data from the Leisure, Lifestyle, and Lifecycle project. Preliminary results indicate that adolescents with higher trauma scores showed a greater growth rate in drug use (highest frequency in past 12 months); of these individuals, those with higher coping skills had less growth in drug use than those with lower coping skills. However, coping did not moderate the relationship between ETEs and gambling problem severity. Sex did not moderate the relationship between ETEs and drug use or ETEs and gambling problem severity. Of note, females displayed significantly lower baseline drug use and gambling problem severity than males, yet significantly greater growth in both addictive behaviours over time. Limitations of this study, as well as implications of coping and gender considerations in early intervention will be discussed.



Title: The Relationship Between Gambling Fallacies, Gambling, and Speculative Financial Market Activities

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ABSTRACT: There is a conceptual and empirical relationship between gambling and financial speculation. Both activities include financial risk-taking; speculators tend to be heavy gamblers and are more likely to be problem gamblers; both gamblers and speculators have similar motivations for engaging in gambling/speculation; and both tend to fall prey to gambling fallacies. However, it is not known whether gamblers and financial speculators succumb to the same fallacies. Using the Gambling Fallacies Measure (GFM) and data collected during the baseline online panel survey administered as part of Gambling and Problem gambling in Canada: A National Study, the current study investigates the similarities and differences in GFM total scores and GFM fallacy-specific scores between gamblers who engage in financial speculation and those who do not. The preliminary results indicate that there is a significant difference between speculating and non-speculating gamblers GFM total scores and fallacyspecific scores: speculating gamblers have higher GFM scores than non-speculating gamblers, suggesting that speculating gamblers endorse a higher number of gambling fallacies than non-speculating gamblers; furthermore, speculating gamblers are more likely to endorse the hot-hand fallacy, the Monte-Carlo fallacy, and the illusion of control.

Title: Co-Use of Substances in a Longitudinal Survey of Ontario Gamblers during the COVID-19 Pandemic

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ABSTRACT: Some research suggests increases in various addictive behaviours during COVID-19-precipitated closures and restrictions. Although gambling while under the influence of substances is associated with an increased level of gambling risk, little information exists on co-use patterns. The current study examines co-use of substances while gambling in a longitudinal survey of Ontario gamblers conducted during the COVID-19 pandemic. Descriptive statistics are outlined for co-use among adults who completed online surveys



in April, August, and December 2020. Each survey was completed by approximately 2,000 respondents, with 600 completing all three waves. Findings will be reported on level and changes of co-use since the beginning of the pandemic restrictions, frequency of co-use in the past year, and frequency of stopping play when feeling intoxicated or limiting alcohol/drug intake while gambling.

Title: Adverse childhood experiences are associated with increased gambling frequency among Alberta adults during the COVID-19 pandemic

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ABSTRACT: BACKGROUND: The COVID-19 pandemic has resulted in increased addictive behaviour worldwide. The purpose of this study was to assess whether adverse childhood experiences (ACEs) influenced changes in adult gambling frequency during the pandemic.

METHODS: In August 2020 an online survey was completed by Albertan adults who gambled in the past year (N = 1,274, M age 35.2 years, 56% female). The 10-item ACE-Questionnaire was used, and participants indicated whether gambling frequency had increased, decreased, or remained stable since the pandemic began in March 2020. Logistic regression models and 95% confidence intervals (CIs) assessed the impact of ACEs on gambling frequency changes adjusting for age, sex, education, marital status, and income.

RESULTS: Half the sample (49%) reported no change in gambling, while 11% had increased and 40% decreased their gambling. Every 1-point increase in ACE score was associated with 21% higher odds of increased gambling during the pandemic (95% CI 1.1, 1.3). Those with ≥ 4 ACEs were 2.5 times more likely to have increased their gambling than those with < 4 ACEs (95% CI 1.7, 3.8). Associations between ACEs and decreased gambling were not significant.

CONCLUSION: Childhood trauma was associated with a significant increase in adult gambling frequency during the pandemic.