



Building knowledge

Ontario Problem Gambling Research Centre
Annual Report 2012/13

Vision

A province whose residents are free from the consequences of problem gambling

Mission

To enhance our understanding of problem gambling and to strengthen treatment and prevention practices through research

Mandate

- Invest in research on problem gambling
- Increase the capacity in Ontario to conduct research on problem gambling
- Disseminate research findings

Values

The Centre will be guided by the following core values/operating principles in the implementation of its mission and mandate. The Centre will:

- Support research consistent with its vision and mission
- Balance research on prevention and treatment topics
- Pursue a high degree of scientific credibility
- Be sensitive to the needs of population groups
- Strike a balance between applied and theoretical research
- Encourage innovation and creativity in research
- Commit to sound management practice

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Message from the Board Chair

Influencing policy and practice through research



Lynda Hessey
Board Chair

Investing almost \$40 million in problem gambling research

Thirteen years ago, there was limited knowledge about the prevalence and impact of problem gambling in Ontario. As a result, the provincial government established the Ontario Problem Gambling Research Centre (OPGRC) to help inform the province's Problem Gambling Strategy. Problem gambling research was a relatively new and emerging field of academic inquiry.

Since that time, the OPGRC has invested close to \$40 million in problem gambling research. In addition, the Centre has initiated the development of problem gambling research capacity in Ontario universities through financial support to 75 researchers and 60 graduate students. As the Centre evolved, it developed a formidable network of provincial, national and international problem gambling experts. This network has helped increase our collective understanding of the complexity of problem gambling and its potentially devastating effects.

In 2000, Ontario was increasing the availability of gambling opportunities with the expansion of casinos. The OPGRC, meanwhile, was carving out new territory in the field of problem gambling research. The Centre quickly established a rigorous research review process that today draws on the expertise of more than 50 national and international experts in the field of problem gambling to review research proposals. Externally evaluated and validated by the Canadian Institutes of Health Research (CIHR), our research review and granting processes are considered stellar within the research community and ensure that problem gambling research dollars are wisely invested.

Delivering on our mandate

Having spent 11 years on the OPGRC Board of Directors and five years as Chair, I have witnessed firsthand the ability of this small organization to deliver impactful results. The Centre has established a strong foundation of problem gambling research in Ontario and has grown into a highly respected leader within the global problem gambling research community. The organization has also played a major role in helping to shape a vibrant provincial and national research agenda. The Centre's mandate to fund research, build research capacity, and translate and exchange knowledge generated by research, has provided a solid foundation for its work.

The knowledge of problem gambling generated by research funded by the Centre has helped to inform problem gambling policy, gaming regulation and program delivery. Our website has made new knowledge and research findings readily available to researchers, academics, students, policy makers, regulators and the general public. The Synopsis Project is just one example of how we are making problem gambling research more widely accessible by translating published research into layman's language and posting these summaries to our website where they can be accessed and leveraged by a wide variety of stakeholders.

Four years ago, the Board set the wheels in motion to establish a platform for change. It was clear that the Centre would need to be able to respond to a rapidly changing and increasingly complex external environment. Ontario's economic position had taken a downward turn and the expansion of gambling was seen as part of the solution to increase provincial revenue. The Ontario Lottery and Gaming Corporation was actively implementing a plan to modernize its operation. As well, a standards-based approach for gambling regulation was being introduced. These factors, together with a growing demand for knowledge about problem gambling, all called for a shift in thinking and an even more strategic approach to our work.

Building a strong and sustainable future for problem gambling research

As part of the Board's direction-setting role, an environmental scan was conducted to inform new strategic directions that would enable us to build a strong and sustainable future for problem gambling research. It was clear that knowledge generated by problem gambling research would remain instrumental in helping to assess the impact of changes in the gambling industry on individuals, populations and systems. In addition, demand for evidence-informed decision making was growing at all levels:

policy development, regulatory standards and best practices in the prevention and treatment of problem gambling.

To ensure our strategic directions were aligned with the needs of stakeholders, decision makers and service providers, we consulted a wide range of groups and organizations that rely on problem gambling research to advance their work. Meetings were held with provincial government ministries, policy makers, researchers, prevention and treatment providers, gambling operators and regulators. This input shed valuable light on the growing need for new and relevant knowledge about problem gambling, increased access to that knowledge, and the need to consolidate our theoretical understanding of problem gambling. This process resulted in the development of our current strategic directions that guide the work of the Board and leadership team. Having a strategic focus has helped to better position the Centre to be more responsive to changes in its external environment.

Collaboration is an area in which the Centre has excelled over the years in building strong provincial, national and international relationships. These relationships have led to fruitful partnerships, global research initiatives, enhanced research capacity and a platform for engaging multiple perspectives on problem gambling in our work.

The publication of the OPGRC's Conceptual Framework of Harmful Gambling this past year is a fine example of the respect that the Centre has earned as a global leader in problem gambling research and knowledge exchange. We successfully brought together leading national and international experts to establish a framework that consolidates our collective theoretical knowledge of problem gambling in a manner that benefits stakeholders on a global scale. The Framework has been recognized for its ability to create a common language across a variety of stakeholders. This facilitates knowledge exchange about the possible causes and consequences of harmful gambling, and the resources required to minimize problem gambling harm.

Facilitating timely access to new knowledge to inform decision making

In keeping with our strategic directions, we have worked to strengthen our role in knowledge translation and exchange so that problem gambling research reaches decision makers in an effective and timely manner to inform the decision-making process. Facilitating access to research results has become more important than ever before given the recent expansion of gambling, including the introduction of Internet gambling and its potential implications for public health. The Centre is committed to exploring new opportunities for increasing access to knowledge generated by problem gambling research in an effort to mitigate potential harm from gambling.

Continuing to innovate to meet new challenges

As I complete my final year as Board Chair, I want to thank my fellow Directors for their support, dedication, perseverance and hard work through periods of tremendous change to ensure effective governance and stewardship for the Centre. I would like to thank Gary O'Connor, our CEO, for his leadership and persistence through the challenges over the past year. I would also like to thank Kathy Miller for her support to the Board. I am thankful as well for the contributions of all OPGRC staff for their continuous support in facilitating the ongoing work of the Centre.

I am especially grateful for the support of our funder, the Ministry of Health and Long-Term Care, not only for their funding but also for their support in encouraging us to explore new directions. Without the support of our stakeholders and our many partners, the OPGRC could not be successful—thank you for helping us to fulfill our mandate. The international experts who came together to develop the Conceptual Framework of Harmful Gambling deserve particular thanks and recognition for their groundbreaking work. However, at the core of OPGRC, is the work of many diligent researchers and students whose work is critical to our understanding of this complex addiction and ways to minimize its harmful effects.

The OPGRC is a resilient organization that will continue to innovate to meet new challenges. In his 2006 report to the Senate, *Out of the Shadows at Last: Mental Health, Mental Illness and Addiction Services in Canada*, Senator Michael Kirby identified problem gambling as "the storm on the horizon." We need to be vigilant and remain proactive in working to reduce the consequences of problem gambling through generating, translating and exchanging knowledge for the betterment of all Ontarians.

Respectfully submitted,

A handwritten signature in blue ink that reads "Lynda Hessey". The signature is fluid and cursive, written over a white background.

Lynda Hessey
Chair, Board of Directors

Stimulating dialogue about problem gambling through research



Gary O'Connor
Chief Executive Officer

Sparking constructive dialogue

Although the Ontario Problem Gambling Research Centre (OPGRC) is a relatively small organization, it has been astute over the years in funding problem gambling research and disseminating research results that have sparked constructive dialogue among policy makers, gambling operators, regulators, educators and treatment providers.

Our work, coupled with that of our provincial, national and international partners, has helped drive the topic of problem gambling to the forefront, leading to impact at the policy, education, industry and treatment levels in our efforts to free people from the consequences of problem gambling. Such consequences can sometimes be extreme—putting at risk the very things we cherish the most.

In 2012/13, the OPGRC continued to make tremendous strides towards fulfilling our strategic goals, while readily adapting to seismic changes within the industry. This year, we saw calls for government to take a more active role in generating evidence-based research to inform policy development and programs; recommendations for increased revenue from gaming through new casinos; the introduction of online gaming and the modernization of lotteries; and changes in how health research is funded in Ontario.

Throughout, we remained steadfast in fulfilling our mandate, while demonstrating our agility in adapting to the ever-changing environment around us.

The Conceptual Framework —foundational work upon which to build

Among our greatest achievements this year was publication of the Conceptual Framework of Harmful Gambling. Disseminated to our stakeholders and throughout the year at provincial, national and international conferences, it communicates the findings of more than a decade of international problem gambling research in terms that will help stakeholders make consistent and better informed decisions in health care, policy and governance, and strategic research. Well received here, at home, and on the global stage, the framework is a key pillar of our strategic plan. It was developed by a team of international and interdisciplinary experts OPGRC pulled together to better understand the factors that influence gambling behaviour and the harmful effects that problem gambling can have on individuals, their families and the community.

We presented it to Canada's top gambling researchers at the Alberta Gambling Research Institute's (AGRI) conference in Banff last April, and to 60 of the world's top gambling researchers at the International Think Tank on Gambling Research, Policy and Practice in Auckland, New Zealand in March. The framework was so well received that the OPGRC has been invited to host the International Think Tank in Toronto in 2015.

The success of this framework led the OPGRC to develop The Problem Gambling Research Framework, which applies evidence-based research to help identify, understand and respond to gaps in knowledge about problem gambling. Visually capturing the complexity of problem gambling, it is expected to support organizations in identifying key knowledge translation exchange priorities and effective responses to problem gambling, including primary and secondary prevention and treatment. Tested in fall 2012 through stakeholder consultation sessions with treatment providers and researchers in Ontario, Canada and internationally, response to the framework was overwhelmingly positive.

Funding breakthrough research and problem gambling research capacity

As a recognized centre of excellence in problem gambling research, the OPGRC awarded more than \$3 million in research funding last year, supporting 39 projects that align with our four strategic outcomes for new and relevant knowledge, consolidated theoretical understanding, accessible evidence and knowledge, and research capacity and productivity. The

expansive nature of these research projects touches on everything from working to meet the unique needs of women gamblers and assessing the impact of introducing casinos in Ontario to identifying factors that influence the transition of young adults from social network gaming to online gambling.

Notable among the applied health research projects we funded is a comprehensive review of problem gambling self-assessment tools for use on an Internet platform, a review of monetary limit tools for Internet gamblers, and an investigation into the implications of modernizing Bingo in Ontario.

Given the rapid expansion of online and publicly accessible gambling opportunities in Ontario, further strengthening problem gambling research capacity has become more important than ever before as a means of informing effective prevention and treatment programs, policy development and program design. To that end, we continued to support emerging multidisciplinary research teams and new researchers to develop their ideas last year through capacity building grants while also investing in student awards at the master's and doctoral levels.

One of OPGRC's major successes over the past 13 years has been in developing problem gambling research capacity. In 2000, only 13 Ontario problem gambling researchers were receiving funding. Today, there are 39 Ontario researchers who are active in the problem gambling field.

Partnering to advance problem gambling knowledge

Partnerships are crucial to the work of the OPGRC as they help build Ontario research capacity and allow us to share costs on common research goals with other organizations with similar interests.

During the past year, we partnered with the Canadian Consortium for Gambling Research (CCGR), joining provincial and federal organizations to jointly fund the development and validation of a gambling participation instrument for use by problem gambling research organizations in general population surveys. We also worked closely with the Ontario Lottery and Gaming Corporation (OLG) to provide sound research evidence to support its responsible gaming mandate. And, we were invited by the Alcohol and Gaming Commission of Ontario (AGCO) to apply research knowledge translation to policy advice on the rollout of the new Responsible Gambling Standards for Ontario.

Striving for a province free from the consequences of problem gambling

Among our many important roles is leveraging research funding to influence responsible gambling practices. With single-game sports betting slated to become a reality with the introduction of Bill C-290, Board Chair Lynda Hessey and I were invited to present to the Canadian Senate Committee in fall 2012. In our efforts to help inform amendments to the Bill that would address responsible gambling concerns, we talked about the public health costs associated with problem gambling and the importance of implementing responsible gambling initiatives.

Last but not least, to speed the translation of research knowledge into action, we posted 230 plain language synopses of gambling research articles to our website last year where they can be easily accessed and understood by researchers, practitioners, policy makers, government agencies and other OPGRC website visitors.

Our success as an organization is deeply rooted in the skills, expertise, knowledge and experience of the OPGRC staff who shares a passion for enhancing awareness and understanding of problem gambling and the risks associated with it through research, capacity building and knowledge exchange. My thanks to Scientific Consultant Michael Goodstadt, Research Officer Diane Santesso, Grants Officer Erika Veri Levett, Knowledge Translation Officer Patrick Moore and Executive Assistant Kathy Miller for helping the OPGRC be a vibrant voice on problem gambling.

Thanks also go to OPGRC's Board Chair, Lynda Hessey, who has been a beacon of light throughout her 11 years on the Board, and an energetic advocate for the growth of problem gambling research as a means of enhancing our understanding of problem gambling and its impact on the health of individuals and communities. My thanks to the OPGRC Board of Directors for their strong leadership and guidance throughout this time of turbulence and change within the research and problem gambling arenas.

As we focus our attention on advancing research evidence and knowledge translation to help prevent, reduce and minimize harm from problem gambling in Ontario, I look forward to working with the OPGRC Board and staff, and with our many stakeholders to meet the changes and challenges that lie ahead.

Gary O'Connor
Chief Executive Officer

Board and Staff

The Ontario Problem Gambling Research Centre (OPGRC) is a not-for-profit corporation dedicated to enhancing the understanding of problem gambling and to strengthening treatment and prevention practices through research.

Here are our Board of Directors and Staff.

| Board of Directors | | | Staff | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------|--|--|
|  Lynda Hessey Chair |  Virginia Carver Vice-Chair |  Joan Marshman Treasurer | | | |
|  Kate Pautler Secretary |  Diane Santesso Research Officer |  Gary O'Connor Chief Executive Officer | | | |
|  Florence Kellner Director |  Heather Chalmers Director |  Erika Levett Grants Officer | | | |
|  Eileen Mahood Director |  Michael Goodstadt Scientific Consultant |  Jean Trinnell Director | | | |
|  Michael Salter Director |  Steven Goodman Director |  Kathy Miller Executive Assistant | | | |
|  Patrick Moore Knowledge Translation Officer |  Veri Levett Grants Officer |  | | | |

Generating **new relevant knowledge** to keep pace with changes in the gambling sector

While the OPGRC has generated extensive knowledge in gambling and problem gambling over the years by funding more than 190 major research projects, the demand for new relevant knowledge continues to grow with the increased availability and accessibility of gambling options.

Today, Ontarians have access to a greater variety of gambling opportunities than ever before. From social gaming to Internet gambling and mobile applications to electronic bingo, people of all ages can now gamble almost anywhere in the province. In 2012/13, the OPGRC invested \$1.95 million in eight major studies to better understand how these new types of gambling actually work, and to identify and assess a multitude of factors that influence both current and future gambling behaviour. Last year's funding commitments bring the OPGRC's total investment in large scale, multi-year research initiatives (115) and shorter-term pilot projects (78) to more than \$26 million over the past 13 years.

Research funded by the OPGRC last year focussed on:

- Factors that influence both risk of and resilience to problem gambling, the interplay amongst these factors and the subsequent implications for social responsibility measures, as well as prevention, harm minimization and treatment strategies;
- The relationships between the different sub-types of gamblers, different gambling environments and emerging gambling technologies and methodologies, and the combined effect these variables have on the onset and progression of problem gambling; and
- How to improve and develop best practices in problem gambling prevention, harm minimization and treatment to enhance population health, particularly among vulnerable populations.

This new knowledge will help inform the development of policies and gaming regulations to minimize harm as well as advance new prevention and treatment practices.

Approximately 80% of Ontario adults, or about 8 million people, engaged in some form of gambling in the past year.

2012/13 Standard Research Awards

With the proliferation of gaming machines as well as web-enabled and mobile-based gambling, 2012/13 funded research projects focussed on generating new knowledge about the impact of gambling on youth and new gamblers. A study on the structural characteristics of slot machines, for example, and how different sub-types of new and experienced gamblers respond to them will help inform the development of new therapeutic interventions that address the reasons why people gamble. A closer look at the impact of social network gaming on young adults and its effects on their future online gambling behaviour will help inform policy and gambling industry regulations.

Another funded study is testing the effectiveness of an intervention targeted at high-risk youth to help prevent them

from becoming problem gamblers. As well, a strategy to prevent problem gambling among Aboriginal youth in Ontario is being explored.

Another key area of research examines how electronic bingo actually works and the possible risks associated with this new form of gambling. And, as a member of the Canadian Consortium for Gambling Research, we jointly funded a project to develop and validate a gambling participation instrument for use in general population surveys that will enable problem gambling research organizations to compare and contrast future survey results.

The results of these and other OPGRC-funded studies will help inform decision making by policy makers, regulators, gaming operators and service providers.

| Investigators | Title | Sponsoring Organization(s) | Amount Awarded |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------|
| Jonathan Fugelsang, Mike Dixon, Kevin Harrigan, Karen Collins | Exploring the Relationship between Erroneous Cognitions and the Structural Characteristics of Slot Machines | University of Waterloo | \$237,591 |
| Rina Gupta, Michael Wohl, Jeffrey L. Derevensky | Play-for-Fun to Play-for-Pay: Identifying Factors that Transition Young Adults from Social Network Gaming to Online Gambling | Carleton University McGill University | \$231,726 |
| Tara Elton-Marshall, Scott T. Leatherdale, Nigel Turner, Steve Manske | Targeting an Intervention to Prevent Problem Gambling among High-risk Adolescents | University of Waterloo Centre for Addiction and Mental Health | \$235,988 |
| Kevin Harrigan | An Investigation of the Structural Characteristics of Electronic POD Games in Ontario Bingo Halls | University of Waterloo | \$319,080 |
| John Cunningham, David Hodgins | A Prospective Natural History of Quitting or Reducing Gambling with or without Treatment | Centre for Addiction and Mental Health University of Calgary | \$315,682 |
| Sasha Stark, Lorne Tepperman, Patrizia Albanese, Nadine Zahlan, Andrea L.K. Johnston, Marcia Barron, Mori Meckelborg, Luc Laina, Nancy Sagmeister | Responsible Gambling Action Strategy: The Voice of Aboriginal Youth | University of Toronto Ryerson University Johnson Research Inc. | \$359,739 |
| Flora I. Matheson, Wayne Skinner, Peter Ferentzy, Stephen Hwang, Aklilu Wendaferew | Problem Gambling and Housing Instability | St. Michael's Hospital Centre for Addiction and Mental Health | \$101,346 |
| Robert Williams, Rachel Volberg | Development and Validation of a Gambling Participation Instrument | Williams and Associates Gemini Research | \$150,000 |

Consolidating theoretical understanding to inform gambling policy, regulation and treatment

One of the most important aspects of problem gambling research is developing testable theories that enhance theoretical understanding of the causes and factors that influence the emergence of and resilience to problem gambling. The results of theoretical research often inspire and inform applied problem gambling research studies and projects that ultimately contribute to policy development, effective gaming regulations, and prevention and treatment best practices.

Accelerating this type of research requires extensive consultation with leading problem gambling experts and nurturing partnerships with provincial, national and international organizations that share our interest in advancing knowledge of problem gambling and its impact on individuals and society.

In 2012/13, the OPGRC invested significant time and energy working with leading experts from around the world to develop a Conceptual Framework of Harmful Gambling to help key stakeholders better understand the possible causes and consequences of harmful gambling. This framework was then used to formulate a new Problem Gambling Research Framework to guide future research and to inform policy development and decision making related to gambling and gaming in Ontario.

OPGRC research shows that 1.2% of Ontario adults —that's almost 100,000 people—are diagnosable as problem gamblers.

Highly sought after for our knowledge and expertise in the field of problem gambling, the OPGRC was invited to participate in a number of forums and special projects last year.

■ Our organization was invited to join the Alcohol and Gaming Commission of Ontario's Problem Gambling Round Table in recognition of the research evidence and tangible advice we were able to provide to support the rollout of the province's new Responsible Gambling Standards.

■ We addressed the Senate Committee on Bill C290 regarding single-event sports betting, stressing the importance of aligning sports betting with responsible gambling regulation.

■ We presented the Conceptual Framework of Harmful Gambling to Canada's top gambling researchers at the Alberta Gambling Research Institute's (AGRI) conference in Banff, to Ontario community-based problem gambling counsellors attending the Problem Gambling Institute of Ontario (PGIO) conference, and to 60 of the world's top gambling researchers at the International Think Tank on Gambling Research, Policy and Practice in Auckland, New Zealand.

■ We co-sponsored a workshop on gambling and problem gambling research with indigenous populations that was held in conjunction with the Alberta Gambling Research Institute's 11th Annual Conference. The OPGRC moderated the expansive discussion—which ranged from the current state of research to future research priorities—and summarized workshop proceedings to help researchers and members of the Canadian Consortium on Gaming Research (CCGR) better understand the needs of Canada's indigenous people so they can address these needs in future research.

Conceptual Framework of Harmful Gambling

Applying a common language to enhance understanding of problem gambling

A key pillar of the OPGRC's Strategic Plan, the Conceptual Framework of Harmful Gambling is a comprehensive framework that moves beyond a symptoms-based view of gambling harm to generate a common international language for addressing a broad set of factors that influence gambling and the harmful effects it can have on individuals, their families and the community (as shown on page 13).

Harmful gambling encompasses differing degrees of severity and frequency that can include significant financial problems, addiction, and physical and mental health issues. Beyond the individual who engages in repetitive gambling, its consequences can also affect the gambler's family, social network and community.

Conceived by a team of international and interdisciplinary experts engaged by the OPGRC, the Conceptual Framework of Harmful Gambling is the first of its kind to contribute to furthering understanding and awareness of harmful gambling among researchers, treatment providers, gambling operators, policy makers, and individuals and their families on a global scale. Fueled by more than a decade of international problem gambling research, it provides a platform for stakeholders to exchange knowledge about the possible causes and consequences of harmful gambling and the resources required to minimize gambling harm.

Presented at provincial and international forums in 2012/13, the Framework was designed to:

- Reflect the current state of knowledge about the many factors influencing harmful gambling and illustrate the interactions amongst these factors;
- Assist researchers, service providers, policy makers, regulators and the public to better understand the complex dynamics involved in harmful gambling and inform decision making;
- Identify gaps in gambling-related knowledge to help guide the development of strategic research programs.

The Framework addresses a range of factors, including the specific (gambling environment, exposure, types, and resources) and the general (cultural, social, psychological, and biological), and highlights areas where existing research is robust, and where more research is needed. The general factors represent major areas of scientific inquiry while the specific factors represent major themes in gambling studies.

It is hoped that the Framework will inspire new theory-driven research and help inform public policy on gambling as well as the development of clinical goals for prevention and treatment of harmful gambling.

The Conceptual Framework of Harmful Gambling was published in March 2013 and is available on the OPGRC's website. To ensure the Framework remains relevant, the OPGRC will be updating it on a regular basis to reflect the most recent knowledge available on gambling harm.

Conceptual Framework of Harmful Gambling An international collaboration

Background

While seen by many as a form of leisure and recreation, gambling can have serious harmful effects for individuals, their families and society as a whole. Various models have been developed to understand individual differences in gambling engagement and the life-course of gambling-related problems, but no model has been able to provide a comprehensive view of gambling-related harm.

Purpose

To develop a comprehensive, internationally relevant conceptual framework of harmful gambling that addresses factors related to population risk, community and societal effects.

Goals

1. Reflect the state of knowledge about the factors influencing harmful gambling and the relationships among the factors.
2. Identify areas where research is needed and guide the development of future strategic research.
3. Educate researchers, treatment providers, policy makers and the public about the complexity of harmful gambling and improve decision making.

Harmful Gambling
Any type of repetitive gambling that an individual engages in that leads to (or aggravates) recurring negative consequences such as significant financial problems, addiction, as well as physical and mental health issues. The degree of harm can range from inconsequential and transient to significant and chronic.

Gambling-specific factors

Gambling-specific factors represent major areas of scientific study and are relevant across all general factors.

Gambling Environment

The environment in which an individual lives.

Gambling Exposure

No gambling would occur without opportunity.

Gambling Types

Outlets for gaming or types of activities.

Gambling Resources

Internal or external sources influencing harm reduction.

Examples

| Gambling Types |
|---------------------------|
| Event Frequency & Arousal |

Some games, like slot machines, have a high frequency of play and reinforcement; others, like lottery tickets, do not.

| Psychological |
|----------------------|
| Coping Styles |
| Lifespan Development |

Older adults tend to play slot machines to alleviate boredom or escape negative emotions.

| Biological |
|------------|
| Sex |

Some research suggests women are more likely to play slot machines than men.

General factors

General factors are directly or indirectly related to the life-course of harmful gambling and may or may not interact with one another.

Cultural

Systems of thought and morality, norms, customs, myths, rituals.

Social

Interactions among individuals and their collective co-existence.

Psychological

Broad individual differences and psychological issues.

Biological

Genetically inherited and/or biological propensities.

Factors influencing harmful gambling

| Gambling-specific Factors | | | |
|----------------------------------|-------------------|---------------------------|--------------------------------|
| Gambling Environment | Gambling Exposure | Gambling Types | Gambling Resources |
| Macro Economics | Accessibility | Event Frequency & Arousal | Prevention |
| Micro Economics | Context | Skill & Perceived Skill | Harm Reduction |
| Social-political Environment | Gambling Setting | Sociability | Mutual Help |
| Corporate Environment | Adaptation | | Treatment |
| Culture of Social Responsibility | | | Self Help |
| Availability of Leisure Options | | | Perceptions of Problem Solving |
| Public Policy | | | |

| General Factors | | | |
|---------------------------------|---------------------------|-----------------------------|---------------------|
| Cultural | Social | Psychological | Biological |
| Ethnicity and Traditions | Social Demographics | Personality & Temperament | Genetic Inheritance |
| Socio-cultural Values | Education System | Lifespan Development | Neurobiology |
| Gambling Sub-cultures | Family & Peer Involvement | Judgement & Decision Making | Sex |
| Religion & Other Belief Systems | Neighbourhood | Co-morbid Disorders | |
| Representation & Symbolism | Stigmatization | Coping Styles | |
| Gender | Deviance | Subjective Well-being | |
| | | Self Perceptions | |
| | | Social Learning | |

Translating research into **accessible evidence and knowledge** to address problem gambling

The OPGRC has a significant role to play in ensuring that the findings generated through OPGRC-funded research and other national and international problem gambling studies are translated into knowledge that can be leveraged by other researchers, policy makers, gaming operators, regulators and consumers.

All too often the latest research findings don't reach those who can turn that knowledge into policies, regulations, and prevention and treatment practices to minimize harm.

That is why, over the past 13 years, the OPGRC has allocated \$9.2 million to fund 58 directed research projects to address policy-related questions and another 18 knowledge development awards aimed at translating the latest research findings into accessible, user-friendly knowledge products for a variety of stakeholders.

Given our considerable understanding of the problem gambling research community, and our commitment to minimizing the consequences of problem gambling on the lives of Ontarians, we continued to strengthen our focus on knowledge translation and exchange over the past year.

Our efforts ensure that the government and other key stakeholders can readily access high quality, valid research that addresses critical system questions about problem gambling, resilience, prevention, harm minimization and prevention and treatment strategies.

As new evidence in the field of problem gambling emerges, we synthesize that work into layman's language and make it easily accessible through our website. Last year, 230 gambling research articles were summarized and posted to the OPGRC's website through our Synopsis Project.

Proximity to land-based gaming opportunities (such as casinos) has a significant influence on the rate of problem gambling.

2012/13 Directed Research and Take-it-to-the-Finish Knowledge Translation Awards

The OPGRC's investments in 2012/13 to advance our strategic focus on accessible evidence and knowledge contributed to enhancing problem gambling assessment, prevention and treatment practices, addressing population-specific health impacts of problem gambling, and assessing the impact of modernizing gaming. Work in this area is expected to inform the development of effective problem gambling prevention

and outreach initiatives that address barriers in reaching ethno-cultural communities; help identify senior gamblers that may be at particularly high risk for problem gambling with the increased number of Ontario casinos; assist in better understanding the impact that new casinos have on the gambling behaviour of adult Ontarians aged 18 years+; and test the effectiveness of web-based interventions geared to the needs of women gamblers.

| Investigators | Title | Sponsoring Organization(s) | Amount Awarded |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------|
| Nigel Turner, Peter Ferentzy, Vince Pietropaolo | Prevention/Practice Ethno-cultural Literature Review | Centre for Addiction and Mental Health, COSTI | \$25,000 |
| Michael Wohl, Avi Parush | Facilitating Responsible Gambling through Persuasive Technology: Using Human-Computer Interaction Principles to Better Monetary Limit Tools | Carleton University | \$42,000 |
| Kevin Harrigan | The Modernization of Bingo in Ontario | University of Waterloo | \$30,000 |
| John McCreedy, Robert Mann, Nigel Turner, Hayley Hamilton | Seniors' Gambling in Ontario: An Assessment of Gambling and Problem Gambling among Older Adults who Patronize Ontario Casinos | Healthy Horizons Consulting, Centre for Addiction and Mental Health | \$240,000 |
| Cynthia Lucar, Jamie Wiebe, Kahlil Philander | Baseline Study: Assessing the Impact of the Introduction of new Casinos in Ontario | Responsible Gambling Council | \$298,079 |
| Bernard le Foll, Patricia DiCiano | Evaluating the Effects of Disulfiram on the Rodent Gambling Task | Centre for Addiction and Mental Health | \$42,000 |
| Kevin Harrigan, Sidney Segalowitz | The Role of Prefrontal Regulatory Control in Response and Choice Impulsivity in Gamblers: A Behavioural and Electrophysiological Study | Brock University | \$42,000 |
| Martin Zack, Isabelle Boileau, Antonio Strafella | Pilot Study of the Effects of Magnetic Brain Stimulation on Gambling Reinforcement, Self-Regulation and Gambling Symptoms in Male Pathological Gamblers | Centre for Addiction and Mental Health | \$41,994 |
| Lena C. Quilty, Daniela S.S. Lobo, Martin Zack, Alex Blaszczynski, Courtney Crewe-Brown | The Influence of Prize Levels on Gambling Behaviour in a Community Sample | Centre for Addiction and Mental Health, University of Sydney | \$39,857 |
| Nigel Turner, Roberta Boughton, Caroline O'Grady | Meeting the Unique Treatment Needs of Women Gamblers: A Workbook and Webinar Effectiveness Pilot Study | Centre for Addiction and Mental Health | \$42,000 |
| Randy Stinchfield, John McCreedy | Cross-Validation and Comparison of Eight Brief Problem Gambling Screens | Healthy Horizons Consulting, University of Minnesota Medical School | \$42,000 |

Establishing a long-term future for problem gambling research by **building research capacity and productivity**

From its inception, the OPGRC has worked with a strong sense of purpose to build Ontario's research capacity in the area of problem gambling with investments totalling more than \$3 million.

Although little was happening in Ontario in this field in 2000 when there were just 13 funded researchers, the OPGRC has been successful in establishing a strong foundation for problem gambling research by sparking interest in the field among burgeoning Ontario researchers whose numbers have increased to 39, and strengthening the ability of researchers to pursue problem gambling research at the master's, doctoral and post-doctoral levels.

In our efforts to build research capacity, we have formed highly effective provincial, inter-provincial and international partnerships for the purposes of collaborating and exchanging knowledge across governments, the gambling industry, the research community and treatment providers and organizations.

One of the most compelling examples of building research capacity is embodied in our Capacity Development program, which successfully funded three new problem gambling research teams in 2012/13. Today, there are seven university-affiliated research teams—whose members have been supported over the years, in part, by 26 individual capacity building awards totalling more than \$1.2 million from the OPGRC—engaged in long-term problem gambling research. We continue to build in this area through the awarding of investigator support grants, research seed grants, student research grants, and national and international engagement grants.

This solid base for problem gambling research ensures the ongoing development of new evidence, knowledge, understanding and best practice that will play a vital role in informing future policy development, gaming regulations, and prevention and treatment practices.

2012/13 Capacity Development Grants

Among the research projects funded in 2012/13 were studies that focussed on identifying the influence of problem gambling messaging on attitudes and beliefs; clarifying the association between social and physical environments and risk behaviours to improve population-level gambling prevention programming; assessing the impact of gambling on marginalized groups; and examining the role of advertising on gambling behaviours.

Capacity development grants applied at the national and international levels were awarded to support the infrastructure needed to advance research in the area of social media and its relationship to online gambling, help translate research findings into responsible gambling promotion targeted to young adults, and enable international consultation on a research project that focusses on online gambling among women.

| Investigators | Title | Sponsoring Organization(s) | Amount Awarded |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------|
| Paul Mallet | Endocannabinoid Modulation of Risky Decision Making and Impulsivity | Wilfred Laurier University | \$10,000 |
| Nigel Turner | Investigator Support Grant | Centre for Addiction and Mental Health | \$25,000 |
| Leandre R. Fabrigan | Techniques for Creating and Enduring Consequential Gambling Attitudes | Queen's University | \$10,000 |
| Tara-Elton Marshall, Scott T. Leatherdale | Investigator Support Grant | University of Waterloo | \$50,000 |
| Justin McManus | The Effect of Gambling Advertisements on Memory, Perceptions of Luck, and Gambling Behaviour | University of Guelph | \$5,000 |
| Tara Hahmann | A Critical Realist Approach to the Study of Gambling Beliefs and Behaviours | University of Toronto | \$5,000 |
| Rina Gupta, Jeffrey Derevensky, Michael Wohl | Infrastructure Needs for CMC National Team | Carleton University McGill University | \$10,000 |
| Lorne Tepperman, Patrizia Albanese, Gerda Reith, Sasha Stark, Nadine Zahlan | National and International Engagement Grant | University of Toronto Ryerson University University of Glasgow | \$17,000 |
| Jeffrey Derevensky, Rina Gupta, Michael Wohl | National and International Engagement Grant | Carleton University McGill University | \$20,000 |
| Rina Gupta, Jeffrey Derevensky, Michael Wohl | Investigator Support Grant | Carleton University | \$25,000 |
| Jennifer Reynolds | Youth Poker and Facebook: Making Sense of Taking Chance | University of Toronto | \$5,000 |
| Scott T. Leatherdale, Tara Elton-Marshall | Investigator Support Grant | University of Waterloo | \$25,000 |
| Kevin Harrigan, Jonathan Fugelsang, Mike Dixon, Karen Collins, Dan Brown | Investigator Support Grant | University of Waterloo | \$75,000 |
| Syb Pongracic | Hedging and the Obsessive-Compulsive Spectrum in Pathological Gambling | Ryerson University | \$40,000 |
| Justin McManus | The Effect of Gambling and Advertisements on Gambling Behaviour | University of Guelph | \$35,000 |
| Lily Aleksandrova | Pharmacological and Neurosurgical Modulation of Gambling Behaviour in Intact and Parkinsonian Rats | University of Toronto | \$35,000 |
| Eric Theriault | Assessing the Relevance of Culture in Gambling and Problem Gambling in Francophone/Metis Communities in Northern Ontario | Wilfred Laurier University | \$20,000 |
| Candice Jensen | Student Research Grant | University of Waterloo | \$5,000 |
| Thomas Sherratt, Kevin Abbott | Modelling Optimal Causal Learning Strategies: Their Relationships to Superstitions and Problem Gambling Behaviour | Carleton University | \$48,000 |
| Candice Jensen | Losses Disguised as Wins in Multiline Slot Machine Games | University of Waterloo | \$4,952 |

Gamblers who spend 2% or more of their income on gambling are 30 times more likely to experience moderate to severe gambling problems.

Independent Auditor's Report

To the Members of Ontario Problem Gambling Research Centre

We have audited the accompanying financial statements of Ontario Problem Gambling Research Centre which comprise the balance sheets, as at March 31, 2013, March 31, 2012 and April 1, 2011 and the statements of operations, changes in fund balances and cash flows for the years ended March 31, 2013 and March 31, 2012 and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Ontario Problem Gambling Research Centre as at March 31, 2013, March 31, 2012 and April 1, 2011 and the results of its operations and its cash flows for the years ended March 31, 2013 and March 31, 2012 in accordance with Canadian accounting standards for not-for-profit organizations.

BDO Canada LLP



Chartered Accountants, Licensed Public Accountants

Waterloo, Ontario
July 5, 2013

Ontario Problem Gambling Research Centre Balance Sheet

| For the year ended | March 31 2013 | March 31 2012 |
|---------------------------------------------------|-------------------|------------------|
| | Total | Total |
| Assets | | |
| Current | | |
| Cash and bank (Note 3) | \$ 401,046 | \$ 830,869 |
| Accounts receivable (Note 4) | 116,716 | 149,954 |
| Prepaid expenses | 10,619 | 11,775 |
| | 528,381 | 992,598 |
| Property, plant and equipment (Note 5) | 63,001 | 81,692 |
| | \$ 591,382 | \$ 1,074,290 |
| Liabilities and Fund Balances | | |
| Current | | |
| Accounts payable and accrued liabilities (Note 6) | \$ 322,335 | \$ 853,909 |
| Fund balances | | |
| Unrestricted | 206,046 | 138,689 |
| Internally restricted | 63,001 | 81,692 |
| | 269,047 | 220,381 |
| | \$ 591,382 | \$ 1,074,290 |

*This financial information is summarized from the audited financial statements.
Full copies of OPGRC's financial statements are available upon request.*

Ontario Problem Gambling Research Centre Statement of Operations

| For the year ended | March 31 2013 | March 31 2012 |
|---------------------------------------------------------------------------|---------------------|------------------|
| | General Fund | General Fund |
| | Total | Total |
| Revenue | | |
| Ministry of Health and Long-Term Care | \$ 4,000,000 | \$ 4,000,000 |
| Partnerships | - | - |
| Interest | 10 | 32 |
| | 4,000,010 | 4,000,032 |
| Grant disbursements | 2,825,582 | 2,857,547 |
| Net revenue | 1,174,428 | 1,242,485 |
| Expenditures | | |
| General and administrative | 152,614 | 147,291 |
| Meetings | 63,169 | 48,800 |
| Professional fees | 110,689 | 99,906 |
| Professional development | 50,411 | 106,381 |
| Rent | 51,323 | 50,916 |
| Salaries and benefits | 693,676 | 600,576 |
| Travel | 5,140 | 4,525 |
| | 1,118,022 | 1,058,095 |
| Excess (deficiency) of revenue over expenditures before other item | 56,406 | 84,390 |
| Other item | | |
| Amortization | 29,022 | 31,734 |
| Excess (deficiency) of revenue over expenditures for the year | \$ 27,384 | \$ 52,656 |
| Transfer to other Funds | - | (52,731) |
| Transfer from other Funds to General Fund | 155,504 | - |
| Fund Balance Beginning of Year | (9,453) | (9,378) |
| Fund Balance End of Year | \$ 173,435 | \$ (9,453) |

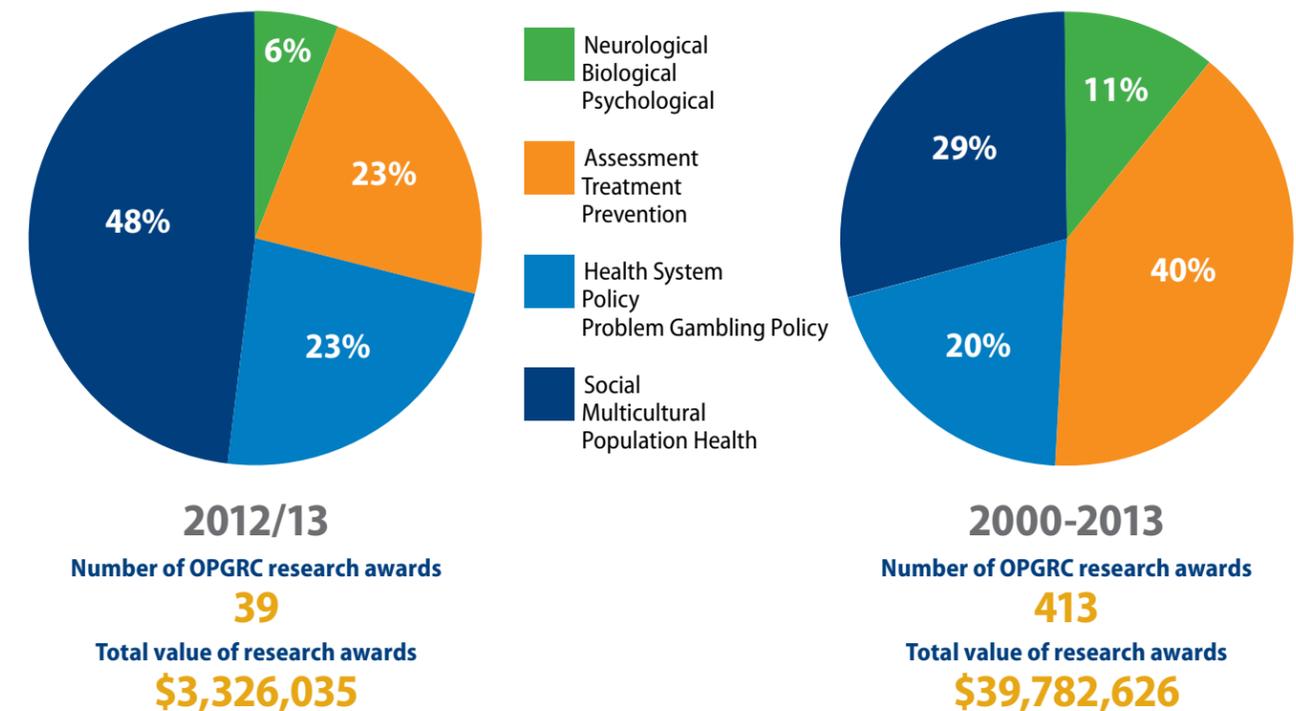
This financial information is summarized from the audited financial statements.
Full copies of OPGRC's financial statements are available upon request.

Ontario Problem Gambling Research Centre Schedule of Grant Disbursements

| For the year ended | March 31 2013 | March 31 2012 |
|--------------------------------------------|---------------------|------------------|
| Level I | \$ 15,300 | \$ 40,000 |
| Level II | 255,195 | 237,510 |
| Level III | 850,988 | 609,365 |
| Level IV | 291,513 | 417,752 |
| Grant review | 54,806 | 51,432 |
| Conceptual framework | 35,222 | - |
| Knowledge transfer | 39,115 | 26,976 |
| Directed research | 1,003,310 | 840,371 |
| Studentships | 125,243 | 139,070 |
| Emerging team awards | - | 150,124 |
| Post Doctoral Fellowship | - | 42,000 |
| Research framework | 21,099 | - |
| Graduate Student School | 25,000 | 12,985 |
| Investigator Support Grants | 175,000 | 75,000 |
| National/International Collaborator Grants | 48,200 | 115,000 |
| Take it to the Finish Awards | - | 75,600 |
| Research Excellence Program | 2,591 | 24,380 |
| Total grant disbursements | \$ 2,942,582 | \$ 2,857,565 |

These grant disbursements differ from the Statement of Operations because of a \$117,000 Canadian Consortium for Gambling Research grant payment in 2013 and an \$18 Alcohol and Gaming Commission of Ontario project payment in 2012.

2012/13 and 2000-2013 Cumulative Research Awards



Peer reviewers 2012/13

The OPGRC is recognized in Ontario, Canada and internationally for its leadership as an objective, independent problem gambling research centre. Our leadership has been instrumental in guiding major research initiatives and supporting evidence-informed decision making in both policy and practice.

Pivotal to our work is a rigorous peer review process. Our approach to peer review ensures that all applications for research funding are given due consideration based on the insights and expertise of an independent and highly regarded team of national and international experts in the field of problem gambling.

All research proposals received by the OPGRC are independently reviewed by members of our peer review team. This arms-length review is critical to the integrity of the research and reputation of the OPGRC. We extend our sincere thanks to the following peer reviewers who ensure that OPGRC research dollars are invested wisely in projects that advance the vision, mission and mandate of the OPGRC.

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Laboratory for Affect, Risk and
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University of Lethbridge
Lethbridge, Canada

OPGRC-funded research published this year

in journals

Bergen, A.E., Newby-Clark, I.R., Brown, A. (2012)
Low trait self-control in problem gamblers:
Evidence from self-report and behavioral measures
Journal of Gambling Studies, 28, 637-648

Bergen, A.E., Newby-Clark, I.R., Brown, A. (2012)
Gambling increases self-control strength in problem gamblers.
Journal of Gambling Studies, DOI 10.1007/s10899-012-9350-9

Currie, S., Hodgins, D.C., Casey, D.M., el-Guebaly, N., Smith, G.J., Williams, R.J., Schopflocher, D.P., Wood, R.T. (2012)
Examining the predictive validity of low-risk gambling limits with longitudinal data
Addiction, 107, 400-406

Dixon, M.J., Harrigan, K.A., Santesso, D.L., Graydon, C., Fugelsang, J.A., & Collins, K. (accepted for publication)
The impact of sound in modern multiline video slot machine play
Journal of Gambling Studies

Dixon, M., Fugelsang, J., MacLaren, V., & Harrigan, K. (2013)
Gamblers can discriminate 'tight' from 'loose' electronic gambling machines
International Gambling Studies
DOI 10.1080/14459795.2012.712151

Dixon, M.J., MacLaren, V.V., Jarick, M., Fugelsang, J.A., Harrigan, K.A. (2012)
The frustrating effects of just missing the jackpot: Slot machine near-misses trigger large skin conductance responses, but no post reinforcement pauses
Journal of Gambling Studies, DOI 10.1007/s10899-012-9333-x

Guttenberg, D., Harrigan, K.A., & Smith, S. (2012)
Gambling by Ontario casino employees: gambling behaviours, problem gambling and impacts of the employment
International Gambling Studies, 12, 5-22

Jensen, C., Dixon, M.J., Harrigan, K.A., Sheepy, E., Fugelsang, J., & Jarick, M. (2012)
Misinterpreting 'winning' in multiline slot machine games
International Gambling Studies
DOI:10.1080/14459795.2012.717635

Ledgerwood, D.M., Orr, E.S., Kaploun, K.A., Milosevic, A., Frisch, G.R., Rupcich, N., & Lundahl, L.H. (2012)
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MacLaren, V., Harrigan, K., & Dixon, M. (2012)
Gambling motives and symptoms of problem gambling in frequent slots players
Journal of Gambling Issues, 27

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Effects of gambling-related cues on the activation of implicit and explicit gambling outcome expectancies in regular gamblers
Journal of Gambling Studies. DOI 10.1007/s10899-013-9383-8

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Pop-up messages, dissociation, and craving: How monetary limit reminders facilitate adherence in a session of slot machine gambling
Psychology of Addictive Behaviors, DOI 10.1037/a0029882

Turner, N.E., Preston, D.L., McAvoy, S., Gillam, L. (2013)
Problem gambling inside and out: The assessment of community and institutional problem gambling in the Canadian correctional system
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Wohl, M.J.A, Gainsbury, S., Stewart, M.J., & Sztainert, T. (2012)
Facilitating responsible gambling: The relative effectiveness of education-based animation and monetary limit setting pop-up messages among electronic gaming machine players
Journal of Gambling Studies, DOI 10.1007/s10899-012-9340-y

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International Journal of Mental Health and Addiction
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Abbott, Max, Binde, Per, Hodgins, David, Korn, David, Pereira, Alexius, Volberg, Rachel, Williams, Robert (2013)
Conceptual Framework of Harmful Gambling:
An international collaboration sponsored by the OPGRC
www.opgrc.org/conceptualframework/interactive-framework

Collins, K., Harrigan, K., Dixon, M., & Fugelsang, J. (2013)
The impact of sound on psychophysical response to slot machine play

Derevensky, J., Wohl, M.J.A., & Gupta, R. (2012)
A qualitative examination of online gambling culture among college students: Factors influencing participation, maintenance and cessation

Dixon, M., Harrigan, K., Fugelsang, J., & Collins, K. (2013)
An investigation of reinforcement schedules and near misses in modern multiline video slot machines

Harrigan, K. (2013)
The modernization of bingo in Ontario

Marmurek, H. (2013)
Predictors of problem gambling severity: Personality, beliefs and motivation

Marmurek, H., & Finlay, K. (2012)
A test of the transferability of findings of casino design effects from the lab to the casino floor

Nussbaum, D. (2013)
Cultural differences in lay theories of change and problem gambling

Perلمان, C., Nogueira, M., & Smith, S. (2012)
A comprehensive review of problem gambling self-assessment tools for use on an Internet platform

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Reliability, validity and classification accuracy of the proposed DSM-V diagnostic criteria for pathological gambling

Stinchfield R., McCready, J., & Turner, N.E. (2012)
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Strafella, A., Miyasaki, J.M., Lang, A., Zurowski, M. (2012) Do neurochemical abnormalities in the prefrontal cortex contribute to pathological gambling in Parkinson's disease?

Turner, N.E., & Ferentzy, P. (2013)
Prevention/practice ethno-cultural literature review: What can we learn about the prevention of problem gambling for ethnic populations from programs from other related fields of study?

Turner, N.E., & Ferentzy, P. (2012)
Review of problem gambling and comorbid disorders and behaviours

Turner, N.E., Matheson, F., Ferentzy, P. McAvoy, S., Littman-Sharpe, N., Malat, J., & Myers, C. (2013)
A qualitative study of programs for problem gambling in the correctional population using interviews with key informants

Wohl, M.J.A., Harrigan, K., & Santesso, D.L. (2012)
Reducing erroneous cognitions and facilitating adherence to monetary limits among slot machine gambling: The creation and assessment of a short educational animation

Zack, M., Boileau, I., Kish, S., Warsh, J., & Houle, S. (2012)
A Positron Emission Tomography (PET) study of brain dopamine function in pathological gamblers



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