Proceedings of the 3rd Annual Symposium

BEYOND THE ODDS: The Assessment, Diagnosis and Treatment of Pathological Gambling

Edited by:

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The 3rd Prairielands ATTC Annual Symposium On Addiction

Proceedings Of The 3rd Annual Symposium

Beyond the Odds: The Assessment, Diagnosis and Treatment of Pathological Gambling

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Anne Helene Skinstad, Ph.D
Director, Prairielands Addiction Technology Transfer Center
Introduction – 1a

Anne Helene Skinstad, Ph.D Director, Prairielands Addiction Technology Transfer Center

As the Director of the Prairielands Addiction Technology Transfer Center, serving Iowa, Nebraska, North and South Dakota and Minnesota, it is my pleasure to welcome you to the Third Annual Prairielands ATTC Symposium on Addiction, this year titled Beyond the Odds: The Assessment, Diagnosis and Treatment of Pathological Gambling. We have very exciting presentations ahead of us today and I look forward to hearing them all.

Problem and pathological gambling are both defined as impulse control disorders according to the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV-TR; APA, 2000). Gambling disorders often co-occur with other mental health disorders, especially depression, anxiety disorders and suicidal ideation, when losses start affecting personal and family finances. Among the mental health disorders most often co-occurring with gambling disorders are a diverse array of substance use disorders, including the abuse of and dependence upon alcohol, tobacco products, stimulants, etc. However, up until now, problem gambling has been the forgotten disorder in substance abuse and mental health treatment and prevention, in part as a result of the funding stream for treatment, which is different than for mental health and substance abuse.

Some states in the US have been visionary in their efforts to assist people with gambling disorders, other have not yet decided this is a disorder to which they want to direct their treatment dollars. The State of Iowa started immediately after river boat gambling was legalized to invest money in prevention and treatment programs, so on behalf of our problem gamblers, we are grateful for this vision. Accordingly, it is important that we focus our attention on key issues surrounding problem gambling and co-occurring substance use and mental health disorders. The presenters today bring to you a wealth of knowledge and information on prevalence of gambling disorders, gender differences in problem gambling, gambling by adolescents, and treatment, both psycho-social and medical, for problem gamblers.

First, though, we will hear from Professor John Lowe, Head of the Department of Community and Behavioral Health at the University of Iowa College of Public Health. Professor Lowe will welcome to you on behalf of the University of Iowa College of Public Health, Department of Community and Behavioral Health. Following his welcome will be remarks by Professor Peter E. Nathan, Departments of Psychology and Department of Community and Behavioral Health, University of Iowa, who will make some remarks on the importance of this symposium. Professor Robert Ladoucetre, Laval University, Quebec, Canada, will then discuss Empirical Evidence of Cognitive-Behavioral Treatment for Gambling Disorders. Following that presentation, Associate Professor Rani A. Desai, Ph.D., M.P.H., Yale University, will present on Gender Differences in Gambling and Gambling-related Problems. Professor Donald Black, Department of Psychiatry, University of Iowa, will follow with a review of Medical Treatment of Problem Gambling. To conclude the day, Professor Ken Winters, University of Minnesota, will present on Youth, Gambling and the Developing Brain: Intersections on the Developmental Highway.

It is going to be an exciting day. We welcome questions and discussion from the audience.
Welcome to the 3rd Prairielands ATTC Symposium: Beyond the Odds: The Assessment, Diagnosis, and Treatment of Pathological Gambling.

Dr. Lowe welcomed the participants to the 3rd Prairielands ATTC Symposium: Beyond the Odds: The Assessment, Diagnosis, and treatment of pathological gambling, by emphasizing that problem gambling is one of the major public health issues currently facing the U.S. However, the University Of Iowa College Of Public Health does not highlight it as much as it should. “John Snow, in London, was able to discover both cholera and modern epidemiology by the simple expedient of removing a pump-handle; it would be nice if the solution to problem gambling were that simple, such as by removing the handle of a one-armed bandit, perhaps?”

Problem gambling frequently co-occurs with other addictive behaviors, as well as mental health disorders, a finding that will be discussed throughout the day. These complicating factors are often overlooked by many local and state representatives, in their eagerness to secure income through tax revenues and employment in different rural communities. However, with easier access to gambling venues, there will be more people who may not be able to control their gaming behaviors. From a public health perspective, the majority of people engaging in different gaming ventures are able to control their behaviors, but between 1 and 3% are not able to do so, resulting in harm to their families and themselves. Professor Lowe then drew the audience’s attention to the fact that the front page of the Courier-Mail (Queensland, Australia) that very day carried a story about objections to a commission on local casinos considering only economic viability and not local control.

Dr. Lowe emphasized that Public Health is all about local control. Communities determine their own destiny; thereby affecting the quality of life to which a community can subscribe. It is important to strike a balance between offering gaming opportunities in the community and throughout the State in general, and taking care of community members who are not able to control their gaming behaviors. This is an important balance to strike for the welfare of the community in the long run and the individual with the problem gambling issue in particular. Every community welcoming gaming venues into their communities needs to make sure it has prevention and treatment opportunities available for those community members who cannot control their gambling behaviors.

It is an honor and a privilege to welcome today’s speakers. With so many topics to cover and address, I only hope that this will be the first of many symposiums on problem gambling at the College of Public Health.
Gambling Symposium: Beyond the Odds

1. Gambling Symposium: Beyond the Odds. Opening remarks by Peter E. Nathan

I am delighted to be here and look forward to the symposium talks, to be presented by an extraordinary collection of wonderful researchers. Those of you who are psychologists will recognize this phase: “It is often said that psychology has a long past but a short history”. The same summary statement seems very apt for pathological gambling as well. We all know that while gambling has existed for virtually as long as human beings have recorded their own history; there is very little in the way of specific documentation about gambling problems. So we don’t know much about the nature and extent of concerns about gambling, pathological gambling, or problem gambling beyond those recorded in the recent past. We do know that very real concerns about gambling exist today. In this regard, coincidentally, a formal vote will be taken tonight on whether a $107M dollar casino will be built in Riverside, Iowa, which is just south of Iowa City. Many Iowa citizens, especially persons who live close by, are concerned about this casino because of its proximity to the University. That concern is focused on the increased risk university students run of becoming pathological gamblers in view of the likelihood of high rates of binge drinking, impulsivity, and impaired decision-making in this group. The faculty council of the College of Public Health has gone on record opposing the casino. However, it seems likely that the casino will be approved because its projected “economic benefits” outweigh its risk to students. I think it is ironic that this conference should be taking place at this time because so many of the issues that have been debated in connection with the issuance of a license to build this casino will be discussed by our presenters today.

Why are so many more of us concerned about gambling now than 20 and more years ago? I am sure it is because of the extraordinary proliferation of gambling venues over this period. When I was a young psychologist, Las Vegas was just about it, at least legally. Of course, there were the numbers’ rackets in every big city in the United States, but that was illegal. There were also a few small gambling venues on the Gulf Coast, but basically it was Las Vegas. And even Las Vegas at the time was a mere shadow of its present self. Then, in the late70’s, the powers-that-be in New Jersey had the brilliant idea to permit casino gambling in Atlantic City. That came into being and has been a modest success, at least as judged by the numbers of casinos built, amounts of money gambled, and numbers of lives destroyed.

Since then, there has been an explosion of gambling venues nationwide, starting with riverboats. By now, virtually every body of water one could imagine, including a couple of small lakes in Mississippi upon which one could hardly float a canoe, actually host riverboats. Casinos were also built by Native American groups on their own land, which is free from federal regulation. Nowadays casinos can and are built almost everywhere in this country. Few citizens live far from a casino. Internet gambling has become a matter of great concern to professionals in the field, because of the ease in which people, prominently including children and adolescents, can gamble anonymously and dangerously.
This extraordinary growth of legal gambling venues during the past two or three decades, in turn, has created a concomitant marked increase in the number of pathological gamblers and problem gamblers. As a consequence, more and more mental health professionals have worked to identify and diagnose pathological gamblers as well as to provide treatment for them. Some of those people will be presenting today, describing their roles in this effort. For example, we have one of the world’s leading developers of effective, empirically supported treatments for pathological gambling to date here with us today. I think it’s fair to make that statement, in part because Bob Ladouceur wouldn’t do so himself. There will also be those today who will talk about efforts to try to prevent the pathological gambling problem from developing in the first place. That turns out to be especially difficult because the supposed economic benefits of casinos, although rarely achieved, are pretty impressive to small communities, like Riverside, Iowa, which must struggle with an inadequate economic base.

The four scientists we have with us today are among the world’s leading authorities on these matters. Although this conference is taking place in a small town in a small state in the middle of America, I don’t recall an assembly of such an outstanding group before this time. As a result, those of you in the audience will be treated to an array of presentations that will be extremely impressive. Accordingly, I think we owe the Prairieland Addiction Technology Transfer Center a resounding vote of thanks for arranging this exciting program.

Let me talk a little bit about the data on prevalence of gambling, problem gambling, and pathological gambling, for those of you new to the field. I will also talk a bit about assessment, although some of the presenters will also do so.

Between 1975 and 1999, the prevalence of gambling by adults in the United States increased from 68% to 86%. These figures mean that in 1975 two out of three U.S. citizens who were adults gambled either legally or illegally. In 1999, the corresponding prevalence figure was 8.5 out of 10 adults who gambled at least once during the year. Interestingly, gambling prevalence among women during this time grew to resemble male gambling prevalence. Early on, women were much less likely to gamble than men. Now the prevalence figures for men and women are much more comparable. That change mirrors what’s happened in the substance abuse field, especially regarding alcoholism. In the early part of the last century, men with alcohol problems outnumbered women by a ratio of 5 or 6 to 1. At present that ratio is down to 1.5 to 1.

Estimates of the prevalence of pathological gambling have also increased, understandably, between 1975 – 1999. The more places there are to gamble, the more individuals who run the risk of developing gambling problems are at risk. I think it’s fair to say that legal gambling venues have probably increased by a factor of five or more to one.

Among gamblers, the prevalence of those who meet criteria for Level 3, Pathological Gambling is estimated to be 1.1%. These are people with a serious gambling problem that impacts them, their families, their employers, and the quality of their lives. These individuals likely meet the
DSM-IV for pathological gambling. An additional 2.2% of gamblers are estimated to meet criteria for problem gambling; they do not meet criteria for pathological gambling. It seems to be the case that as more gambling venues come online, more gamblers, problem gamblers, and pathological gamblers develop. But the estimated percentage of problem and pathological gamblers do not appear to change. In other words, as more individuals have easy access to more gambling venues, more will become pathological or problem gamblers because the overall number of gamblers has increased.

How do we diagnose pathological gambling? Doing so continues to be a problem. There isn’t yet agreement on a single set of criteria to identify pathological gamblers. The two most widely-accepted ways to identify pathological gambling are the *South Oaks Gambling Screen (SOGS)* and the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* criteria for pathological gambling.

The SOGS is a sixteen-item measure that asks about quantity, frequency, nature, and consequences of gambling. Some of the questions include the following: When you gamble, how often do you go back another day to win the money you lost? Do you feel you ever had a problem with gambling? Have people criticized your gambling? How you ever argued with people you live with over how you handle money? Have you ever lost time from work or school, due to gambling? Those of you who are called upon to identify alcoholics or drug abusers will recognize similarities between some of these questions and those we ask of people who may abuse or be dependent upon alcohol or other drugs.

The other widely-used measure of pathological gambling consists of the operational criteria for diagnosing pathological gambling in DSM-IV. The individual who is to be diagnosed is asked about ten different behaviors; if that person’s behavior coincides with five or more of these criteria, he or she is diagnosed as a pathological gambler. These criteria, not surprisingly, include a number of items that are similar to SOGS items. According to the DSM-IV criteria, the pathological gambler needs to gamble with increasing amounts of money in order to achieve the excitement he or she seeks; there have been repeated unsuccessful efforts to control, cut back, or stop gambling; after losing money the gambler will often return to the gambling venue for another day to get even; and the pathological gambler lies to family members, therapist, or others to conceal his or her pathological involvement with gambling.

At some point, a decision will be made that one or the other of these measures is most predictive of pathological and problem gambling, or that a combination of items from the SOGS and the DSM-IV does the best job of identifying these conditions. But, at the present time, both instruments are widely used, and our speakers today will have employed SOGS or DSM-IV measures of pathological gambling.

A number of important unanswered research questions about pathological gambling persist, largely because research on gambling has really only developed over the last decade to coincide
with the dramatic increase in gambling venues and prevalence of pathological and problem gambling. Unlike the substance use disorders, which can point to a history of more than 40 years of federal support for research on alcohol and drug abuse and dependence, the National Institutes of Health hasn’t supported gambling research to any great extent during those years. As a direct result, many questions remain unanswered.

Not surprisingly, all of the four speakers today will be addressing some of the most important unanswered questions about pathological gambling. Bob Ladouceur’s presentation confronts unanswered questions about the roots of pathological gambling, its etiology or causes, as well as questions about the efficacy of treatments for pathological gambling, most of which are largely derived from models originally developed for the treatment of alcoholism and other substance use disorders. Not surprising, gambling and substance use disorders share many features, but differ in important ways as well. A consequent problem is that pathological gambling assessments and treatments have been largely modeled after assessments and treatments for substance abuse. Our speakers today ask how appropriate and helpful this approach has been.

Bob Ladoucer’s solution to this situation has been to develop a view of etiology of pathological gambling and its treatment that focuses on behaviors that are unique to pathological gambling rather on behaviors common to substance abuse and dependence. So today he will, I believe, describe his research on models in conjunction with his presentation of data on an extremely promising approach to treatment he has developed. I think it’s important to note that he is the very first clinical researcher to conduct a randomized clinic trial, the gold standard for establishing that a treatment is empirically supported.

Rani Desai, Ph.D., is a public health person as well as a health services researcher. The central problem her research confronts is that, historically, gambling is been seen largely as a problem among men, just as alcoholism and drug dependence, for their much longer histories, have been considered men’s problems. As a consequence, as Dr. Desai will observe, it took many decades before research on the substance use disorders in women was initiated. And until much more recently, that has been the case with pathological gambling in women.

On the nature of pathological gambling, on its extent, on its unique features and possible treatments, few distinctions historically have been drawn on these matters between men and women with gambling problems. In recent decades these distinctions have been explored for men and women with substance use disorders.

It is my understanding is Dr. Desai will speak to some of these issues in her talk. She is one of the first researchers to study pathologically gambling in women and in older adults, and her findings will, I believe, enable the design of assessments and treatments tailored to the particular problems women who gamble experience.

Don Black is one of this university’s leading researchers on how addictive disorders, including pathological gambling, can be treated medically as well as behaviorally. For most of the history
of treatment of alcoholism, the focus has been the AA or Twelve-Step model. That focus has or did, for a quite a long time, specifically eschew the use of drugs in treatment. In fact, many AA advocates felt that drugs were contraindicated for the treatment of alcoholism. More varied treatments are now used in concert, including behavioral approaches, Twelve-Step approaches, and selective medications to treat co-morbid conditions, like depression, anxiety, and schizophrenia. Dr. Black will be talking from the perspective of his research, which suggests that medications that address some of the neurophysiological mechanisms that underlie pathological gambling may be promising. And he will weigh the evidence and discuss it with us.

Finally, Ken Winters, from University of Minnesota, will confront another long-standing problem. Until very recently, little research on adolescent gamblers has been reported. One reason may be that until recently few researchers recognized the risk that pathological gambling represents for adolescents and college students. It is only in the last decade that we have come to recognize the full extent to which youth, --- high school, junior high, and especially college students---gamble, often in conjunction with abusive drinking. In the absence of data, many of us just simply assumed the treatments that were appropriate for adult males would also work for youth. We have learned from a variety of sources that that just isn’t so.

The four presentations that will follow these remarks today represent fresh, innovative and important thinking about the causes and cures of pathological gambling. The four individuals from whom we will hear have all broken new ground and markedly increased our understanding of this problem. I look forward to their presentations; I know you do as well.

References:


Opening Remarks –
Gambling Symposium:
Beyond The Odds

Peter E. Nathan, Ph.D.
Departments of Community and Behavioral
Health and Psychology, University of Iowa
May 5, 2005

Gambling by human beings:
“a long past but a short history”

• Although humans appear to have gambled for as long as they have recorded their own history, serious concerns about gambling have only arisen relatively recently.
• The recency of concerns about gambling probably reflects the extraordinary recent proliferation of gambling venues, from Las Vegas to Atlantic City to inland waterways and beyond, during the past 30 years.

• With society’s newfound interest in gambling have come efforts to identify and diagnose pathological gamblers, to treat them, and to prevent the problem from developing in the first place.
• The four scientists with us today are among the world’s leading authorities on these matters.

• In fact, I cannot recall such a concentration of experts on assessment, diagnosis, and treatment of pathological gambling anywhere before, much less in Iowa City.
• I think we owe the Prairielands Addiction Technology Center a resounding vote of thanks for arranging this exciting program.

A bit of data on prevalence and assessment might be useful at this point for those of you for whom pathological gambling is not a primary clinical concern.
Gambling Symposium: Beyond the Odds

Prevalence

In the U.S., between 1975 and 1999, adult gambling increased from 68% to 86% and gambling patterns of women grew to resemble those of men (Gerstein et al., 1999).

Prevalence II

Estimates of pathological gambling among adults also increased between 1975 and 1999. Among gamblers, these estimates are 1.1% for level 3 (pathological gambling) and 2.2% for level 2 (problem gambling) (Shaffer & Hall, 2001).

Assessment: The SOGS

• A 16-item measure that asks for quantity, frequency, nature, and consequences of gambling (Lesieur & Blume, 1987). Examples:
  – “When you gamble, how often do you go back another day to win back money you lost?”
  – “Do you feel you have ever had a problem with gambling?”
  – “Have people criticized your gambling?”
  – “Have you ever argued with people you live with over how you handle money?”
  – “Have you ever lost time from work or school due to gambling?”

Assessment: DSM-IV

• Nine criteria, of which five or more must be met for the diagnosis of pathological gambling. Examples:
  – “…needs to gamble with increasing amounts of money in order to achieve the desired excitement.”
  – “…has repeated unsuccessful efforts to control, cut back, or stop gambling.”
  – “…after losing money gambling, often returns another day to get even.”
  – “…lies to family members, therapist, or others to conceal the extent of involvement with gambling.”

In previous presentations, I have identified a number of outstanding, unanswered research questions about pathological gambling. These questions have remained unanswered until very recently, in part because serious research attention to gambling dates back only a decade or less.

• Happily, these issues are beginning to be addressed, many of them by the four scientists who will shortly be presenting.
• Thus…
Robert Ladouceur, Ph.D.

- **The Problem**
  - Research on the roots of pathological gambling (PG) as well as on treatments for PG until now have largely been derived from models originally developed for alcoholism and other substance use disorders.
  - As a result, PG assessments and treatments have been restricted, perhaps inappropriately so.

Robert Ladouceur, Ph.D.

- **Ladouceur’s Solution**
  - Bob Ladouceur has developed a view of the etiology of PG – and its treatment – that focuses on behaviors that are unique to PG, rather than on behaviors common to substance abuse and dependence.
  - Today, he will describe his research on models and the extremely promising approach to treatment he has developed.

Rani A. Desai, Ph.D., M.P.H.

- **The Problem**
  - Historically, gambling has been seen as largely a problem of men. Little research on pathological gambling in women, its nature, extent, unique features, and possible treatments, was undertaken.
  - As a result, few distinctions between men and women with gambling problems have been drawn, and distinct treatments for women have not been developed.

Rani A. Desai, Ph.D., M.P.H.

- **Desai’s Solution**
  - Rani Desai is one of the first researchers to study pathological gambling in women and older adults. Her findings will doubtless enable the design of assessments and treatments tailored to the particular problems of women who gamble.

Donald W. Black, M.D.

- **The Problem**
  - The notion that a habit disorder like PG could be treated medically rather than behaviorally has been discounted until recently, on the grounds that, as with substance abuse, effective behavioral treatment that aims to get the patient to stop drinking, using, or gambling ought to be the prime focus of treatment.

Donald W. Black, M.D.

- **Black’s Solution**
  - However, as Don Black’s research suggests, medication that addresses some of the neurophysiological mechanisms that may underlie PG has proven to be of promise.
Ken C. Winters, Ph.D.

• The Problem
  — Until very recently, little research on adolescent gamblers had been reported, perhaps because few researchers had recognized the special risk for PG that adolescents, especially college students, represent.
  — The result was that many clinicians and researchers simply assumed that treatments that were appropriate for adult males would also work for youth.

Ken C. Winters, Ph.D.

• Winters’ Solution
  — Ken Winters has identified unique aspects of adolescent gambling, and has drawn intriguing conclusions about the role of the developing brain in adolescent gambling.
  — Ken’s research has also led him to design promising treatment programs specific to adolescent PG’s.

To Conclude

• The four presentations that follow today, then, each represents fresh, innovative, and important thinking about the causes and cures of pathological gambling.
• In my judgment, the four individuals from whom we will shortly hear have broken new ground and markedly increased our understanding of this puzzling problem of pathological gambling.

References


References II


I hope my talk today will be instructive. I’d like to share with you my sense of a global understanding of the patients you see. At the same time, while I intend to focus on cognitive factors in gambling disorders, I don’t want to be exclusive. That is, the perspective that I will present doesn’t mean I reject everything else; quite the opposite. As I mention a few times during my talk, tomorrow we’ll have a practical workshop. It will demonstrate that while the cognitive aspect, the cognitive explanation, the cognitive treatment, the cognitive components for use in prevention, are all important. As clinicians we know that there are other things that we do that we feel are important. What I’ll be saying: I strongly believe that cognitive factors and techniques need to be included in treatment for gambling disorders, but we may need to add other things as well.

Interestingly, just a few seconds ago, I said I’ll take another coffee, so I went to the vending machine and I bought a coffee, which was light. I thought it was a good coffee, but I looked on the cup and I saw cards, right here at the university, and the cup says “Jokers Wild.” On the side, it says “Caution: the contents are ‘hot’”. So, like a slot machine, the content is hot; so does that mean I have to go back and have another coffee because it is about to pay off? I’ll let you think about this; it is very interesting.

What I plan to discuss with you over the next 60 minutes or so are some of the basic components of gambling, and for those of you who are clinicians, who have seen some problem, pathological, compulsive, level 3 gamblers, quite often we take for granted some of the basic elements of the psychology of gambling – the cognitive aspects – and I’d like to flesh that out for you this morning. When we talk about cognitive therapy, and behavioral therapy, this pivotal component is quite important. And I’ve added behavioral in the title, because if we don’t tackle the cognitive aspect, not only will we reduce the efficacy of our treatment, but we may put our patient in a situation where unfortunately sooner or later, and probably sooner than later, the patient will have relapse. And that does not exclude also following drug therapy. I look forward to Dr. Black’s presentation where, even if we use some of the medication, I think if we don’t tackle this thing, sooner or later you will see that the urge, or the expectation or the feeling that it’s my lucky day, will come back and may just create a relapse.

Now I’d like you to imagine what is going on in the minds of the different people you see in the next slide. You see this guy going to the track; he has the right pony, the right horse that he will bet on. And what do you think he says to himself? If we could hear his internal monologue, what would we hear? What do you think he says? “I’m sure I have the right number”; “I must go, today is my day”; “It’s the day I cannot afford not to gamble on this horse”. He is quite convinced that he needs to bet on that horse, so his internal monologue will be around that topic. What about his wife? We don’t know what she’s saying to herself, but certainly something very different than what her husband is saying. Probably something that expresses disapproval. “He’s
crap at this thing”; “He’s stupid – he’ll put us in trouble again; more debts and blah blah blah” – something like that. Probably what she refers to are the negative consequences of not realizing what her husband is expecting to realize.

And finally, the little boy – if he understands, and I suspect he does, he knows that there’s trouble. His parents’ relationship is not harmonious, and he’s again trapped in a situation that he has probably witnessed quite often in the past and he’s still there. Maybe he’s fed up or angry, “Will dad stop?” You see, with the same situation there are many interpretations and that’s what I’d like you to bear in mind as we go along. Maybe to understand a little more requires trying to imagine or think of one of your patients – the one you had yesterday or last week, the last patient that gave you a little bit of trouble. What was that client saying to him- or herself concerning the gambling activity? I think that will highlight what we’re doing.

When we look at the most basic question: how do we define gambling? There are many ways, but the crucial and probably unique factor appears when we compare gambling to substance abuse. Thus, whereas there are many similarities between pathological gambling and substance abuse, there are a few things that make them quite different. The last component is the nature of the outcome of the game based on chance. The other difference is that there is no substance that the gambler takes to become a pathological gambler. That’s why some authorities say that gambling is a cognitive addiction. You are addicted to what you are convinced of, you are convinced about your expectation, but there’s no substance – we’ll discuss that a little later on.

What do we mean by chance? All of us have been using that word many, many times. If I would ask you to write one or two sentences on what we mean by the word chance, I suspect it would be more difficult to do so than we might think. What do we mean by chance? Well, to make it easy because we’re at a university but we’re not in class, and there’s no exam, the main point is the fact of randomness; chance – the meaning of these two words is pretty similar. From an operational stand point, where I’m a client, chance means that you cannot predict the outcome. And why can’t you predict it? Because all events have an equal probability of coming out. If I toss a coin, we all know that you have one chance out of two to get a heads or a tails. But if I toss a coin and heads comes out four times, and I say, “Put down $50 and we’ll bet on the next toss” – four heads came out and the fifth one, what would you bet on?

[audience member]: Tails

Tails. You?

[audience member]: Tails.

Tails. Why?

[audience member]: Chance says it will happen.

You may be right, you may be wrong. I don’t know how much money you have in your bank
account, but the thing is regardless of whether we say heads or tails, what is important is the mental process you used to pick heads or tails. I would predict, and I’m ready to bet a lot of money, that the majority of us would take into account the four previous tosses. We have two ways to predict. It’s either that the string of heads will continue or the next toss, like all the others, is due to chance. In either case we make a major error because we know from a cold situation that every time I toss my coin I have one chance out of two. But when we’re hot, sitting at a table, betting $50, we want to know that previous information, although we know this time it’s one out of two, – we’re not using that information – it may help me to make a better bet. That is why what we know and what we put into practice are very different. I’ll be using that concept a lot. Information is not enough; it’s when you process that information while you’re in a hot, emotionally involved situation like betting. What your client says when they are in the office is quite different than what they do when they are sitting at the table at the casino or in front of the machine. We need to translate all the cognition that I talk about with our clients in our office when they talk emotionally. We need to discuss that, and we’ll discuss that again in the workshop.

This gets at is the major problem with our gamblers – it’s not the unique problem but it is the major problem. How many times did you hear over the years or over the many patients you’ve had, a patient say, “I know everything is randomly organized, but I can’t stop gambling.” You don’t hear that. What you hear instead is “I knew that was my lucky day; I knew that I had some expectation to win; I felt – I may lose,” but this is the conviction about the prediction. When gamblers are at the table, or walking in the venue or casino to pick the machine they will play, they don’t do it on a random basis; they try to pick a machine according to different criteria. And the criterion they think is best is to try to pick a machine that hasn’t paid yet, a machine that is “due.” Right? That’s what I do; that’s why I still work. [laughs]

Well, what is the difference between - and this is very important – what is the difference between a game of chance and a game of skill? I will make an assertion that is quite important here: if you cannot make that distinction as a therapist, you’ll be in trouble because your clients know a lot about gambling – much more than you do and much more than I do, and they are convinced that when they bet on that horse they knew, and unfortunately if this horse did win, it reinforces how good they are. When the horse breaks his leg or doesn’t get in, it’s not because they were not good at picking the horse, it’s because this damn horse was not doing his proper job. OK?

What is the distinction between a game of skill and a game of chance? There are many criteria we could use, and among them is practice. The more you play, the better you become. Let’s take skiing: the more I ski, the better should be my performance; the more feedback I receive on my skiing, the better is my performance, and practice increases my self-confidence. So there is practice, and practice refers to the notion of skill. The more I practice, the better I will perform, the better I will be. Isn’t what you hear from your client? “The more I play Black Jack, the better at it I am”? “The more I play the slots; the better I am at knowing which one is good” What our clients are doing, actually, is that they are confounding a game of chance with a game of skill.
You can be sure that, regardless of the time you spend at a gambling venue – on a slot machine, for example – you will never increase your performance level, never. Try it if you have time, play bingo five hours a day, five days a week, for five years, I bet you you’ll never be better at bingo. You may be better at knowing where B4 is, but the outcome will be the same.

Well, here is what we will work on with the kind of therapy we have developed to correct those erroneous perceptions by the gambler. At the same time, you need, as a therapist, to be convinced that the game or games that your client is having problems with are based on chance. Why is that so important? If the client is not aware of his erroneous perceptions about chance versus skill, the cognitive traps that he’s in, he needs help becoming aware. Your role as a therapist is to increase his awareness of chance and its impact on the likelihood that he will win more than he loses when he gambles. If you are not sure that there not may be some skill involved in games of chance, you are not ready to do cognitive therapy with gamblers. I am sure there is not skill involved in chance games, so I suggest to my clients, “don’t do that” because you will lose – you will fail. Thus, in therapy – and please, if you don’t agree with me raise your hand – the majority of what happens in the conversation between the client and you as a counselor is the client tries to convince you that he was right to believe in the skill component. He knew. Unless he is now in therapy and has accepted the primacy of chance, first, it’s just that he was or is right and he doesn’t understand why it didn’t turn out the way he expected. He’s trying to justify his behavior and sometimes I hear the word denial - “He’s denying his problem.” I’m not saying that denial is not the right word, but I don’t like it. I’d prefer to say that the client is not in denial, he is still having those erroneous perceptions that he may recoup his money. And if I were convinced that tonight if I go to the casino with $100 I could win $2000; let me tell you tonight I would not be in my hotel room watching a movie. I’d be at the casino if I’m convinced. So what we need to challenge here is that that conviction may not be right. If you as a therapist or counselor are not convinced that there’s no element of skill, your client will convince you – and they have more ability to convince us than we have to convince them. This is the basic assumption, that it’s based on randomness.

This assertion, of course, does not apply to all games. Which games doesn’t it apply to? Poker, for one. Poker is very popular. We don’t know at what point in the game there’s an element of skill, although playing poker among friends does require some skill. While I don’t know what percentage of the game requires skill, I can’t be quite as affirmative in saying there’s no skill required to win at poker. Of course, you run the risk of having your client say “Well, you’re not knowledgeable about gambling. Why would I stay in therapy with this person – he doesn’t know what he’s talking about”. About poker be more cautious, but all the other games are based on chance and there’s no way you can control the outcome of those games.

And that’s part of the paradox. Winning is the main point of gambling. Winning is what is addicting. The game is fun because there is a possibility of winning. Many have never realized that, but some clients say, “I’m not playing just to win. I’m playing to escape, and because it makes me feel good.” You can say, in response, “That’s possible. But there’s one basic element
in gambling that motivates you to gamble, and that’s because there’s a possibility of winning.” And the client might respond, “Why are you so sure?” and I will say “Well, let’s make that analogy.” Let’s say that they like to play Blackjack or they like to play slots, or whatever, and imagine that when they start playing, they know that the machine or the table tonight will never pay the wins. Will the client continue to play? – no way. Why? Because, just imagine – the experiment will cost you about $5 to go on the internet – buy a little machine that will cost you about $5-6 ($Canadian where I live, so it will be cheaper for you) at Radio Shack or wherever, and you can play the slots. Play that. It is boring. Because there’s no possibility of winning money, it’s the most boring game. Playing Blackjack without money; it’s boring; probably more boring than watching the rain fall. It’s boring. What is exciting is the possibility of winning.

In all organized, legalized gambling, there’s always an edge on the house, so over the long term, you will lose - I’ll show you a graph in a few moments that illustrates that certainty). This being so, why is gambling so popular and why do some of us become addicted to games of chance? Well, here’s another paradox. While we gamble, we tend to “forget” that the outcome of the game is based on randomness. Why do I use the word “forget”? That’s quite interesting. My good friend and colleague, Howard Schaffer, developed a mathematical curriculum for prevention. We’ve just completed two studies revealing the following: knowledge of probabilities has no impact on prevention. We studied graduate students in mathematics, in statistics, and in actuarial science, and another group of graduate students in literature, philosophy and art – all were graduate students, very intelligent, attending Laval University, where I teach, so they’re very, very brilliant. We compared the two groups. While they were gambling, the two groups admitted an equal number of erroneous perceptions. When they were out of the game, they accepted the importance of randomness, especially the students in mathematics. But once they’re engaged in gambling, it’s like we said a few minutes ago: Even though in tossing a coin, you know it’s one out of two, but when I say put down $50, and I tell you the result of the last four tosses was X, Jeez, you don’t want to ignore that. You know it’s not that relevant, but since we have the information we might as well use it. Right? So knowing is not enough. It’s the masking. We tend to forget what we know – and I’ll show you how the structure of the game provides us all those elements that we forget. And probably this is why we have fun. But some of us get addicted to the game because of that.

Why this notion of the mask? Well, I won’t detail that today; I’ll do it more tomorrow. Suffice it to say that there are many features of the game that make us mask. For example, the more active we are in the game, the more we tend to mask the notion of randomness. For example, it is 6, 49 you pick your numbers. But if I pick my numbers, that means my choice must be important. If I pick the horses, that means my choice is important – if not, why would I pick the numbers? And there’s quite a few in the perceived competition that will look at the structure of the game. And not only the structure of the game but the way many games are advertised – What do they say in Vegas about Black Jack or the Machines? “Beat the Machine”! “How to beat the dealers”! There are books on doing just that How to play Black Jack. So if there is something that I can beat, it
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means there is something I can do to be better. This is not randomness. Put two men – two boxers – in the ring, and its randomness – wow, if I go there, I’ll be knocked out in about two seconds. It’s not random. Beat the frequency of the game. The more you play, the better you are.

And that’s true in a way because we’ve been reinforced for trying to pick the right numbers or the right horses. So, many of those factors are quite significant. For example, in roulette, which is fascinating – I don’t know, in a casino here, I haven’t been in a casino in Iowa yet, tonight is the night we’ll go together, but in Quebec, in the casino, there’s roulette, and you see it in Vegas, as well. I wouldn’t say it’s immoral, but I think it should not be there. Look at the roulette table. What do the dealers and pit bosses do? They give you cards on which you can record and monitor the numbers that have been out. And not only that – maybe they think we’re stupid – but they have a board and they post the previous numbers. And not only that – they probably think we are intellectually deficient people – they separate the red from the black. So what does that mean? It means: “Hey, look at that! It may help you to make a better bet.”

This is where I come in. When we analyze what people say to themselves when they’re gambling, like the man in the cartoon in the first slide that I showed you, we find that about 75-85% of their perceptions are erroneous. Erroneous.

This is probably most important for therapists. When we analyze all these erroneous perceptions, we looked for clusters or a central determinant of erroneous perception. Before I share with you our findings, let me ask you to share one erroneous perception that you commonly hear from your patients.

“Machine is due.”

“Got $200 in the machine – it has to pay now.”

“I feel lucky today.”

“The last 2 or 3 times I went gambling I did not win – tonight is the night.”

“I’m with my lucky partner.”

“The lucky dealer is back – he was on vacation.”

When we look at these findings, we find that 90% of all the erroneous perceptions refer to the basic idea of making links between independent events. And when I say events here, I’m not just saying past events. “The machine is due, you know, I’ve been playing for an hour, it hasn’t paid yet” – that’s not true. Every game is a new game. “I’ve been playing two nights in a row – I didn’t win – tonight I’ll win” – that’s past events. But emotions are also independent events that we link with gambling - “I feel good today, it should be a good day for gambling” or “I feel bad, it should be a good day…”; “it’s my lucky partner”, “my friend is in town – let’s go”, “I’m bored.” Making links is not only between past events, or games, but also between emotions. In
this regard, we must refer here to what many call superstitious behavior. What is that? It’s making links between two independent events. No causal effect. And this is what we find in our clients. Just listen to the internal monologues, the monologues they share with you about their gambling, and you will recognize that a lot of what the client was doing was creating links between independent events. It doesn’t make sense to do so, but our clients persist in doing it.

What I am reiterating here is that the way we perceive things is a major determinant in how we behave or conduct ourselves. That is a truism with which virtually every psychologist would agree.

Now let me show you two slides that illustrate how important the way we perceive things is to how we behave. The fact is that our clients perceive things in a very different way.

Why are we overwhelmed with those erroneous perceptions? We did a study about two years ago. For you clinicians, I think its results will illustrate a lot of the difficulties this erroneous perception causes. Because, let’s be honest, working with a pathological gambler is not easy. They have their own idea that they want to get across, and what we want to induce, a change in perceptions, is difficult. Some call it resistance; I prefer, rather than using “resistance”, to say “they are convinced. Therefore, they will be resistant.” So if we can modify their conviction they may be less resistant.

What is the difference between problem and non-problem gamblers in terms of erroneous perception? Is it only in frequency or amount? In our discussion of this issue, we won’t linger on the methodology of our research because we want to get to the results. Suffice it to say that there are two groups of adults, some of whom are pathological gamblers and others of whom are gamblers but not pathological gamblers. We train both groups to think aloud because it seems important to let the person verbalize out loud what they say to themselves in order that they will become aware of what they are saying. Just think, if you drove from your house here this morning, I’m sure you had many internal monologues while you were driving. But if I ask you “what you were saying to yourself?” you don’t remember. What we need to do is to increase the level of awareness of our thinking so that we become aware of what we say. So, when our subjects played the slot machines in the VLT – that’s the Via Large Terminal –we recorded what they were saying, and we divided their responses into three categories:

**Adequate**, which means that all verbalizations that were related to gambling could not control the outcome of the game, challenge its randomness and chance character, and so on.

**Erroneous**, by creating links between independent events, and

**Neutral**: Irrelevant to gambling. For example, “I have a date tonight” or “I don’t know what I’m going to cook tonight”.
The results were interesting.

The initial result is that the number of erroneous perceptions did not significantly differ between the two groups. Why? I think that’s because all gamblers, pathological and not pathological, share those erroneous perceptions. Without those erroneous perceptions, the game is boring. To this end, one of my good colleagues reported saying to a client, “Francis, you will overcome your gambling problem the day you gamble at the roulette table like a chimpanzee.” To this, the client asks: “What do you mean, gambling like a chimpanzee?” “Tell me, how could a chimp gamble at the Montreal Casino?” My friend explained: “When you were playing roulette, you studied the numbers, and you would hold your bet a few times to bet on the number you think will come up. Well, imagine a chimpanzee at the roulette table – the chimp would have this bunch of chips, walk around them, then they would put them on the table like that, in a random way. So when you decide you can gamble in a random fashion that means you are probably not addicted any longer, because you are just cutting the erroneous perception.” But when we do that, it’s boring. It’s not fun anymore, right?

A second finding was that the number of perceptions related to gambling was higher in the pathological gamblers than the non-pathological gamblers, but what was more interesting was the degree of conviction. Five times during the game, when they verbalize their erroneous perception, we ask them how convinced they are that, for example, the machine is “due?” We rate that. The non-pathological gambler was less convinced than the pathological gambler, but what is probably more interesting is that, during a gambling session, when they are not winning, the degree of conviction in the erroneous perception of the non-pathological gambler would decrease, although they started at the same level as the pathological gambler. For the pathological gambler, the more they gamble, the more they remain convinced, that the machine is about to pay.

So it seems, for the non-problem gambler, there’s a kind of self correction in erroneous perception that goes on. And that’s why it’s difficult to deal with our clients, because they are convinced they can influence their gambling outcome. That’s one important reason why they don’t stop after they’ve lost the amount of money with which they planned to gamble. They should stop but they continue because they are convinced that the machine is about to pay. I think that difference between the pathological and non-pathological gamblers explains a lot when you try to modify some of the behavioral cognition in your client. He’s convinced he can have an impact in a completely random gambling environment.

Let me talk a little bit more about the theoretical aspect of this matter that has some implications for clinical work. What are the assumptions of cognitive therapy? One important assumption is that the cognition we have about the game, the interpretation of the game, translates into “How do I interpret the game?” That means, above all, “How can I control the game? – what strategies can I use?” I’m not saying that this is the unique cause of pathological gambling, but it is a factor
in the thinking of the majority, if not all, our clients. The cognitive component will be a significant factor in the future of their gambling behavior.

At times, contrary to all expectations, the pathological gambler is not only not convinced that he will win on every bet, but he is convinced he will lose. Yet the client continues to gamble. Who would gamble when they were 100% sure that they would lose? Some say “I will gamble even if that is true.”

In such a case, you might ask “Why?”

“Well, I want to test it”

“Why do you want to test it?”

“Maybe it’s not true that its 100% sure that I will lose; I want to give it a try”

“Ah, you want to give it a try? What pops in your mind?”

“I don’t know.”

I’m not saying that we’re not taking other factors into account, but this possibility of winning in the face of a conviction that they will lose is under investigation in our clinical research. If clients are 100% convinced they will lose, usually they will not gamble because it’s a bad dealer, it’s not a good horse, all kind of reasons. Why don’t you bet? – It’s about odds, because you will not win. One thing we should never say to our clients is “You can’t win at those games” – it’s not true; on the short-term basis you may win; on the long term basis, you will likely lose. And what is the red line? That’s the casino, because they have an edge on the slot machine of 8%; on a Black Jack table, they keep 2%. So the casino doesn’t care about short term losses because they know they will win in the long run. And that’s entertainment – we see gambling as entertainment, and I think we have no problem with that.

But just think about an analogy, which I find interesting. Going to see a movie is entertainment; going to a restaurant is also entertainment. But with these entertaining activities, you know the cost of them before you choose to participate. If you want to see a movie, it will cost you $10; if you go to a restaurant, and you want a steak, it could be $25 or more. When you start gambling, however, you don’t know how much it will cost you. So imagine tonight you go to a very nice restaurant, and they give you a menu, and there’s no price – would you order a steak? No way – you’d say: “How much does it cost?” If you play Black Jack – let’s say a $5 hand, over one hour - what are you expecting to lose? That is the cost of gambling, but the casino doesn’t say that. It would be nice to post it on the slot machine: “Welcome – for your entertainment it will cost you $22.30/hr”. Do you want to deal that? That’s the way it should be.

So the casino is sure to make that amount of money.
If cognitive therapy is being used, with its emphasis on cognitive variables, what are those mental processes? That’s what you hear so often in therapy sessions, those erroneous perceptions, like “I can beat the notion of randomness”; this is the gambler’s fallacy. “After four heads it has to change”; “after four losing nights, it’ll be my winning night”. The illusion of control: “I can predict the outcome”. When you hear the word “predict”, how should you respond?

Every time you try to predict something you need to refer to past events. That’s what’s your clients are doing. I’m trying to predict, I think tonight will be fantastic. So that gives us the opportunity in our clinical interventions to focus on that issue of prediction. How can you predict what you did? How did you come to that conclusion? Here, we see the client masking the notion of randomness, because the client claims previous events can influence what will come. And that is the crucial erroneous perception, I think, trying to predict. I like fishing. Probably you don’t. Well, if it’s a cloudy day, a little bit cold, I will use my Mudler minnow fly and this corner of the lake. I will also predict that this is the right stop. Why? Because, during previous years, when it was that season, and a cloudy day, I have used my Mudler minnow and I got big trout. But always be careful when your client says something about predicting. They may not say they are predicting, but may point to exceptions, etc. Be sure to dismantle those words and you will almost certainly get to some of the previous events to which they will also refer. With enough discussion, they will soon realize that they are making those same associations.

It is very important for researchers and clinicians to recognize the triggers for gambling in the cognitive model, I certainly don’t want to say that in the cognitive model we don’t use behavioral interventions, quite the opposite. We do. The behavioral interventions include planning your budget, avoiding places where you may gamble, etc. Those interventions will come after the cognitive corrections, because if you don’t make clients aware of their erroneous perceptions, all that work will probably be undermined by cognitive urges that will come. So, what’s the crucial thing? It’s not only the triggers, because with the same triggers some will gamble and others will not. Among those who will gamble some will do it in a controlled way, and some will do it in an uncontrolled way. The triggers are important but where we want to focus our intervention is on the erroneous perception or cognitive variables. The mental variables we take in account that are real; they exist. You hear them in your office. And this is when we talk about prevention. We welcome monitors and logs for prevention. In this regard, it’s our strong opinion that the ultimate decision to gamble or not to gamble belongs to the individual. What we believe is that in order to make a good decision, you need make an informed choice, and that if you are still overwhelmed by erroneous perceptions, you will be unable to make an informed choice.

May I say before I forget that when I talk about cognitive correction, I do not mean trying to convince the client that he or she is wrong. If you try that, maybe you will succeed, but I have never done so. Never. It’s not like “Hey, that is wrong and this is right, think this way.” We know it doesn’t work.
How do we proceed? Again, in the clinical workshop we will go over some of that. The change must come within the individual. And what I mean by that is there is one magic word, dissent. I strive to try to create dissent. What do I mean by dissent? Something is a dissent when the same information sometime works and sometime doesn’t work. What we do as clinicians, and this is probably the most difficult clinical intervention, is not to say ‘Hey, the machine is due,’ this is not true. The machine is randomly organized. Probably zero effectiveness on such a statement. Instead, what we want to create is agreement that sometimes you win, sometimes you lose. Because, you know that one day my lucky buddy will be in town and we will go to the casino and that guy will win. But other times he has lost. And if the client is in your office, it’s not because he has been winning over the last five years. So why not tonight, when my lucky buddy is in town? When he’s there sometimes he wins and sometimes he loses. Why is that? Now we are creating a dissent to the client’s belief that, so long as he or she perseveres, winning will follow.

There’s an error in the system and the system is what you as a clinician have to go to to prove the independence of events. Over the years we have seen hundreds of pathological gamblers, but no one yet has knocked on my door and said, “Hey doctor, I have a problem with gambling.” “Oh yea, what is your problem?” “You know, doctor, I am making erroneous links between independent events, and can you help me out of doing so?” That will never happen. Knowing how unlikely it is that that will happen, I conclude that it’s probably not useful to give clients that information about the centrality of erroneous perceptions in this gambling problem but to help them realize that that’s why they have been trapped.

Well, now I’d like to go over the different studies Peter Nathan mentioned, the different random controlled treatment outcome studies we did. But before beginning, I’d like to say that A and B are not for the client. They’re for us. That’s our work. Once we see what these studies reveal, we could start increasing the awareness of the inaccurate perceptions of our clients and start creating dissents in order that they won’t keep making those errors. But those two reading books are not that useful. Remember one main distinction that I made at the very beginning between hot and cold situation. This is cold. Doesn’t work. For example, when we do the cognitive dissents intervention, we create a situation where a person will feel that he or she is in front of the machine or sitting at the Blackjack table. Because this is where we get emotionally aroused and we need that in order to get the emotional response. So, this is not for your client, it’s for me. Once I know that I can work on this, what is the result? Across studies, when you have a control group and a treatment group, there may be a significant difference between the two. I borrowed a nightlight from a friend, Randy Stinchfield, who works with statistics, which I love. Statistics can be used many ways and this guy is a statistician, and he wants to have this .0001 across all these behaviors, so we may interpret that in a different way.

Well, is it really cognitive? It may surprise you but there is a pilot study that we just completed with my Australian colleague. The procedure is called “Imaginable Desensitization.” It is largely behavioral rather than cognitive. You might remember that what I have shown before in the
cognitive model, it is important for us to focus our interventions and decrease well arousal. If you correct those misinterpretations and see the outcomes of gambling as random, the game will probably not be as exciting as my chimpanzee playing roulette. There are those who view the arousal theory of gambling as wrong, who think just the opposite. They think that it’s because of the arousal that we develop erroneous perceptions. So, as a clinician, which view will you adopt? Should we increase or decrease arousal to decrease the probability that erroneous perceptions will emerge.

In this instance we did cognitive group therapy group without touching the question of arousal, while the other group focused on the arousal with imaginable desensitization. The results were quite interesting. Doing cognitive therapy improved the erroneous perceptions and the cognitive variables; the treatment corrected the misbeliefs associated with pathological gambling. It also decreased heart-rate, decreased arousal, and decreased the urge to gamble. With the same measures and imaginable desensitization, only self-control improved. Even then there was no additional decrease in heart rate. So we conclude that cognitive therapy is effective in reducing irrational beliefs, reducing the urge to gamble, and reducing as well the excitement associated with those changes. I take these results to mean that we should target our interventions on cognitions. I also think this treatment could be augmented by medication to create a context to help your client cope with stress of gambling, but at the same time correcting those urges that are related to the erroneous perceptions.

Is this kind of therapy really cognitive? I think it is. I believe it is what we call empirically validated therapy. There are criteria for establishing that a treatment is empirically supported that the APA and other groups have developed, but I don’t think we have the time here to go through all of them.

To conclude: There are about a dozen, maybe fifteen now, randomized control trials on treatment for problem gambling. They are all identified as within the domain of cognitive and/or behavior therapy; again, I am excluding drug therapy. I am not saying that the other approaches are not good. Quite the opposite, I’m saying if you use another approach, you might want to add something that has been proven to be effective. I would divide these treatments into three sub-groups. The first would be cognitive, more of the imaginable desensitization behavioral therapy, a kind of a blend. Well, is this approach effective? I would say yes, it’s effective, but it’s not yet empirically supported. We cannot finally conclude that this treatment has been empirically supported because there are a few additional studies we need to conduct. But we are pretty close to that goal, and I think in the short period that we have been working on it a lot of good work has been conducted. The conclusion I would like to leave you with is I think we need to continue clarifying the processes and mechanisms involved in cognitive treatment for pathological gambling. I know that most of you are clinicians, not researchers, but you can see things from the researcher’s side. In this regard, I think it would be a major error that, too often when we present on pathological gambling, we leave the impression that once we see one pathological gambler, we have seen them all because they are all the same. This is not true, we
know. Most of you are probably aware of the threefold pathway distinction that has been used to describe types of gamblers: One is more the pure pathological gambler, the second is more the emotionally unstable person who has developed a gambling problem, and the third is more the impulsive, biologically-derived problem gambler. That’s three, there may be four or five. But we want to adapt our intervention according to the type of client we have, and the intervention should almost certainly differ with the type of gambler. So, although what I have said applies to the three types I have described, and maybe the five types you will be seeing, using this cognitive correction is important. It may be sufficient in the first pathway, but we may need an additional thing on the second and the third pathways. Well, thank-you for your attention and, if you have any comments or questions, please ask them.

[Audience question]

**Speaker Dr. Robert Ladouceur:** I must say, and I was thinking about discussing this matter tomorrow, we have a large clinical trial in Ontario and Quebec where we are exploring controlled gambling. Last night I was discussing it with some of my colleagues here. I want to share with you what the criteria are. If you are a problem gambler and you see this first, what we will offer you is treatment that does not aim at abstinence but offers ways to control your gambling. This has to derive from your own motivation and if you come to me and say I would like to stop gambling, great, I will not try to convince, but why not try gambling a little less. No way. Why we have developed this approach is that it is our experience that there are not as many gamblers as we expected about 10 years ago that would seek treatment. And there may be many reasons. One of the reasons was for us from our clinical experience, many gamblers know that they have a problem, but they are still convinced that one day they will be able to control their gambling. And more importantly, they want to continue gamble, which is why there is a high dropout rate from treatment. The dropout rate is quite often because the gambler was in your or my office once to stop gambling and says he has $25,000-$35,000 in debts; if he continues treatment it means he will never go back gambling in order to recoup his money. So, what will he do after the first session? He will say thank you very much, and a few days later he will say the therapist is a nice guy but if I continue how will I recoup my $25,000, and he will go back to gambling.

Just want to share with you some preliminary data: Interestingly the majority of the clients already enrolled in our program say that they would have never called the treatment center if controlled gambling treatment was not offered.

Roughly half of these clients, after a certain period of time, ask whether they can work on abstinence now. And why do we say yes? The reason is the following one. The clients are saying, ‘look, for years, I have been convinced that I can control my gambling, but I didn’t succeed by myself.’ I saw you as a professional, an expert. As an expert, you accepted to work with me by achieving my goal, which was control. So I have all of the conditions to achieve a success, but, after five weeks, six weeks, three months, I realize it doesn’t work. So now I have
concluded that controlled gambling doesn’t work for me.’ So now we go for abstinence. Since we want to bring their gambling behavior under control, controlled gambling means either controlled gambling or abstinence, we are just fine with this scenario.
Empirical Evidence of Cognitive-Behavioural Treatment For Gambling Disorders
Robert Ladouceur, PhD

Gambling Symposium:
Beyond the Odds
Prairielands ATTC
University of Iowa,
College of Public Health
Thursday, May 5, 2005

Outline
1. Psychology of Gambling
2. Assumptions and postulates of CT
3. Empirically validated therapies
4. Main Treatment outcomes of CT
5. Is CT really cognitive ?
6. Conclusions, Remarks, Questions

Definition of gambling
1. Individual must realize that he/she is putting money or a valuable object at risk,
2. Once bet, this money or valuable object is irreversible
3. The outcome of the game is determined by chance

What is Chance or Randomness ?

Chance
An unpredictable event or accidental happening

Random
A method in which all possible events have equal probability of selection

From an operational standpoint
Impossibility of controlling or predicting the outcome of an event

Try to imagine what each individual is saying to himself or herself
What is the difference between a game of chance and a game of skill?

Different criteria may be used to distinguish a game of skills from a game of chance. In a game of skill:

- The more you play, the better is your performance
- The more feedback you receive, the better is your performance
- Practice increases your self-confidence

What is a game of chance?

Different criteria may again be used, but in a game of chance...

Regardless of the time you spend practicing and studying the game, your performance will never improve !!!!
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....Why?

Factors are masking the notion of randomness
1. Active role of the individual
2. Perceived competition
3. Frequency of gambling
4. Complexity of the game
5. And many more...

Few illustrations

Individuals who pick their numbers themselves at the Lotto, value their tickets more than if the numbers were randomly chosen !!!!

Few illustrations

At the dice table, if a high number is wanted, the dice will be thrown strongly, if a low number is wanted, the dice will be thrown softly.

Few illustrations

If we play roulette, we will “analyze” prior numbers or colors before placing our bet.

One crucial answer is...

We analyzed what people were saying to themselves while gambling.

Erroneous Adequate Perceptions

How can people predict chance or random events?

And more importantly,
Empirical Evidence for the Efficacy of Cognitive-Behavioral Treatment for Gambling Disorders

The main erroneous perception...

Making links between independent events (behaviours and emotions)

The way we perceive things...

We all know that the way we perceive things is a major determinant in how we will conduct ourselves

Degree of conviction in our erroneous perceptions

What is the difference between a problem and a non problem gambler in terms of erroneous perceptions?
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Method
Participants
– Adults meeting the DSM-IV diagnostic criteria for pathological gambling participated in this study
  Age: 40.6 years
– Adults not meeting the DSM-IV diagnostic criteria for pathological gambling
  – Age: 38.1 years

Procedure
1. Training in thinking aloud
2. Sequence of the game was preprogrammed and identical for all Ss
3. Rate of return was 92%

Results
1. % Erroneous perceptions
   – PG: 80.6
   – NPG: 68.7%  p < .07 (n.s.)
2. Gambling related perceptions
   – PG > NPG  p < .04
3. Conviction
   – PG > NPG  p < .0001

Results
Degree of conviction

Group vs Conviction

Estimated marginal means

Conviction measure
One assumption that underlies CT is that Cognitive Variables mediate/modulate the change in Gambling Behaviours.

Self Efficacy is the degree to which an individual believes that she or he can enact the required behaviours to cope effectively in a situation.

Theoretical Perspective

In Cognitive Therapy, the emphasis is on the Mental Processes or the Cognitive Variables.

Its the Money

• The “problem” gambler is convinced that he or she will win.
• No gambler will play if he or she would be convinced to lose.
Mental Processes.

- Erroneous perceptions,
- Randomness,
- Gamblers fallacy,
- Illusion of control,
- Biased evaluation of outcomes,
- Self-efficacy perception,
- Superstitions,
  Independence of events

Theoretical Perspective

- Mental Variables are real
- Initiation and Direction: The ultimate decision to gamble or not gamble belongs to the individual
- It is crucial to change the erroneous perceptions in order to facilitate informed choice and responsibility

Main findings: Treatment outcomes

Treatment components

1) Cognitive correction
2) Problem-solving training
3) Social-skills training
4) Relapse prevention

Clinical trials

Single case experimental design across individuals
1-(Bujold, Ladouceur, Sylvain, & Boisvert, 1994)

Experimental and control groups (waiting list)
2-(Sylvain, Ladouceur & Boisvert, 1997)
Cognitive treatment delivered in an individual or group format

Cognitive correction:
(a) Understanding the concept of randomness
(b) Understanding the main erroneous belief making links between independent events
(c) Awareness of inaccurate perceptions
(d) Cognitive correction of erroneous perceptions
Relapse prevention

Clinical trials
Single case experimental design across individuals
3- (Ladouceur, Sylvain, Letarte, Giroux, & Jacques, 1998).

Experimental and a control group (waiting list)
4- (Ladouceur, Sylvain, Boutin, Lachance, Doucet, Leblond, & Jacques, 2001).
5- (Ladouceur, Sylvain, Boutin, Lachance, Doucet, & Leblond, 2003).

Results
The conclusion is:
Treatment group was statistically better than the control group on the main outcome measures.

Average time per patient: 15-20 sessions

Is CT really cognitive?
1. In mediating variables, significant changes were found in SE et Perception of Control
2. In erroneous perceptions, some evidence was found.
Is CT really cognitive?

The results of a recent pilot study comparing CT with Imaginal Desensitization

(Blaszczynski, Ladouceur, Nower, & Sharpe, 2005)

Is CT really cognitive?

Cognitive Therapy

Improved in perceived self-control

Imaginal desensitization

Improved in perceived self-control

Gambling beliefs

Decrease in HR

Decrease in the urge to gamble

Is CT really cognitive?

Targeting erroneous perceptions may have a secondary effect on arousal, urges and excitement while the mechanism of imaginal desensitization does not operate through its hypothesized mode of action but is mediated through some other process that is yet to be established

Is CT really cognitive?

Cognitive therapy is effective in reducing irrational beliefs with reductions in urges and excitement associated with such changes.
Empirical Evidence for the Efficacy of Cognitive-Behavioral Treatment for Gambling Disorders

Efficacy of CT (CBT) ?

Empirically Validated Therapies

The American Psychological Association has recommended that Empirically Validated Treatment (EVT) should be used.

The criteria of EVT are stringent and rigorous.

Empirically Validated Therapies

Well-established Treatments

I. At least two good between-group design experiments demonstrating efficacy in one or more of the following ways:
   A. Superior (statistically significantly so) to pill or psychological placebo or to another treatment.
   B. Equivalent to an already established treatment in experiments with adequate sample sizes.

Empirically Validated Therapies

III. Experiments must be conducted with treatment manuals.

IV. Characteristics of the client samples must be clearly specified.

V. Effects must have been demonstrated by at least two different investigators or investigating teams.

Empirically Validated Therapies

Probably Efficacious Treatments

I. Two experiments showing the treatment is superior (statistically significantly so) to a waiting-list control group.

Empirically validated therapies

Empirically validated therapies

- About a dozen of randomized controlled trials of problem/pathological gambling were identified (psychotherapy)
- All of the identified studies were in the Cognitive and Behavioural Therapy perspective

- Cognitive Therapy (Laval Group: Ladouceur)
- Imaginal Desensitization (Sydney Group: Blaszczynski)
- CBT and stimulus control (Spanish Group: Eschuburua - Gonzalez)

Conclusion

Is CT effective?

Yes, it is effective as "Probably Efficacious Treatments"
We can not yet conclude that CT and CBT are Empirically Validated Therapies
We are close to reach this status

Conclusion

Is CT really cognitive?

There is growing evidence that CT acts on cognitive variables and brings significant changes in gambling behaviours.

Conclusions

We need to continue our work on clarifying the processes and mechanisms of our interventions
Which treatment is more adapted for which type of PG-The Blaszczynski’s pathway model could be of great use.

Empirical Evidence of Cognitive-Behavioural Treatment For Gambling Disorders

Thank you

Comments or Questions?
3. **Gender Differences in Gambling and Gambling-related Problems.** Presented by Rani A. Desai, Ph.D., MPH

Today, I’m going to be talking about gender differences in gambling behavior. A number of presenters at this conference have observed that the gambling research literature is fairly young, and certainly several decades behind research on other types of additions, including alcohol and drug abuse. This being so, it is clear that one of the areas that needs to be studied intensely as we go forward is gender differences.

To summarize: most gambling research has been conducted on samples that are either primarily or exclusively male. There are very logical reasons for this, but nevertheless, all of the information that we have about the genetics of problem and pathological gambling has come from a very large registry of twin males. There are no women in that data set.

It has been assumed in both the clinical and the research arenas that results we find in male samples would naturally extend to women. This is not an unusual assumption; it has been made for many types of disorders, alcohol abuse and dependence among them. For example, it was often assumed that among people who abused alcohol, what we knew to be effective or what we knew to be the patterns of alcohol abuse and dependence in men would extend to women and that has turned out largely not to be the case.

The National Institutes of Health (NIH) only recently began to say it is no longer an acceptable practice to restrict samples only to men, unless you have a very good reason for doing so. I don’t remember when that new rule came into effect but it was within the last decade. So, it is a fairly recent recognition that women are different and need to be accounted for in these types of studies.

In part, the assumption that males are much more likely to be pathological gamblers was bolstered or supported by stereotypes. I will talk a lot in the next hour and a half about stereotypes- how we work with them and think about them and use them both in research and clinical practice. One of these stereotypes is that gambling is generally a male disorder. This stereotype is probably still believed. Now I don’t know if you could necessarily refer to this group as ‘gentlemen’, but gambling was generally considered until fairly recently a gentlemen’s game, and generally took place exclusively within all-male groups. This picture is kind of interesting and it epitomizes the situation with lots of different kinds of potential problematic behaviors. You’ve got alcohol drinking, firearms, tobacco and pokers chips as well. So it’s a potentially explosive situation!

The gambling-gender question is sort of the epitome of this stereotype. Women were not thought of as gamblers, or as potential gamblers, or problem gamblers. The problem seems to be both that women are different from men and not all women are alike. The second part of this statement seems to be particularly problematic for many of my male colleagues, among whom
this particular stereotype exists. Its implications influence how we think about gambling as a public health, community, or clinical problem.

Women may—and I am using speculative language here because the state of research on this issue is quite young---much of this information is very preliminary in its stages--but, the fact that women operate differently than men and that they react differently than men implies that there may be different rates of gambling between genders, women may gamble for different reasons than men, and women may gamble in different amounts or types than men. They may also run a different risk for developing problems related to gambling than men, or present a different clinical picture once they manifest a gambling problem. They may exhibit a certain symptom more than men or exhibit symptoms differently. We do know from the treatment-seeking literature that women are more likely to seek mental health treatment than men, to seek it at an earlier stage of disease than men, and in many cases respond to treatment differently than men. So all of these things can have an effect on what we see, and can have important implications, both from a clinical and a public health point of view, on how we think about policy and practices related to gambling.

One result of these findings is the development of “Responsible Gaming Guidelines” which a number of people have begun to embrace. To this end, the Food and Drug Administration (FDA) recently came out with responsible alcohol guidelines that are gender specific. They have officially published health related guidelines indicating that men should not drink more than three drinks of alcohol a day and women should drink no more than two drinks of alcohol a day. These are considered guidelines for the healthy use of alcohol.

Some people have suggested that since gambling is clearly here to stay, we need to deal gambling issues at a public health level and from a policy perspective we need to develop responsible gambling guidelines. I don’t think anyone has moved down that road in any significant way yet, but it has definitely been suggested as a possibility. Gender difference in this context can have an impact on how we want to target prevention: whether we decide to target people at different ages, what types of prevention efforts might be more or less effective, and if any of these interventions ought to be gender specific. Furthermore, there could be implications for screening, diagnosis, and treatment of gambling disorders.

One of the problems with generalizing from the gender research done thus far is that it sometimes gets translated into people wanting to do women-only research. This is as much a problem as doing male-only research, because if we are asking if a behavior is gender specific, we want to know whether or not the female experience is significantly different from the male experience. In order to answer that question, you must examine the behavior in men and women. Accordingly, Marc Potenza and I have been trying to make comparisons across gender, not just trying to take behavioral slices from one gender or the other.

This research is in a fairly early stage, but I can summarize what we can say about gender
differences with some amount of confidence. First of all, when we talk about lifetime rates of gambling, we are not talking only about problem gambling, we are talking about any participation in gambling. To this end, lifetime rates of gambling are lower in women than they are in men in all age groups. Lifetime rates are very high in men, about 80%-88%, while 83% of women will say they have gambled at least once. Time trends are showing, especially during the last two to three decades, that the gender gap is narrowing: in the early ‘80s, the difference in rates between men and women was about 15%; now it is down to 5%. Trends of a narrowing gender gap have also been seen in many other types of disorders, including alcohol use and abuse, drug use and abuse, and nicotine use and abuse. Rates of gambling are rising, particularly among elderly and adolescent women. This pattern is not unique to women: rates are rising among elderly and adolescent males as well.

Let’s talk about the risk of developing pathological gambling (PPG). This term represents the higher end of the clinical spectrum, the more severe problem. Women represent about 32% of PPGs in community samples. In those community samples, prevalence rates of PPG are a little over one percent, occasionally approaching 2%. In community samples, if we have fewer than 2% of people meeting criteria for problem or PPG gambling, about 32% of them will be women. So women, at least cross-sectionally, appear to be at lower risk for developing problem gambling than men. By contrast, when you examine treatment samples, you typically find that about 40%-45% of them tend to be women. So although women are likely to be at lower risk for PPG, we need to remember that we need longitudinal data to confirm this finding because the cross sectional data suggest women may be at lower risk for development of problem gambling. But women are thought to seek treatment earlier and/or at higher rates than men, thus explaining their apparent over-representation in treatment samples.

There is a concept in the alcohol literature, “telescoping,” which has been fairly well documented: women start drinking alcohol and start gambling on average later in life, but if they are going to go on to develop alcohol abuse and dependence or problem and PPG gambling, they do so more quickly than men do. In the alcohol literature this phenomenon was originally thought to stem from biology, because women are known to metabolize alcohol differently from men, to drink different amounts of alcohol, and to have different biological responsivity to alcohol. These explanations for “telescoping” by women who abuse alcohol are actually starting to be re-considered in the case of gambling because, with gambling, there is no ingestion of a substance, so while the purely biological hypotheses may still hold to some extent, they probably are not the exclusive reason why telescoping happens.

In terms of “triggers” or etiological factors, the research is very preliminary, largely based on case studies and anecdotal data, so it needs to be replicated in larger community samples. But at least in clinical samples and in case studies, it’s been reported that women with problem and PPG gambling report that they are more likely to gamble to escape stressful situations and relieve feelings of depression, anxiety, or other negative emotions. Men are less likely to report their motivation for gambling to be emotional distress: they are more likely to report that they are
trying to win money, or want entertainment, or engage in a social activity, or the excitement of trying to beat the dealer. So it is possible, if this apparent difference holds up in larger studies, it would have some important implications for handling how people respond to triggers, how to identify triggers, and how people can be helped to prevent relapse.

By now, it is fairly well documented that women tend to prefer non-strategic games as opposed to strategic games, although it might be a good idea for us to re-think the definition of ‘strategic’ since Bob Ladouceur’s talk. We may now believe the only strategic game is poker. Traditionally, in the literature, poker has been considered a strategic game and this has been the only game entered into that category. Strategic games are ones in which you have some ability, albeit small, to affect the outcome by either knowing the rules better or being a better player. Non-strategic games are ones that are purely chance games. Women tend to prefer non-strategic games like slot machines and bingo. Men tend to prefer strategic games, such as competitive card games like poker.

This apparent difference could be explained by a number of factors; again, the hypotheses around why this phenomenon might exist will likely promote gender stereotypes. But if you think about these familiar stereotypes, especially that men are more aggressive than women, then it makes sense that they would prefer strategic games, which are a more aggressive game than non-strategic games. There may also be possible issues related to the effects of gambling on mood as well, in terms of how they affect mood differently in men and women.

So that’s a very brief summary of the little we know about gender differences in problem and pathological gambling. Obviously, a lot more needs to be done. We have now been thinking about the issue of recreational gambling in relation to gender differences in PPG. To this end, more than 84% of the population reports that they have gambled sometime in their lives. Thus, gambling is a very common behavior. However, only about 2% or 3% of the population that gambles goes on to develop serious clinical problems. So there is a wide range of people who are ‘recreational gamblers’. They are able to gamble without exhibiting or reporting any signs of problems. We know there’s a very extensive literature on the negative health aspects of problem and pathological gambling, and we know that those folks have high rates of alcohol abuse, depression, suicidal ideation, and personality disorders; which is not particularly new. But what is also starting to suggest itself is that recreational gamblers also show elevated rates of these problems.

What does this mean when we consider people who don’t gamble at all? Clinically, we identify five symptoms as a diagnostic threshold for pathological gambling; that definition is very helpful for defining terms consistently and for allowing us to speak to each other in common terminology so we have consensus on what PPG looks like. However, that doesn’t mean that if someone comes into your office demonstrating four of those symptoms, you are going to conclude they don’t have a problem. In other words, it’s important to recognize a continuum of gambling behavior, including a continuum of symptoms. Accordingly, you can have a
continuum ranging from very occasional gambling to very consistent gambling with no reported problems, as well as consistent gambling that is starting to show a small impact progressing to even more involved gambling that gets into serious health and social problems.

There are multiple explanations for the apparent association between recreational gambling and negative health outcomes. The important thing to remember is that those associations are completely cross-sectional. By this I mean we typically gather our data by going to a group of people and asking them about their gambling behavior and how they feel about it? We ask how they are doing and how they are functioning. We ask those things at the same time. We now have the chicken and egg problem. We don’t know whether gambling came first, followed by negative feelings, or whether negative feelings came first, precipitating problem gambling. We don’t know which one came first, and we don’t know whether they are even related to each other at all. Three possible explanations for this association come to mind and they are not mutually exclusive: they both could be operating in the population at the same time. One is that gambling, as a recreational activity, is attractive to people who also have a propensity for other types of negative health outcomes, like alcohol abuse or depression. The other possibility is that gambling may have consequences at lower levels, so one may have a certain type of personality that makes gambling attractive to the person. While the personality trait doesn’t cause gambling, it may be associated with the desire to gamble. Or gambling, at lower levels, nonetheless, has a negative impact on health. And both of these dynamics could be operating at the same time to produce these consequences.

In light of our view of gambling disorders as lying along a severity continuum, with one end of that continuum anchored by sub-threshold gambling problems, it is notable that my colleague Marc Potenza has started to see different patterns of negative health outcomes in men and women at lower levels of gambling. In an unpublished study, we found that among recreational gamblers in the community, women gamblers were more likely to be depressed than women non-gamblers. That finding is not true of men. On the other hand, male gamblers are more likely to be drinkers than non-male gamblers, which is not true of women. What we have started to see are gender differences suggesting that low level recreational gambling means something different for women than it does for men. You can approach this issue in a variety of ways. Marc Potenza is a psychiatrist and I am an epidemiologist, so we have been looking at rates of other types of psychiatric problems comparing men and women with gambling behaviors and gambling problems. But you could also approach this from other directions. For example, one might want to explore personality traits or other factors explaining why some types of gambling might differ across gender in their appeal.

Or, from a sociological perspective, how do we view female gamblers differently from male gamblers? What does it mean to be in our culture today and be a gambler: Do we think of women differently when we know they are gamblers, especially if they are consistent or frequent gambler?
We came at this issue unconventionally, based on the fact that we were seeing higher rates of depression in women who were gamblers and higher rates of alcohol use in men who were gamblers. We coupled those findings with anecdotal evidence that triggers for gambling in women with gambling problems were reported to be more emotionally laden. In turn, this led us to the current study that I am going to review during the rest of this presentation.

Data from this study came from the National Epidemiologic Study of Alcohol and Related Conditions (NESARC, Grant, et al. 2004), a large national study of United States adults that over-sampled young people and certain ethnic groups. It was specifically interested in accessing alcohol use and abuse in the United States and its related health effects. Specifically, it over-sampled 14- to 24-year-olds so it would have large enough samples of college and high school students. It also over-sampled black and Hispanic households because they are generally underrepresented in community sample. The NESARC study has a sample size of 43,000 respondents, it was funded by National Institute of Alcohol Abuse and Alcoholism (NIAAA) and National Institute of Mental Health (NIMH), and it is ongoing. The data that I will present here are from Wave One; the same 43,000 folks will be re-interviewed repeatedly over the course of several years. The NESARC study utilizes its own diagnostic instruments to assess most DSM-IV Axis-I and Axis-II disorders.

The NESARC interview is very long. It takes between two to two-and-a-half hours to conduct, so you can imagine the cost of this survey of 43,000 people. The interview includes a structured clinical diagnostic instrument, so it can be administered by lay interviewers with training in that instrument but without extensive clinical training.

Here is the list of the Axis-I and Axis-II disorders that were assessed (referring to slide ##). You might notice that borderline personality disorder (BPD) is not on this list, even though it is a personality disorder that many think of as particularly “feminine.” Furthermore, BPD might not be included because there is some controversy over the diagnostic term. But I was disappointed; I would like to see what happened with BPD if it had been assessed. Furthermore, I also think there were a couple of problems with the survey instrument: first of all the instrument didn’t have sufficiently strong reliability to assess accurately BPD; and because of the restrictions which accompanied such a long interview, the surveyors couldn’t do everything, so they had to pick and choose which diagnostic labels they wanted to study.

The PPG section in this interview uses the DMS-IV criteria for problem and PPG. I will just run through these very quickly, since most of you seem to be fairly knowledgeable about them. The criteria include being preoccupied or spending a great deal of time thinking about gambling, planning gambling trips, or reviewing past episodes of gambling; tolerance which is the need to play either more and more frequently, or betting larger and larger amounts of money in order to get the same excitement out of gambling; repeated failed attempts to cut back on gambling or to quit; feeling restless or irritable when prevented from gambling for whatever reason; reporting that gambling relieves feelings of depression, and anxiety; “chasing,” which involves returning
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to the gambling venue the next day to try to recoup the money lost the day before; lying or cheating, and stealing to fund gambling behavior; having experienced a significant role loss such as losing a job, a loved one, a work opportunity, or a school opportunity because of gambling; and finally, relying on others to provide money to relieve gambling debt. DSM-IV requires at least five of these criteria in order to merit the diagnosis of pathological gambling.

We were interested in our study in thinking along a continuum of signs of gambling behaviors, by not just thinking that the magical number was five and any number of symptoms below that number was irrelevant. We were especially interested in the group of recreational gamblers who may show few signs of a problem. Therefore, we divided the entire group into four groups. They included 1) non-gamblers or low frequency gamblers; in this survey the threshold for gambling was least five times in a single year anytime in one’s life. That could be five lottery tickets, or it could be going to the races five times; 2) low-risk gamblers who gambled more than five times in their lifetimes but had reported no symptoms of pathological gambling in the previous year; 3) “at-risk” gamblers, who reported one or two symptoms; and 4) “problem/pathological” gamblers who reported three or more symptoms.

Now you might ask why we didn’t use the threshold of five symptoms; the answer is that in a sample of 43,000 people, there were only a hundred and seventy-nine people who met the diagnostic criteria for pathological gambling. So we couldn’t separate out them as an independent group, and instead lumped them in with the problem gamblers. So, with this cut-off, the highest threshold was three or more reported symptoms.

The scientists in the room will understand why we introduced a number of variables into the models to make sure what we were seeing could not better be explained by other factors. Accordingly, we put into models the available socio-demographics characteristics that we had, which included those I have already mentioned. Let me give you an outline of the sample. I also want to note that these are all highly significant results which reflect the power of a sample of 43,000. Accordingly, a 2% difference is really a 2% difference. It doesn’t make it more important that it is statically significant. These numbers reflect the U.S. population, which is what it was intended to do. The women in the sample are slightly less likely to have had a college education or more; less likely to be working full time; less likely to be married at the time of the interview; a little bit less likely to report their race as white; and slightly more likely to report their race as African American. This survey sampled households and then picked a person from the household to interview; they were over-sampling African American and Hispanic households, and in many of these household the primary head of household available was female, more likely in the African American and Hispanic than the white households. So that’s a probable explanation for that finding. I don’t know whether the same finding would hold at the national level. The women were two years older, on average, than the men and made significantly less income.
If you look at the rates of psychiatric disorders reported by these folks, the rates in this sample are not way off compared to what we know about the rate of psychiatric disorders in this country. The women in the sample are much more likely than men to meet criteria for major depression; these, by the way, are past year diagnoses, not lifetime diagnose. The women were more likely to meet criteria for dysthymia, equally likely for mania, equally likely for hypomania, also significantly more likely to have panic disorder, social phobia, simple phobia, and generalized anxiety, much less likely to meet criteria for alcohol abuse or dependence, and less likely drug abuse or dependence. The women were less likely to meet criteria for nicotine dependence. And for PPG, the rates at the 5+ symptom level were 0.4% for women and 0.7% for men. It is important to note that these prevalence estimates are lower than estimated rates reported by Howard Shaffer and others who have done meta-analyses of all available studies. It appears the rates from this study on other psychiatric disorders are also slightly lower than those from other national samples. I’m not quite sure what this means; perhaps it is a measurement issue, although the differing rates are not so far off that we are particularly concerned about them.

The first thing we did in our analysis was to look at the association between psychological disorders and gambling in these four groups of gamblers: from non-gamblers, to low risk, to at risk, to way at risk. Without exception on all twenty disorders, the constant association was that, as the gambling behavior became more severe, the rates of psychiatric disorder went up. For example, rates of alcohol abuse and dependence were 6.7% among non-gamblers; they increased to around 12%, 23%, and 30% as gambling problem severity increased. So by the time you got to the people with three or more symptoms of problem/pathological gambling, fully 31% of them met criteria for alcohol abuse or dependence. That was the first run.

Now, knowing those findings and knowing also that as gambling increased, psychiatric co-morbidity increased, then the question became “Is that a phenomenon that is equivalent among men and women?” Is that association the same among men and women? Accordingly, we wanted to test whether or not the association between psychiatric disorders and gambling problem severity across this spectrum differed by gender.

When we undertook this analysis, we found two different types of associations. We did not have a completely consistent finding. The first type of analysis that we undertook compares these three groups of gamblers to the non-gamblers, so the non-gamblers are the reference group. These data show that, among the low risk gamblers, the odds of having major depression in the past year are barely different from non-gamblers; moreover, they are not different between men and women. However, as you move up in the risky gambling behavior continuum, the rates of depression among women increase markedly while the rates of depression among men flatten out. So, in this case, we find that women demonstrating at-risk and pathological gambling have a much higher likelihood of being depressed than men.

This was the second type of association that we found. It is an association where the difference between men and women was seen only in the middle group. At both lower and highest risk, we
found no difference between men and women in rates of dysthymia. But in the middle risk group, specifically in the at risk group, women were more likely to report depression.

Our findings for panic disorder were quite similar: at low gambling risk, we found no gender difference, but as gambling risk increased, we found higher rates of depression. These findings were notable for being associated with alcohol abuse and dependence as well as pathological gambling. This situation revealed differences between men and women up only at the highest level of pathological gambling. As women increased their risk of pathological gambling, rates of depression and alcohol abuse showed consistent increases; among men, however, the latter rates fell off at the most severe gambling levels. A colleague of mine, who happens to be a recovering alcoholic, speculates that once men get to high levels of alcohol abuse, they don’t leave the house, and so are less likely to develop gambling problems. I have no idea whether that’s a plausible explanation or not or why it would be in any way different for men than women, but it is an intriguing explanation. We also failed to find a difference between men and women in nicotine dependence. The rates of nicotine dependence go up as the rates of gambling and severity of gambling problems increase, but those increases are comparable for men and women.

It has been reported in the literature that of all the personality disorders that have been examined with respect to pathological gambling, anti-social personality appears to be one of the most frequently examined diagnostic category. Rates of this personality disorder are high among individuals with PPG problems but, in this particular sample, it doesn’t seem to be related to gender. This was the only personality disorder with a significant relationship to pathological gambling among all of the other personality disorders, but no gender difference was revealed.

Let me summarize what we have here. The odds of also having a psychiatric disorder were almost universally higher among women gamblers than among male gamblers. That’s the first important finding, because it means that risk of co-morbidity is different for men than it is for women. The second important finding is that the gender differences are particularly apparent in the middle gambling group – the at-risk gamblers. It was the middle group that showed differences between women and men the most strongly.

To return to our initial question: Is gambling more pathological in women? Does gambling behavior in women mean something different than it does in men? Specifically, are women in the at-risk group at higher risk in terms of negative health states? The data seem to support this conclusion, but we want to rule out as many alternative explanations as we can.

One of these issues is associated with the veracity of the measurement of these associations. How did you measure things? The measurement was done similarly in men and women. It’s not a clinical assessment, so it’s not being filtered through a clinical filter that may assess men differently than women. The assessment relied on the self report but it’s not truly self report: The survey asked whether respondents had a diagnosis or had been diagnosed with something. The same associations were also observed in the general population, so there was not a bias
associated with treatment seeking. Thus, if this study had been done with clinical populations, findings might be completely different, because women get into treatment at a different point in their disorder for different reasons than do men, and that could affect the associations that we saw. But this survey tapped a general population sample, not a clinical one, so we don’t have the bias of help seeking to deal with. And so we conclude that the higher rates of psychopathology among the at-risk female gamblers may lend credence to the notion that gambling in women may indicate something different than gambling in men, especially in relation to physical and mental health.

I have been trying to come up with an analogy that would frame these findings and have come up with Katherine Hepburn. Ms. Hepburn, in the 1930’s before she was even known as a star, started to wear pants at a time when women wearing pants in public was highly unacceptable. When Katherine Hepburn put on pants, it told us something about her. It told us who she was, and in a sense something about what kinds of risks she might take, for example, the risk of having a long term affair with a married alcoholic with a vicious temper whose name was Spencer Tracy. So it was not that wearing of pants was somehow pathological in and of itself, but it told us something about her which suggested areas of behavior that might be important to health.

So, to a certain extent, what I’m arguing here is that gambling behavior in women tells us something about who they are in ways different from what gambling behavior in men tells us about them. I would also argue that what their gambling behavior tells us about women differs as a function of the age of the women. Thus, in adolescent girls, for example, an adolescent who is going to the casino, or buying lots of lottery tickets, or participating with a group of boys in the Thursday night poker game, is telling us something about what other problem areas we might want to be thinking about. She’s probably using alcohol. It’s likely we would want to look at nicotine use.

When an elderly woman gambles, it tells us something completely different. We’ve actually been finding, to our surprise, that the elderly who gamble report that their health is better than do elderly folks who don’t gamble. This finding is probably explained best by assuming that older folks who are healthy enough to get out of house to gamble are the ones reporting gambling. So it’s not that gambling is good for your health, but that people who gamble are healthier to begin with. However, it also means that an 80-year old woman who goes to play bingo may be healthier, more socially engaged, and able to get up and go out. On the other hand, it doesn’t tell us whether she is more likely to be depressed or abusing alcohol or experiencing anxiety problems or other types of mental health issues.

It’s important to keep in mind that this is a bit of a shifting target. In the twenty-first century, it tells us nothing to see a woman who wears pants in public, because we have a different set of social constraints and a different set of ideas of what is appropriate and what is not. Similarly,
gambling may change over time, especially as it becomes more widespread and more socially acceptable, and as the stereotypes of male and female gamblers change over time.

What I would like to do in the last few slides is to throw out a few things for you to think about and for us to discuss. These are not particularly scientific thoughts; they are more about what the implication of these findings might be, especially how, as clinicians knowing these results, you might approach patients differently in terms of their thinking or approaching gambling as an issue. “Why is gambling in women severely criticized when it isn’t as much in men?” Gambling is about taking risks; there are issues about taking risks; and there are men and women who think differently about taking risks. Again, getting back to stereotypes around aggressiveness or impulsivity, men and women may approach the excitement of taking risks differently. Gambling also involves money. Money and women and gender stereotypes get very tangled up in each other, so thinking about how we approach this issue, and thinking about women who spend large amounts of money gambling, compared to men who spend the same amount on gambling, is revealing.

For example: William Bennett spent, I don’t know how many millions of dollars, gambling. Could you compare that loss to Condoleezza Rice losing that same amount of money gambling? For Bill Bennett, it was like, I’m a good old boy, I can afford it, everything is O.K.; in other words, glossing right over it. I am sure there would have been a very different response had a woman, even a prominent woman, lost the same amount of money. Of course, those types of responses and stereotypes are internalized. We internalize them, other people internalize them, and we judge each other through all of our various types of cognitive filters that tell us how we are as human beings. They affect how we interact with each other. Those stereotypes are impossible to avoid, so the things that we think and the way we respond to those types of stimuli are, in part, filtered through them. So this may be one reason why these results are showing up in our data.

In thinking about the clinical implications of our findings, one really important thing is comorbidity. Comorbidity in these groups is incredibly high; higher than many people suspect. Pathological gambling has a fairly low prevalence rate, 1% or 2%, so it is often not on the radar of mental health professionals, unless it becomes a really big problem. Because comorbidity rates are so high, even at the lower rates of gambling, gambling is an important behavior that probably should be asked about. It doesn’t mean that every person who gambles has or is going to develop a comorbid problem and it doesn’t mean that just because you do gamble there is a problem. It does mean that, on average from a clinical point of view, if we start asking about gambling behavior in mental health settings, it may well pay off by increasing the numbers of people that could benefit from some intervention.

Our data results also suggest that how we decide to intervene may be different with men and women. And that intervening at an earlier stage of the process in women may be an important thing to do, both because of the telescoping effect, where you have a shorter time-window in
which to grab people and try to head them off the pathway to more serious problems, and because response to treatment may differ between men and women.

There are many things we still don’t know, of course. There are very complex interrelationships between social contexts and social acceptability of gambling, financial constraints, the accessibility of gambling in various forms, psychological factors, and biology. And all of these complicated interactions need to be studied more thoroughly. It’s very important to note that, up till now, the vast majority, not all, but the majority of our research, is cross-sectional, so it represents a single snapshot in time. We need more longitudinal data to see how things take place over time so that we can really know what comes first and what impacts and outcomes appear over time. And that will include looking at gender issues and the progression into and out of the problem of pathological gambling.

Audience Question: Why do we see this telescoping in women?

Speaker Dr. Rani Desai: I have never read any good explanations for the phenomenon. I think that there may be biological reasons for telescoping. I can think about it in terms of brain function and how people respond to stimuli and that sort of thing. But one of the things in the literature that does intrigue me is that slot machines in particular or other non-strategic games are very fast paced games, and appear to be more addictive than other types of games that are slower or more strategic or competitive. That may be the intermediate reinforcement sort of framework. But given that women report that they prefer to play non-strategic games, it may be that responding to the stimuli and intermediate reinforcement of these games is all tied together and puts women at risk. Thus, this may happen not because women necessarily are different than men, but because they prefer those types of games, so they are playing them more. In this light, it’s not necessarily the biological difference between men and women, but a difference of opportunity, in that women are getting a different set of stimuli and those may be more addictive. I’m sure it’s not that simple, but it may be one possible pathway that might explain this. Keep in mind that with gambling we don’t have an ingested substance, we don’t have a “true” biological basis. But there may be gender differences in biological responses to the excitement of gambling. There are MRI studies starting to be done that are going to explore this, but I am not sure we really have any definite answer on that yet.
Gender Differences in Gambling and Gambling-related Problems

Rani A. Desai, PhD, MPH
Marc N. Potenza, MD, PhD
Yale University School of Medicine
Department of Psychiatry

Why Study Gender Differences?

- The majority of gambling research has been conducted on samples either exclusively or primarily male
- Assumptions have been made that results found in men would naturally extend to women
- This is partially because gambling was considered a ‘male’ behavior and problem gambling a ‘male’ disorder

The problem is…

Women are different from men

Not all women are alike

(Surprise!)

What this means with respect to gambling is that…

- Women may gamble at different rates, for different reasons, and in different amounts or types than men
- Women may develop gambling-related problems differently than men, or manifest such problems differently
- Women may seek and respond to treatment differently than men

All of these things have implications for the development of
- Responsible gaming guidelines
- Prevention efforts
- Screening and assessment
- Diagnosis
- Treatment
### What DO we know with some confidence?

- **Women gamble less than men**
  - Lifetime rates of gambling are lower in women than in men, in all age groups
  - However, time trends show that the gap is rapidly closing
  - Rates are particularly rising among elderly and adolescent women

### Risk of PPG

- **Women are less likely to develop problem or pathological gambling (PPG) than men**
  - Women represent about 32% of all pathological gamblers in community samples
  - They represent 40-45% of those in treatment for PPG
  - So, they probably are at lower risk for PPG but seek treatment earlier or at higher rates than men

### Course of illness

- **Women begin gambling later in life than men, but develop gambling-related problems and PPG faster than men**
  - This is a phenomenon known as telescoping, and it is found in other addictive disorders such as alcohol abuse/dependence

### Triggers

- **Women are more likely than men to report that they gamble in order to**
  - Escape stressful life situations at home or work
  - Relieve feelings of depression, anxiety, loneliness and guilt

### Types of gaming

- **Women tend to prefer non-strategic games such as bingo, slots**
- **Men tend to prefer strategic games such as sports betting and competitive card games**
- These differences may be explained by a diverse range of factors, including effects of gambling on mood, sensation seeking, or aggressiveness

### Recreational Gambling

- **Although negative health measures are more strongly associated with PPG, the same associations have been observed among recreational gamblers**
- **What does this mean?**
  - Gambling lies along a continuum
  - Gambling attracts people with a propensity for negative health measures
  - Gambling may have health effects even at low or recreational levels
Is Gambling More ‘Pathological’ in Women?

• This question is interesting from a number of viewpoints:
  – Psychiatry/Epidemiology: are women with gambling problems also more likely to suffer from other diagnosable psychiatric disorders
  – Psychology: do women gamblers have different (negative) personality traits than male gamblers?
  – Sociology: do we as a society judge gambling differently in women than in men?
  – Biology: is there something about the biology of the feminine that correlates differently with gambling than in men

NESARC Data

• Data for this study come from the National Epidemiologic Study of Alcohol and Related Conditions
• Large national sample of US adults, chosen through multi-stage cluster sampling, with oversamples of those 14-24 and Black and Hispanic households
• N=43,093 with an 81% response rate

Diagnostic Data

• The NESARC developed its own instruments, which assessed most Axis I and seven Axis II disorders according to DSM-IV criteria
• The instrument was a structured clinical diagnostic instrument administered by trained lay interviewers

Axis I Disorders

• Major depression
• Dysthymia
• Mania
• Hypomania
• Panic disorder
• Social phobia
• Simple phobia
• Generalized anxiety
• Alcohol abuse
• Alcohol dependence
• Drug abuse
• Drug dependence
• Nicotine dependence
• Pathological gambling

Axis II Disorders

• Antisocial
• Avoidant
• Dependent
• Histrionic
• Obsessive-compulsive
• Paranoid
• Schizoid

Criteria for Pathological Gambling (5+ sx)

• Preoccupation
• Tolerance
• Failed attempts to cut back or quit
• Restless/irritable when unable to gamble (withdrawal)
• Gambling as self-medication
• Chasing
• Lies to conceal gambling behavior
• Illegal acts to fund gambling behavior
• Significant role loss
• Relies on others to provide money to relieve gambling debt
Gender Differences in Gambling and Gambling-related Problems

Gambling along a Continuum

- Non/low frequency gamblers: never bet more than 5 times in a year in their life
- Low risk gamblers: gambled more than 5 times in a year but no symptoms of PG in past year
- At-risk: 1 or 2 reported symptoms of PG in past year
- PPG: 3 or more reported symptoms of PG in past year

Potential Confounders

- Age
- Race/ethnicity measured as non-mutually-exclusive categories of African-American, Hispanic, and Caucasian
- Education in years
- Current employment (full time, part time, not working)
- Marital Status (married, previously married, never married)
- Household income

Rates of Psychiatric Disorders by Gender

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<th></th>
<th>Females</th>
<th>Males</th>
<th>P</th>
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Rates of Psychiatric Disorders by Gender

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<td>Generalized anxiety</td>
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Rates of Psychiatric Disorders by Gender

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<td>Drug ab/dep</td>
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<td>Nicotine dep</td>
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<td>Pathological gambling</td>
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<tr>
<td>Income</td>
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<td>42.8K</td>
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Association with Gambling

• Without exception, rates of both Axis I and Axis II disorders increase as gambling severity increases
• For example, rates of alcohol abuse/dependence are 6.7% in non-gamblers, 11.6% in low-risk gamblers, 22.5% in at-risk gamblers, and 30.6% in problem/pathological gamblers

The Analysis to Test Gender Differences

• The analysis was intended to test whether the association between psychopathology and gambling differed across gender
• Therefore, we fit logistic regression models where the DV was a disorder and the IVs of interest were the interaction terms between gender and gambling, and models were adjusted for all socio-demographic variables
• Because gambling is a 4-level variable, we have three interaction terms per model

Major Depression

Dysthymia

Panic Disorder

Alcohol Abuse/dependence
Observations

- The odds of having a psychiatric disorder are almost universally higher among female gamblers than male gamblers.
- The differences are particularly apparent among the at-risk gamblers, not the low risk or problem/pathological gamblers.
- The odds increase with increasing gambling severity among both men and women.
- Rates of comorbidity are high among all gamblers, both men and women.

So...is gambling more pathological in women?

- Measurement was done similarly in men and women, so it is not clinical (or self) response to symptoms.
- The associations are observed in the general population, so we don’t have the biases of help-seeking.
- The higher pathology among at-risk female gamblers lends credence to this idea.
A Potential Framework
(Keeping in mind that all women are not the same...)

• Much like Ms. Hepburn donning pants, gambling behavior in women and girls tells us something about who they are:
  – Personality traits (sensation seeking, impulsivity, risk-taking)
  – Mood and affect (depression and anxiety)
  – Likelihood of engaging in impulsive/self-destructive behaviors
  – In elderly women it may be a health indicator

Keep in mind, though...

• In the 21st century, the wearing of pants tells us very little about a woman’s personality
• Similarly, gambling may tell us less about women in the future, as access expands and as it becomes more socially acceptable

Some Salient Thoughts?

• Why would gambling in women, especially ‘at-risk’ gambling, tell us other things about them?
  – It is about taking risk
  – It involves money
  – Frequent gamblers express superstitions or magical thought
  – PPG is conceived as an impulse control disorder

Some more thoughts

• Gambling in the United States was largely a “gentlemen’s game” until recently
• The most recent wave of opposition to gambling on moral grounds occurred at the same time as the women’s and temperance movements
• The biggest revenue-generating games (lotteries and slot machines) are preferred by women

Clinical Implications

• Comorbidity is high: mental health professionals should assess gambling behavior, and gambling treatment programs should be aware of psychiatric distress
• Intervention for gambling may be appropriate at an earlier stage in women, and prevention of progression may be more effective in women
What we still don’t understand

• The complex interaction of social context, biology, psychological factors and availability of various types of gambling on gender differences
• Differences in the longitudinal health effects of gambling, even at recreational levels
• The role of gender in progression into, and out of, problem and pathological gambling
4. Medical Treatment of Problem Gambling. Presented by Donald W. Black, M.D.

I think you will find this presentation interesting, and many of you may be surprised by my views. During the presentation I will break away and show a videotape that is highly interesting. I will ask each of you to rate the people with the scale that I use to rate gamblers in my studies. I will teach you to rate gambling severity.

Let me begin with an overview of the problem. My focus has been on pathological gambling as defined in DSM-IV by the American Psychiatric Association. This requires persistent or maladaptive gambling behaviors indicated by at least five of ten symptoms. In my practice, most of my patients have more than five symptoms. In addition, the symptoms are not better accounted for by a manic disorder. If you are familiar with bipolar disorder, occasional patients will indulge in all manner of excessive behaviors when on a manic high. This could include gambling behavior. However, in my experience I never had any difficulty distinguishing between typical pathological gambling and gambling associated with mania, which I believe is rare.

Pathological gambling is a pervasive problem and occurs in 1.6% -3.9% of adults in the US. Now in the morning session you saw different figures presented. There is a range because the various studies are conducted differently. These figures are for lifetime prevalence, which indicates whether a person has ever met criteria for pathological gambling. If you ask how many people meet criteria right now, you will come up with a lower figure. The figures may be even higher in adolescents, and Ken Winters will be discussing that.

Pathological gambling affects about seven and one-half million adults in the United States, and creates many problems for individuals and society at large. Costs are about $5 billion directly, and about $40 billion in lifetime costs for reduced productivity, social services, and creditor losses. PG is associated with crime, domestic abuse, depression, bankruptcy, and in some cases suicide. Because most of you are gambling treatment experts, you will know these facts from your personal experiences. Interestingly, prevalence increases along with gambling opportunities. I don’t believe legislators properly understand this. When you introduce a gambling opportunity in an area, such as a new casino, a certain number of people will go overboard and develop into pathological gamblers. Thus, increased opportunity increases prevalence of pathological gambling.

You just heard Dr. Nathan mention a recently completed family study. I recently finished a family study of pathological gambling, and several audience members assisted me. In these studies, we interview family members or close relatives of people who have the disorder of interest. We found that, about 1/5 of the first degree relatives of those with pathological gambling have either pathological or problem gambling. First degree relatives include siblings, children and parents; people who you theoretically share 50% of your genes with. About 20% of the first degree relatives will have disordered gambling behavior. In the control sample around
5% had problematic gambling. Thus, gambling problems run in families; if you examine those families you also find an excess of mood disorders, such as depression, and addictions, including alcoholism and drug addiction. They all seem to run together; some experts have concluded that these conditions - which are often referred to as externalizing disorders - are all connected genetically. Antisocial personality disorder also runs in these families and may be part of this spectrum.

Let me briefly address the issue of the so-called “gambling personality.” First, there is none. Second, with formal personality tests anywhere from 25% to 93% will meet criteria from some DSM-IV personality disorder. If there is a gambling personality, it is antisocial personality because from 15% to 40% will meet criteria for that condition. There clearly is a connection between gambling and antisocial personality disorder that may well be genetic. Those who have examined personality disorder in pathological gamblers also show that a person in the midst of a gambling crisis is more likely to meet criteria, because they will have more symptoms.

There are important differences between men and women. First, it is much more common in men, who have about twice the rate of pathological gambling as women. My own view is that in time women will catch up with men, as gambling becomes more mainstream. This is what happened with cigarette smoking. Second, in terms of game preference, men tend to chose sporting events, black jack, and other card games. Men prefer these action games where they may have a belief that it’s a game of skill, and they will be able to impact the result. They often report urges to gamble that are unrelated to their emotional state. Women, on the other hand, who represent about one-third of pathological gamblers, prefer non-strategic games, such as bingo and slots. And we talked about the “telescoping” process. Women start gambling later in life but their disease progresses faster than in men, so the natural course of illness for women is shortened. We see this phenomenon in alcoholism as well.

You may be interested to know what I find in my clinical studies in terms of gender split. I have two studies ongoing now. One is bupropion versus placebo; in this study 72% of my subjects are men. And I have another trial underway using escitalopram, and 67% of the subjects are men. These proportions are similar to those of other researchers’ samples.

In my recent family study, we recruited 30 gamblers who were interviewed about their first-degree relatives. Half of the subjects were women. Thus, in some samples, you might see a more equal gender distribution.

Let’s move on to treatment. When you think about it, we have a big problem in the field because effective treatments are desperately needed. Surveys have shown that 86% - 90% of adults in the United States gamble. Most do so responsibly; that is, don’t go overboard, and don’t get into trouble. That’s true for a lot of things. Think of alcohol - most of you have had a drink every now and then, but most people who drink do so responsibly. But about 10% of people who gamble develop a problem and few of them seek treatment. With pathological gamblers, only
about 8% seek treatment. Thus, most people with pathological gambling never seek help. We don’t know what happens to them because they don’t enter our statistics.

Pathological gambling is not widely recognized as a psychiatric disorder even among mental health professionals, despite the fact that it is defined and listed in DSM-IV. One speaker this morning mentioned that it’s not on the map for psychiatrists and psychologists. They may see a new patient or client and simply not assess for a gambling disorder. In my experience, few problem gamblers complain about it to mental health professionals. They seek out mental health professionals for anxiety, depression, and a whole variety of problems, while the underlying condition may be a gambling disorder. For some reason they don’t mention it to doctors and therapists, perhaps because of shame or embarrassment. This is true in my own department in that my colleagues appear not to assess patients for pathological gambling. I don’t think they realize that we have many pathological gamblers attending our clinic.

Pharmacology treatment is not a sure bet. Many of you may think that because I am a psychiatrist I advocate medication for pathological gambling. I conduct drug trials, but that does not mean I automatically recommend medication. They can helpful for some, but there is no standard or proven treatment. Much advice about medication I read in medical literature is based on anecdotal experience. For me, that is completely inadequate as a basis to make a recommendation. Treatment research is relatively recent.

Let me discuss my trial of bupropion vs. placebo. This drug trial is sponsored by NIMH. I received the very first federal grant for a medication trial for problem gambling. I assume that there have been others since then, but that was the first. We are really behind in studying effective treatments. If you look at the medical literature, there are many drugs that have been called new treatments for gambling. Experts recommend different drugs, but they tend to be based on personal experience, not a careful drug trial. So a doctor says ‘I put my patient on this drug and they did great’; they write it up, and that’s a case report. For a case series a doctor might write up his or her experience with ten patients: “I put them on this drug and they did great.” And then we have more structured and standardized approaches: open-label studies, which I get into shortly, and randomized control trials, which I will also define.

Randomized control trials, or RCT’s, are the current standard for determining treatment efficacy. And that’s true for gambling, it’s true for schizophrenia, and it’s true for panic disorder. That’s the standard. In contrast, in an open-label study all participants get the drug. My Lexapro study, for example, is an open-label study. Everyone who enters that protocol gets Lexapro. They know that. As an aside, I don’t have trouble recruiting for that particular protocol. Now, in an RCT, participants are randomly assigned to either drug or placebo; bupropion vs. placebo is an RCT. I have more trouble attracting people to that protocol because people don’t want to be put on a placebo. “I don’t want to take a chance”, they say. They enter casinos all the time, and take all kinds of crazy chances with their money, yet they don’t want chance of getting on a placebo!
Another term you should be familiar with is double-blind; that is, neither the participant nor the research staff knows the drug or placebo assignment. In my bupropion vs. placebo study, I don’t know what the patient is assigned to, and they don’t know what they on. Fortunately bupropion is very well tolerated and people have very few side effects. So I can’t tell what they are taking. Sometimes in drug studies you can tell because the drug has characteristic side effects that you can’t confuse with anything else.

I will educate you about the process that I go through with my drug trials. What is my thinking process? What are my procedures? What must I do first? First, I recruit through all media. When I got into this field about six years ago, I put small ads in the paper because I didn’t have much funding, and I didn’t spend much money. I’d call the local T.V. stations and ask if they could do a story on the study, and I could drum up some business that way. As I started to get better funding I began to experiment. I advertised in newspapers in eastern Iowa. We advertised on the radio, we had T.V. spots; many of you may have seen me on those spots. I’ve run ads at the movie theaters; before the movie starts you have to sit through one of my ads! I have advertised on the scoreboard at a University of Iowa football game. That was expensive and I received no calls. I will never repeat that! I have put advertisements over urinals in men’s room at bars; I put ads on buses. I’ve done everything I can think of. That’s what you have to do with any drug trial on pathological gambling. I will talk more about that in more detail because recruitment is a major problem in the field. Not just with me, but everyone.

So they call in, and my researcher screens them with the South Oaks Gambling Screen and other tools, and reviews the DSM-IV criteria. And when my researcher thinks she’s got a subject for me, she will arrange for that person to see me. Surprisingly, many so-called experts who give talks to major audiences never see patients! They talk about the data, but don’t know patients. But I see my own patients; that’s important because if you are going to be a credible researcher, you have to know what you are talking about. You have to understand the condition.

We consent them before doing anything further. Studies must be approved by the IRB – Institutional Review Board. Sometimes that’s an irritating process to get something approved. I haven’t had too many problems with them but they did give me some grief with my Lexapro study. Because it is an open label study, some thought I was just a shill for the drug company. I replied that this is how you start in developing effective drugs; begin with a small group of subjects, and if there is any evidence of effect, then proceed to a more sophisticated study design.

We use a variety of ratings. One that we will spend some time discussing is the Yale Brown Obsessive Compulsive Scale Modified for Pathological Gambling. I also use the GSAS – Gambling Symptom Assessment Scale. Patients fill that out as it’s a self report instrument. I also use the CGI. This is used in most every drug study and it’s a measure that I complete at the end of the appointment to indicate if the person has “no improvement”, “much improvement”, or “very much improvement”. It’s my judgment on how they are doing compared when I first saw them.
When my research assistant screens phone calls, she goes through typical gambling questions. When the person comes in for an intake interview, she hands them the GSAS to fill this out which rates their behavior over the past week. For example, if a person had urges to gamble in the past week, on average, how strong were they? This measure was developed by Drs. Kim and Grant at the University of Minnesota, and has been validated and is now widely used. Another item is: ‘During the past week, how much were you able to control your thoughts about gambling?’

Now, we are going to switch to the video. Watch carefully as we will rate this person using the Yale Brown Obsessive Compulsive Scale. {Video plays. Five minute later talk resumes.} OK, let’s start up again. The video was fascinating thing and you are probably wondering why those parents are selling their home to pay their son’s (the gambler’s) debts, and then putting him up at this motel at $600/week. Is this called enabling? I think they finally learned their lesson.

Now, to the Y-BOCS. We use the Y-BOCS as part of the evaluation of patients with obsessive-compulsive disorder; this measure was modified to be used to rate gamblers by Eric Hollander a number of years ago. Eric sees PG as related to obsessive-compulsive disorder. This is a very useful instrument. It has 10 questions; the first 5 focus on thoughts and urges related to gambling. The other 5 have to do with gambling behavior. Every time I meet with a gambling patient, I go over this with them and quiz them in detail about their gambling. With each question there are different recommended questions to ask. I will go through each of the 10 items, and you think about Gabe, from the video. We don’t have an opportunity to quiz Gabe about his gambling, so much of this will need to rest on your interpretation of what you saw in the video.

One: *Time occupied by thoughts and urges about gambling.* You ask, “How much of your time is occupied by urges and thoughts about gambling related to gambling, or gambling-related activities? How frequently does this occur?” If you look at Gabe and see how frequently he gambles, and when not gambling he’s thinking how to get the money to pay for it so he can go back, he seems completely preoccupied.

Two: *Interference due to thoughts and urges about gambling.* “How much do your urges and thoughts interfere with your social work or role functioning? Is there anything you don’t do because of this?” The rater must separate urges from the actual act of gambling because the gambling behavior has its own impact. If they are pre-occupied with thoughts about gambling it may interfere with their work or school. I’ve had many students who say they are doing their homework and then start thinking about the gambling, which interrupts their train of thought. Then they don’t get much accomplished. Or they will space out during a conversation with someone, because they are thinking about gambling. I always find this item hard to rate.

Three: *Distress associated with urges and thoughts.* “How much distress is caused by your urges and thoughts?” I think the best way to think about this item is “Does the gambler have an
emotional response to thoughts of gambling?” An emotional response usually creates very strong urges, which they may describe as a severe inner-anxiety that they must satisfy.

Four: How much of an effort do you make to resist the urges? It is assumed that it is “healthy” if the person actively tries to resist the thoughts. I always ask the patients, “Do you try to interrupt the thoughts or urges you are having?” If they say ‘yes’, I ask, “How do you do that?” They might say, “I tell myself that I can’t afford to think about that. I need to focus on my work.” It’s clear that they are trying to interrupt that train of thought. I don’t believe that Gabe (in the video) tries to interrupt his thinking pattern.

Five: Degree of control. “How much control do you have over the thoughts and urges about gambling.” When trying to interrupt the thoughts, how successful is the person? My guess with Gabe is probably not at all.

Let’s switch to the gambling-related questions.

Six: Time spent in activities related to gambling. Your scoring of thoughts and urges verses rating gambling thoughts can differ quite a bit. I’m thinking about one patient who was into the lottery. He would buy lottery tickets, and was preoccupied the whole time but he didn’t spend a much time buying the lottery tickets; thus, the amount time devoted to gambling was pretty small. With Gabe, he goes to the casino four times a week. I always include the amount of time they have to drive to the place, because with this item you are supposed to include all time and energy that goes into the gambling experience. He has to plan out his trips, so driving time would be included.

Seven: Interference due to activities related to gambling. I include in this item the money lost because money lost interferes with a life activity; they are losing needed income. It can also cause marital problems, or family problems. Clearly, in the video Gabe has a terrible family situation.

Eight: Distress associated with barriers to gambling. “How would you feel if kept from gambling? How anxious you would become?” I say to patients, “I want you to imagine what it would be like if you couldn’t gamble in the last two weeks.” They will say, “Oh Dr. Black, I couldn’t get through that; it would be terrible.” With Gabe, you can imagine how it would be; he gives us the sense that he must gamble.

Nine: Resistance against gambling. “How much of an effort do you make to resist these activities?” I don’t get the sense that Gabe resists at all. He gives in.

Ten: Degree of control over gambling behavior. “How strong is the drive to gamble? How much control do you have over the behaviors associated with gambling related activities?” This is self evident.
The scores for most people in the audience would be in the 0-2 range. The most severe patient I have seen is about 35 and most people who enter my studies receive a score of 25 – 26. So they are right in the moderate range. On the other hand after the drug trial, most of them improve somewhat, they are probably in range of 8-12. Quickly add up your scores. How many of you scored in the 30 - 40 range? How many of you scored in the 20 - 30 range? 10-20? 0-10? So, we are all in agreement that Gabe is “severe.” How many of you scored him over 35? I gave him a 39. He is one of most severe gamblers I’ve seen. I have not personally had a patient who I think is quite this sick, although I have had some who come close. How many have 40? How about 39? 38? 37? 36? I think one thing this exercise shows me that this scale is fairly reliable because we are all getting approximately the same score. This is what research studies have shown; that this instrument is actually is pretty good in terms of rating severity because most people who use it looking at the same patient will come up with similar scores.

Let’s turn our attention to drug treatment studies. Why are we even talking about medical treatment for this condition? Most of you are probably thinking that PG is a behavior problem, so why treat it medically? But there are many conditions in psychiatry and psychology that most of us would consider behavioral and yet we have effective pharmacologic treatment strategies. And biologic factors are in play here as well. Some people point to the fact that many gamblers have ADHD or ADHD-like symptoms. Many have evidence of neurological deficiency. Many have gambling running in their families, which would indicate that there might be some kind of biological input. In fact, one of Alex Blaszczynski’s subtypes that we were learning about this morning is the “biologic-neurologic” subtype.

If medication worked, it could help some people to achieve abstinence. That would be great, but it is important to remember that seeing patients on a regular basis provides structure and support which alone are essential element of treatment. There are economic considerations to providing effective treatment. If we could develop a medicine that works that would be terrific and it would probably save a lot of people a lot of money. Richard Rosenthal, an expert at UCLA who I know, said something that I think affects those of us in the treatment field, “I cannot treat a patient who failed to show up”. This is a problem with gamblers: they often do not show up.

As I looked through the treatment studies in the literature in preparation to present this material to an audience, sorting them into different categories based on the philosophical orientation of the investigator seemed to make sense. Some of them look at PG as an addiction. Many of you look at it as an addiction just like drug or alcohol addiction. Some people look at it as a mood disorder, perhaps as an equivalent of major depression or bipolar disorder. Others, like Eric Hollander, an expert in NYC, consider it similar to obsessive-compulsive disorder, so they put it in the obsessive-compulsive spectrum. Others, including me, have put it in the ADHD or impulsivity spectrum. This categorization informs us which pills we believe may work in treatment.
Medical Treatment of Problem Gambling

Some who see PG as an addiction might use naltrexone, Dr. Kim in Minnesota and his associates have studied naltrexone which is used in treating alcohol dependence. It manipulates dopamine neurons and dopamine function, and as a result reduces the subjective experience of pleasure and urge. The idea is that we increase the dopamine and we ratchet down the urges. That’s the theory. Whether it’s true or not, I don’t know, but Dr. Rosenthal writes that, someone who has been treated with naltrexone, says “The thrill is gone.”

What do the data show? We have a positive case report and an open label study that is positive as well. Remember, with open label studies, everyone gets the drug. There is also one randomized control trial where naltrexone is compared to placebo. The bottom line is that 75% improved with naltrexone and 24% improved with placebo. There are some caveats. Dr. Kim thinks that naltrexone is probably most effective in people with high urge levels. As we think of the video, Gabe would have high urges. One of the problems with naltrexone, especially at the dose Dr. Kim uses - 100 – 200 mg/day - is that there’s a black box warning in the PDR telling doctors that they shouldn’t exceed 100 mg a day because of potential liver-related problems. You could run into problems if you routinely use high doses of naltrexone and you would need to check the patient’s liver enzymes fairly frequently. Another negative effect of naltrexone is the side effect of nausea in many patients.

There is another opioid receptor antagonist that works in the same way called nalmefene, which has been studied, though nothing has been published.

Findings from a study by Dr. Kim on PG and mood disorders support classifying PG as a mood disorder. With this classification, you might select a mood stabilizer for treatment of PG. Carbamazepine is a mood stabilizer, and has been used in a single case report, where it seemed to help. There was a clinical trial in which valproate and lithium were compared. Both are mood stabilizers that we use for bipolar disorder; 68% of the valproate recipients responded vs. 61% of lithium recipients, so there was no significant difference, but most people improved. There was no placebo control, so it’s impossible to tell if the drugs are any better than placebo. Nefazodone, an antidepressant that has since been taken off the market, was found in an open label trial to produce benefit in 75% of subjects. So, perhaps it is effective as well.

Let’s move on to the obsessive-compulsive spectrum and understand why Eric Hollander and others say it’s within the spectrum. First, thoughts and behaviors of gambling often can be seen as resembling obsessive compulsive thoughts. You might say obsessions are similar to the thoughts and urges of PG, and the compulsion or rituals may be compared to gambling behavior. Certainly, pathological gambling and OCD frequently co-occur, as sometimes a gambler will have typical OCD. For these reasons, PG is often hypothesized to be part of the spectrum that includes compulsive shopping, compulsive sexual behavior, kleptomania, etc. Let’s talk about drugs used to treat these conditions. In treating obsessive compulsive disorder, we generally use selective serotonin reuptake inhibitors. These are the anti-depressant class of drugs including fluoxetine. Paroxetine is one of the most commonly known drugs within that class. In a study by
Dr. Kim at Minnesota, 61% of those on paroxetine improved vs. 23% on placebo. Now, Dr. Jon Grant, who was a resident with Dr. Kim at the time, wrote up another study from the collaborative data set. There was a multi-center trial with paroxetine vs. placebo: 59% of drug recipients and 49% of placebo recipients responded, and there was no statistical difference between those groups. Thus, we have two studies with paroxetine, one positive and one negative, so what do we conclude? The larger study was negative. A study using citaolpram was open-label, and 87% were responders, but you cannot tell how many are abstinent by the end of the study. This is true for most of the studies. I would venture to say that most of you see abstinence as a goal. That is your definition of treatment success, yet none of the studies defines responders that way. A fluoxetine study by Dr. Hollander, which is widely cited, suggests that fluoxetine is effective. This was a double-blind cross-over trial. Few of you are probably familiar with this study design. In such a trial, some get the drug, some get the placebo; after a period of time, they get switched over to the other, treatment. Thus, during the trial everyone gets the drugs and placebo. In phase one there was no difference; 75% drug and 67% placebo response. In phase two, after they were switched over, 67% respond to the drug, 29% respond to placebo. What does this mean? How do I draw any meaningful conclusions from this? What it may mean is that people respond to the drug, but that they must be on it or a while to “overcome” the placebo response.

I have a Lexapro (escitalopram) study going on. So far I’ve enrolled 15 subjects and my researcher, Martha Shaw, recently told me that 75% are rated as improved. So, my statistics are as good as the others. I find that reassuring.

What about Wellbutrin (bupropion)? I chose this drug because I hypothesized that because many people with PG have ADHD features (maybe 40% if you defined it broadly) that the drug might be effective in treating PG. We know that bupropion is effective in the treatment of ADHD. Some of you may not know this, but it is widely used by psychiatrists to treat ADHD even though there is no FDA indication for that. My belief was maybe it would reduce some of the attention deficits and impulsivity we see in these people that feed the gambling. I conducted an open label study with 10 people, and 7 out of 10 responded. So now I am conducting a double-blind study supported by the National Institute of Mental Health. I have enrolled 40 people but have no results to report.

Let’s look at other medications. Olanzapine is an antipsychotic, and the idea is that it may dampen down the dopamine system and people will have fewer urges to gamble. There has been one randomized controlled trial, and no differences were found between the drug and placebo.

Gamblers are very difficult to recruit. They are also unreliable. What do I mean by that? Well, we have a no-show rate at our intake interview, of about 40% - 50%. They get cold feet. They make an appointment but don’t show up. Or, they show up and then drop-out. Or they cancel. Now, personally they are all nice people. I have gotten along well with most; many are quite charming and intelligent. I have treated people from all walks of life, from executives all the way...
down to college students, blue collar workers, housewives; all kinds of people. Yet, there is the problem with high no-show and drop rates. As Dr. Ladouceur says, the term ‘drop’ is probably inappropriate, but I will use it anyway because in the different drug studies, authors all talk about drop rates. That is, they have enrolled into a study and are receiving medication, and then don’t show up. That’s a drop. In every study that has data, the drop rate ranged from 14% to 49%.

How do you run a drug trial if half of your subjects drop? How do we know if something is going to work if they don’t stick with it?

Is it lack of motivation? Many come in but seem to lack motivation for entering the trial other than that their wife says, “I will divorce you if you don’t do this.” And then of course there is a problem with gambling subtypes, which we heard about this morning. They don’t all fit into a nice, neat category. Some are antisocial and impulsive; others, particularly older women, seem to be bored and gamble for emotional reasons. Yet our research doesn’t really take that into account. The bottom line is that this is a very problematic study population.

I will tell you about another clinical trial I am conducting. It’s for people with borderline personality disorder. I have had no trouble recruiting these patients; they are less likely to drop out, and are easy to work with, despite their reputation for being difficult.

Another problem with gamblers is the high placebo response rate. If you look at all the studies, it ranges from 23% to 67%. This is a major problem in the field. How do you show that a drug is superior to placebo. Let’s say that you have a placebo response of 67% and a true drug response of 75%. From a statistical standpoint, you probably cannot demonstrate superiority of the drug. You would need a very large sample to show that the drug was more effective. On the other hand, you can say placebos are very powerful treatments. They work. We have high response placebo rates in other disorders. If I treat depression, 25% – 50% respond to a placebo. If I treat panic patients, 25% - 50% respond to a placebo. Perhaps it is not much different here, but my gut tells me is that it’s more of a problem with gamblers.

Another problem is with obtaining funding. As a researcher, I will have trouble getting funds from the federal government if I can’t show that I can get the subjects. They would also point to the high placebo response rate, and say that I can’t show drug superiority. For these reasons, they might deny funding. So after my bupropion vs. placebo study, I am not sure what I am going to do. If I can’t show superiority of the drug, I am likely not to get another grant. I can go to drug companies, but that’s not a good alternative.

I have decided that one problem in getting people into gambling treatment studies and keeping them in is that they like gambling too much. It’s very difficult to give up something you like. I’ve often thought the reason why my patients improve has nothing to do with me or the drug, but it has to do with the fact that I regularly monitor them. And they experience subjective shame. What do I mean by that? They come in every two weeks and see me, and my assistant Martha, and we quiz them in detail about their gambling. “How many hours did you spend?
What was it like? Where did you go? How much did you lose? How much did you win?” Over time I can tell that they are ashamed to tell me about it. I think they develop a bond with us because we have a very low drop rate. Clearly, in part, they improve because they want to please us. In that they are presenting humiliating data to us it’s like regular shame therapy. While I am not doing formal shame therapy with my patients, I think it amounts to the same thing.

Allow me to summarize. A recommendation is to understand the limits of medical therapy. Consider medicine as an adjunct. Evaluate the presence of comorbidity in determining medication and refer your client to a psychiatrist. If you are a psychiatrist yourself -- think of it this way: if there is prominent depression, I would recommend an antidepressant, and perhaps it might help their gambling too. If they have some type of obsessive-compulsive spectrum condition, again I would put them on an SSRI. For those with co-existing substance abuse, I suggest naltrexone; if they are bipolar, I would use a mood stabilizer. But the patient who only relies on medication is doing him or herself a disservice. During my trials, because of the way they are designed, they cannot participate in behavior therapy or psychotherapy, because you don’t want to confound two treatments. You do not know what works if they are getting two treatments. However, at the end of the trial, I always ask, “Have you called 1-800-Betsoff?” ‘Have you found out where the local GA chapter is?’ I always refer them to that. But I think following them closely and monitoring frequently is probably the best thing you can do for patients. You need to establish rapport with them, and use that in a positive way to keep them coming back.

What do we need to do in the future? We should support the needs for medication trials of all types. We have different types of gamblers, and I believe that in the future we will find certain subtypes preferentially respond to certain medications, but we can’t say that yet. At some point we will match patient to pill.

We need to need to solve the drop-out problem. Most investigators I know have recognized that this is an important problem. We also need to examine the effects of combined treatment. We usually tell patients the best results are obtained when you combine medication and therapy.

We need to encourage more pathological gambling research. The research situation has been disappointing in the last few years because more and more money has gone elsewhere, less money has gone to medical research and that is affecting all kinds of budgets. I think that is adversely affecting pathological gambling budgets because gambling is fairly low priority to the federal government compared to schizophrenia, bipolar disorder, major depression, etc. PG is an orphan disorder. There are a number of us who are highly interested in it, and want to get funds so we can continue to research. But it’s becoming extremely competitive. And some of the problems I outlined actually will determine whether or not I can obtain future drug treatment grants.
Medical Treatment of Pathological Gambling

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DSM IV: Pathological Gambling
Persistent/maladaptive gambling behavior as indicated by the following:
- Preoccupation with gambling
- Need to gamble in increasing amounts
- Unsuccessful efforts to control/quit
- Restless/irritable when attempting to control/quit
- Provides an escape from problem/mood relief

Pathological Gambling: A Pervasive Problem
Prevalence Estimates:
- 0.5 - 3.9% adults
- 3.2 - 8.4% adolescents/young adults
- 7.5 million adults affected

Pathological Gambling: The Price Society Pays
Pathological Gambling:
- Costs society $5 billion annually
- Adds $40 billion in lifetime costs for productivity reduction, social services, creditor losses
- Associated with crime, domestic abuse, depression, bankruptcy, suicide

DSM IV: Pathological Gambling
- After losing returns to get even ("Chasing")
- Lies to conceal extent of problem
- Commits illegal acts to finance gambling
- Relationship, job, occupational problems
- Relies on others to provide money

The gambling behavior is not better accounted for by a Manic Episode

Prevalence increasing along with gambling opportunities
Pathological Gambling: A Genetic Crap Shoot

In families:
- 20% of first degree relatives (FDRs) of pathological gamblers have PG or problem gambling
- Mood and addictive disorders are excessive
- Antisocial personality disorder is common

Personality and Gambling

- 25% - 93% of pathological gamblers have a personality disorder (PD)
- 15% - 40% exhibit antisocial personality
- PD may be unstable over time

There is no “Gambling Personality.”

Gender Differences: The Genetic Role of the Dice

Men:
- Have rates of PG twice as high as those of women
- Choose sporting events, blackjack and cards
- Often report urges to gamble unrelated to their emotional state

Gender Differences: The Genetic Role of the Dice

Women:
- Represent 32% of the pathological gamblers in the USA
- Prefer non-strategic games like bingo and slot machines
- Rapidly progress (telescoping)

Current Gambling Studies of Treatment: Gender Split

Bupropion v. Placebo: 12 Week Study
- 39 subjects
  - 28 male (72%)
  - 11 female (28%)

Escitalopram Open Label: 10 Week Study
- 17 subjects
  - 12 male (71%)
  - 5 female (29%)

Treatment: Few gamble on it...

- 86 – 90% gamble
- Fewer than 10% develop a problem
- Only about 8% of pathological gamblers seek treatment
- Pathological Gambling (PG) not widely recognized as a psychiatric disorder

Effective treatment is desperately needed.
Pharmacological Treatment: Not a Sure Bet

• No proven or standard treatment
• Most advice based on anecdotal information or personal experience
• Treatment research relatively recent

Supporting Evidence

1. Case reports, small case series
2. Open-label studies
3. Randomized controlled trials (RCT)

RCTs are the current standard for determining treatment efficacy.

Definitions

Open label study: All participants get investigational drug.

Randomized Controlled Trial: Participants are randomly assigned to receive either the drug or placebo.

Double-Blind Study: Neither participant nor research staff know the drug or placebo assignment.

Wanted: Pathological Gamblers

• Recruit via all media
• Screening
• DSM IV criteria
• South Oaks Gambling Screen (SOGS) > 5
• Consent process
• Ratings (Baseline/Follow-up)
  – YBOS
  – GSAS
  – CGI

Screening for the Gambler

• Which types of gambling have you done?
• What is the largest amount of money gambled in one day?
• How often do you return to win back money you have lost?
• Do you feel like you have a problem with gambling?
G-SAS

Intervention

PG-YBOCS:
Yale Brown Obsessive Compulsive Scale

Urges/Thoughts:
1. Time occupied
2. Interference
3. Distress
4. Resistance
5. Degree or control

Gambling Behavior:
1. Time spent
2. Interference
3. Distress
4. Resistance
5. Degree or control

Scoring on the PG-YBOCS
- 30 - 40 Severe
- 20 - 30 Moderate
- 10 - 20 Mild
- 0 - 10 Within Normal Limits
Practical Reasons for Drug Therapy: Hedging your bet

- Importance of biological factors
- May help achieve abstinence
- Can help provide structure and support to maintain treatment
- Economic considerations

"Don't miss a bet when you miss to show up." Rosenthal 2004

Pathological Gambling: An Addiction

Naltrexone:
- Evidence of effectiveness in alcoholism, drug abuse and other disorders in which urges are the dominant symptom
- Dopaminergic function has been implicated in the subjective experience of pleasure and urges
- Naltrexone inhibits dopamine neurons

Kim et al 2001

Pathological Gambling: An Addiction

“The thrill is gone!” This is the characteristic experience of the drug-addicted person on naltrexone.

Pathological Gambling: An Addiction

Naltrexone: Opioid Antagonist
- Case report, open label study, RCT
- Heightened urge may mean increased response
- Significant decline in the urge to gamble
- 75% vs. 24% improved
- Black box warning dose dependent

Double-Blind Naltrexone v. Placebo Study

Kim et al 2001
Pathological Gambling: A Mood Disorder

- Clinical features of PG sometimes resemble those of bipolar disorder (BP) and other mood disorders
- Some say that PG is caused by depression
- Frequent comorbidity between mood disorders and PG

Pathological Gambling: Obsessive-Compulsive Spectrum Disorder

- Thoughts and behaviors resemble obsessions and compulsions
- PG and OCD are frequently comorbid
- PG hypothesized to be part of OC spectrum

Pathological Gambling: Obsessive-Compulsive Spectrum Disorder

- Select Serotonin Reuptake Inhibitors (SSRIs):
  - Paroxetine
    - 61% drug v. 23% placebo improved
    - Statistically significant
  - Citalopram (Zimmerman et al. 2002)
    - 87% rated as responders on CGI
  - Fluoxetine (de la Gandara 1999)
    - Drug plus therapy vs. therapy
    - Combined treatment superior
  - Sertraline (Saiz-Ruiz et al. 2005)
    - 74% drug v. 72% placebo responders

Pathological Gambling: Related to ADHD/Impulsivity

- Bupropion (Wellbutrin SR)
  - Effective in the treatment of ADHD
  - May reduce attentional deficits characteristic of PG
  - Open label (Black)
    - 70% improved
    - Double-blind (Black et al ongoing)
Other Medications

- Olanzapine (atypical antipsychotic)
  - Case study where symptoms were lessened with switch from haloperidol to olanzapine
  - RCT: No difference drug v. placebo

Grant et al 2004

You have to know when to hold ‘em: PG Study Populations

- Difficult to recruit
- Unreliable
- High no show/drop rate (14%–49%)
- Lack of motivation
- Gambling subtypes

Bottom line: Very problematic study population

You have to know when to fold ‘em: Other Problems

- High placebo response rate
- Placebo response rate ranges from 23 – 72%
- Hard to show superiority of drug

Reflections

- Difficult for patients to give up something that they like so much.
- Basis of improvement may have to do with regular monitoring and subjective shame.

Cashing in the Chips: Recommendations

- Understand the limits of medical therapy
- Consider medicine as the adjunct
- Evaluate presence of comorbidity in determining medication
  - Depression: SSRIs
  - OC spectrum: SSRIs
  - Substance abuse: Naltrexone

Cashing in the Chips: Recommendations

- The patient who relies only on medication to improve is doing herself/himself a disservice.
- Follow closely; monitor frequently.
- Refer individuals to 800-Bets-off and Gamblers Anonymous.
Increasing the Odds: Future Approaches

- Support the need for medication trials of all types.
- Focus on subtypes: matching patient and pill.
- Solve the problem of dropouts.
- Examine the effect of combined treatments (e.g. medication and CBT).
- Encourage more PG research.

Acknowledgements

Paul Perry, Ph.D.
William Coryell, M.D.
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Kelsie T. Forbrush, B.A.
Martha Shaw, B.A.
Nancy Hale, B.S., R.N.

Thank you!

Questions?
This topic – adolescent gambling - is a bit of a sticky wicket. I get so many calls on this topic from media and parents. I used to get a lot of calls from NIH wanting me to write grants on this topic, or foundations that are getting in line because they think that this is a great public health nuisance or problem. It surely is a lightning rod for attention. There are many calls from the media where I find myself saying “We don’t know much about this issue or so-called problem,” because there’s not a lot of data. So from my talk you are probably going to come away realizing that we don’t necessarily understand what adolescent gambling is or what to make of it from a clinical perspective. But you will get a little bit more than just gambling with the talk. I am weaving in some of the new science on neuro-development and the maturing adolescent brain. I don’t know if you have read much about it, or saw the Time magazine article in May of 2004. But this emerging science says some interesting things about risk taking by teenagers and thus might have something to say about adolescent gambling.

As Peter Nathan said, I am from Minnesota. I am at the Center for Substance Abuse Research. A lot of people there helped me with the talk, putting together the power point slides, and doing the literature background. I am very thankful for their help.

I am going to try and cover four things in this talk. First, I will provide a background on adolescent gambling. Second, I will give an overview of neuro-development and adolescent risk taking behavior. Third I will address the question ‘how much does the developing brain add to vulnerability of gambling;’ and fourth I will summarize.

Let’s look at gambling by youth. Teenagers do have ready access to a lot of gambling. Informally they can play “social” games; formally there are a lot of options, legal options, although many states have a minimum age of 18 for several games. There is also great access because internet gambling is now very popular. With broadband virtually everywhere, teens are quite adept at figuring out how to play these games. A teenager can get online and play poker against five or six people if they use a credit card. So Internet gambling has added a new dimension for adolescents, as well as everyone else. We’re not sure yet how much internet gambling will change the research findings.

When it comes to minimum age in our country, we are all over the map. The legal age for alcohol is 21 and for cigarettes it is 18. Yet states vary on the gambling minimum age, as well as which games have certain ages. For lotteries, states tend to go with the younger age, so 18-year olds are allowed to play. For casinos, the greater proportion require the player to be 21-years. This indicates that there is some sentiment that more dangerous and higher-stakes games, should be restricted to older people. When states have 18 as the minimum age for casinos, it is often for tribal casinos that do not serve alcohol. Some states are thinking of increasing the minimum age,
and I do not know of any states that are thinking of lowering it. Vegas, which has 21 as the minimum age, has not seriously considered a plan to lower it to age 18. I don’t think they want to lower it because it could create a public relations problem.

Actually, though, if you are 16 and you want to bet legally, there are a few eligible states that allow bingo at this age. You probably have to bring an adult with you. I don’t think you can walk into a Bingo hall at 16 without an adult.

I get this question a lot from parents: ‘How much should I worry about my kid gambling?’ I always put this question in the context what else do you want your kids doing? What else could they be doing? And the other things can be pretty dangerous. Small stakes poker played socially with friends may not be problematic or pose that great a risk. In the context of other things teenagers do and things a parent does not want them to do, gambling doesn’t seem all that risky.

Now a little bit of a detour, the status of research on adolescent gambling is in its infancy in lot of ways. Most studies have been epidemiological and cross-sectional, which means very few are longitudinal or clinical studies. If you want to be an active researcher, go to Canada, they have a lot of research centers there. The first one listed there is Laval University in Quebec and the home of Dr. Ladouceur. He directs the main gambling research team there. And there are others sprinkled across Canada. Another is McGill University in Montreal. The McGill University research team is unique in that it solely focuses on adolescent gambling.

There are two main models for how to view adolescent gambling. I think you’ll see, at the end of my discussion, that I favor one over the other. I will label one of the models as the ‘addiction model.’ Here the belief is that adolescent gambling reflects pathological gambling. This view is that teenagers who gamble a lot show the core signs and systems of pathological gambling: loss of control, preoccupation, and several negative consequences. In order for the addiction model to fit, the diagnostic criteria for pathological gambling should be relevant for teenagers.

There have been three major assessment tools developed to measure adolescent gambling. One is called the DSM-IV-J; the J stands for juvenile so it’s as if someone tried to take DSM-IV symptoms and kiddy-ize it. Then there is the MAGS-7, which is an adolescent adaptation of the Michigan Alcohol Screen Test; it has 7 items. And then there is the SOGS-RA, which was developed by our research group. As many of you know, the adult-based SOGS is the standard screen in the field and is the dominant research measure of gambling problem severity. We revised it “downward” so that it’s suitable for youth. It has twelve items, which are based on many of the SOGS items.

There are numerous youth survey prevalence studies. Three cut points I am going to identify for you: the no problem group, the at risk group, and the problem gambling group. Some people use different cut points. Of importance is to note that our ‘problem’ group is not identical to DSM-IV ‘pathological gambling’ group; we are identifying a broad severe-end group with our cut point for ‘problem gamblers.’
With the SOGS, what have people found? The recent National Research Council’s summary of adolescence prevalence studies found rates of past year problem gambling that ranged from 1% - 7%, with a medium rate of 2.9%. I also put up the other age groups that were referenced in report. Most of these studies used the SOGS or the SOGS-RA. So you can see that the adolescent rates are bit higher than for adults. College kids probably have the highest rate for the past year. And there was some data from adolescent drug treatment samples, which have the highest prevalence rates. By the way, in adult drug treatment samples, you also get high rates, something hovering around 15%.

Anyway, we see much higher rates in adolescents compared to adults. As Dr. Black mentioned, there is a controversy about this, and I think the addiction model has to try to explain it. Why then are the rates higher? How good are the data? There have been two studies that have closely looked at this, both by Dr. Ladouceur. One thing you can do with a behavioral measure is to administer it and then make sure people understood correctly the items on the measure. Subsequently, you can then re-administer the measure to see if individuals answer the items the same or differently the second time. So this is the basic research design of the Ladouceur study. They found an initial rate of problem or pathological gambling among youth of 8.8%, which I think was based on a score of four or more on the SOGS. Then after that they interviewed the young person to make sure that the young person understood each question and that they answered the question to reflect their understanding of the item. Following this, they had the respondent re-take the test. The bottom line is that on average scores were lower at re-test by 44%. That’s a big change. Only 2% of the youth actually moved from a low score to a high score, or became ‘new’ problem gamblers. So this study “throws a curve ball” into our estimates.

Another way to examine the accuracy of these prevalence measures is to compare one of them against a diagnostic benchmark. The Ladouceur research group also did this in a study – they compared the SOGS-RA with the DSM-IV classification of pathological gambling. Here the subjects took the SOGS-RA and then they were administered a diagnostic interview that assessed each of the 10 signs and symptoms of DSM-IV PG. If the SOGS is good, you ought to get a pretty good match between it and the DSM-based measure. They got a pretty good match only when somebody scored low on the SOGS-RA. For those with a low score on the SOGS-RA, most of them did not meet DSM-IV definition of PG. So on this level, the screening looks like a decent test. It rules out cases that don’t have problems. But if you get a “red flag” or high score on the SOGS-RA, it did not match all that well with the DSM measure. Based on this study, the SOGS-RA – and measures like it – may inflate our estimates of problem or pathological gambling. The SOGS-RA officially means the South Oaks Gambling Screen-Revised Adolescent. Perhaps it should refer to the South Oaks Gambling Screen-Rough Approximation.

Another way to look at the adequacy of the addiction model is to examine the model’s external validity. That is, do we see signs in the real world that suggests we have high prevalence rates of youth problem gambling? The data indicate higher rates than for adults. We ought to see some
evidence in the “clinical world” that supports this view that there are a lot of teenagers with problem gambling. It seemed like our state of Minnesota was a good place to check this out. Since 1990, our state has an extensive helpline system which is dedicated to problem gambling, and is well advertised, and there are a lot of public awareness campaigns. We were able to get data from them because since 1999 they have monitored the nature of the helpline phone calls. Over 7,000 were fielded by helpline staff since 1999. The number of calls associated with or pertaining to adolescent problem gambling was only 14 calls. Obviously not a lot. We looked the state’s problem gambling treatment system. Beginning in the 1990’s, state-funded or subsidized treatment programs have reported into a monitoring system. There are six programs.

Since 1999, there have been over 2,400 referrals into the treatment system. Not all of them received treatment, but at least they got an assessment. There are some repeats in that group; you are going to have some returnees, so I can’t control for this. How many teenagers referred to treatment? Zero. These two data sets are provocative and may help us evaluate the validity of the ‘addiction model.’

The other model to consider is what has been referred to as the ‘problem behavior model’. This line of thinking is based on Jessor’s model of adolescent problem behaviors. It assumes that gambling is part of a constellation of problem behaviors that is highly associated with other ‘acting-out’ problems of youth, such as drug use, smoking, early sexual activity, delinquency, etc. Gambling might be a cluster member of this problem behavior domain. What about the evidence for this model? There is support from cross-sectional studies, as well as longitudinal data from the Research Institute on Addictions in New York.

My colleague Randy Stinchfield has done some recent cross sectional work in this area with large samples of middle- and high-school data in Minnesota. He included a range of predictor variables and used a statistical method called a step-wise multiple regression. This statistical procedure identifies the strongest predictor, or steps, and then it sorts through the rest of the variables and tells you how much additional prediction is contributed by the other variables. So from his results he found from steps 1 – 8, with step 1 being anti-social behavior, or delinquency, which was the strongest predictor of gambling frequency. This variable accounted for 21% of the variance of gambling frequency – a very strong predictor. When you enter maleness, this variable added 8 more percentage points of the variance accounted for. After that the other variables added negligible explained variance. In sum, the anti-social variable was far and away the most significant correlate of gambling frequency. Randy’s finding is consistent with the problem behavior syndrome model.

Also, the National Research Council summarized numerous studies that cross-sectionally looked at risk factors associated with levels of gambling involvement. The summary found that problem severity was associated with being a boy, delinquency, early onset of gambling, and substance abuse.
To wrap-up this segment: If one were to compare the two models – addiction vs. problem behavior - I think there are stronger data for the problem behavior model.

Let’s now move to neurodevelopment. Neurodevelopment research, which has been greatly aided by advances in brain imaging technology, is still at an early stage. It’s, problematic to make direct links between neurodevelopment findings and adolescent behavior, so keep this caution in mind. It’s always tough going directly from neuro-biology to behavior.

The bottom line from this recent research is that it appears that the adolescent brain is a work-in-progress. On average it looks like the youth brain does not complete neuro-development until about the mid-20’s. The brain is not fully developed by the end of childhood, as was earlier thought. Rather the brain keeps developing throughout the teenage and young adult years. And there may be some interesting things regarding this brain development that can help explain adolescent behavior.

The basics of brain development during childhood are that there is this huge growth of neurons. You get this extensive proliferation of neural connections. And then there is a reverse process, called ‘pruning’ which contributes to a loss of neurons and a reduction of brain density. The good news is when the when the pruning is complete, you have a more efficient brain. However, this pruning does not occur all at once; rather certain parts of the brain complete the pruning earlier than other parts of the brain. The region of the brain that is the relatively last to have completion of pruning is the prefrontal cortex. This is the part of brain that helps many aspects of decision making. You can think of the prefrontal cortex as the judgment center. It is the brain region that gives rise to weighing consequences, pros versus cons, and resisting impulses. It has been referred to as the ‘seat of sober second thought.’

So we have this interesting story about the adolescent brain and behavior. If you look at the big picture of this pattern of neuro-development, you can draw inferences about adolescent risk-taking. Chambers and Potenza at Yale have written a really good article looking at this intersection of brain development and gambling; I recommend this to you if you want more details about this topic.

Consider with me: does normal brain development increase vulnerability or susceptibility to adolescent gambling? I think there is some indirect support that it does. The immature brain may be more likely to take risks, suggested by the so-called lagging development of the prefrontal cortex, the judgment region. In this light, the teen brain does not give rise to optimal weighing of arousal and sober thinking. This could lead to increased risk-taking. And other factors may contribute to gambling involvement as well, such as the novelty and excitement of gambling and social and peer influences that can accompany gambling. The teen brain may be particularly vulnerable to these contextual influences.

Alright, I am going to take it up one final point here. Now I am going to ask the question “What if there were deficits in the neuro-development of a young person? Would such a young person
be at an even higher risk for problem gambling? Would you see higher rates of gambling in such individuals?”

I am suggesting that there is a neuro-developmental disorder of youth that is also associated with an elevated risk for problem gambling, and it’s ADHD. ADHD defined by DSM-IV has several symptoms that have two components: inattention, hyperactivity. Its prevalence is about 3% in the adolescence population.

ADHD looks to be a neurologically-based problem. And the neurological problem has been hypothesized to be largely a deficit in the pre-frontal cortex and characterized by behavioral dysregulation or problems with cognitive executive functioning.

We know from numerous studies that ADHD in childhood is a liability for subsequent drug abuse during adolescence. So, one addictive-like disorder has already been linked with ADHD. Dr. Russell Barkley sees the connection of ADHD and drug use like this: A teenager with ADHD sees the temptation of drugs, is unable to adequately consider some of the negative consequences, does not have the capacity or ability to self regulate and pull back from the experience, and thus gives in to the temptation to use. The teenager without ADHD has stronger self regulatory mechanisms and thus is less likely to engage in the drug using behavior. I think if you replace the drug-specific terms with gambling-specific, you can see where I am going with this discussion.

Let’s review some indirect support from the literature. If you interview adult pathological gamblers, and ask them to recall if they had ADHD as a child, you get rates from 15% - 36% from various studies. That’s a much higher rate of childhood ADHD compared to adults with other mental or behavioral disorders. Then there is a related study by a colleague of mine at the University of Minnesota, Dr. Shelia Specker. She assessed the prevalence of current adult ADHD among current adult pathological gamblers. She found that 21% of the pathological gamblers also met criteria for adult ADHD, compared to less that 1% of the normal control who met criteria for adult ADHD. The intersection looks provocative when you look at adult pathological gamblers and look for this for history or current status of ADHD. These studies are retrospective and you always have to be cautious of this type of data. Another caution is that these studies also have small samples.

I think there is some additional indirect support from the youth and young adult data.

At the McGill group, Jeff Derevensky has assessed a large sample of students with hyperactivity and ADHD scales, and gambling questionnaires. He was able to categorize them into four groups, from non-gambler to problem/pathological gamblers. I have here the mean scores on the hyperactivity and ADHD scales as a function of the gambling groups. You can see that the non-gamblers had much lower scores on the hyperactivity and ADHD scales compared to the problem/pathological gambling group. These are significant differences between these two end-point groups. These are reported as T-scores, so you are almost getting half of a standard
deviation difference on the ADHD scales between the non-gamblers and problem/pathological gamblers. Jeff also categorized the sample on ADHD. You can take the ADHD measure and with the use of a cut point, identify a subgroup of youth that meet the definition of “Probable ADHD”. This is not a formal diagnosis. In his sample, he had 231 students that met this Probable ADHD definition, we will call them ADHD-positive, and about 2,000 students who did not, or ADHD-negative. Then he showed the distribution of these ADHD groups and the gambling groups. So I am showing you here the gambling groups as they were sorted across based on the ADHD status. Among non-gamblers, 6% were ADHD positive and 94% were ADHD negative. And you can see how the rates change; for example, among the problem gamblers, 34% were ADHD positive. There was still a majority of problem gamblers that were not ADHD, but you can see how the proportion of positive cases is much greater as we look inside the problem gambling group.

To summarize, this is the first generation of youth in the United States to be exposed to relatively easy access to a variety of gambling venues, to widespread gambling advertising, and to pervasive social approval for inherently risky activities. I think it is fair to say that evidence is accumulating that youth gambling, on a continuum, and that most youth do gamble but few reveal problems. The prevalence of problem gambling is provocative but I think its clinical significance is still very debatable. I think there is a possible link between neuro-development and risk for gambling, particularly among youth with ADHD. Their neuro-developmental deficit may serve to increase their liability for problem gambling.

Thank you for your time.

[Audience Question]

**Speaker Dr. Ken Winters:** If you look at college student studies, sports betting and card playing are usually the two most popular, and you still get a large preference of gambling by the males over females. By the way, if you did a current survey of college campuses, I imagine you would see a lot more on-line gambling than you would in the prior surveys.

The college samples were at-risk more than the other age groups. And perhaps not just because of the age issue; there is more access to money, they move out of the home, so if they want to secretly engage in a temptation or indulgence it’s a little easier. This is consistent with other risk behaviors during this developmental period; alcohol use continues to peak until we finish with college. Drug use is pretty much the same. So it may be for all of the similar reasons.

I think with adolescent gambling, if you want to look at it from a public health standpoint, for many of these kids, it’s potentially laying the groundwork for a habit that may become a problem once they get some freedoms, a credit card, access to money and transportation, they can really get to casinos. A question is will we see a lot more problem gambling downstream compared to the levels we see now.
I am impressed with how much more influential neurobiology might be for developing a gambling problem. I invite you to read Barkely’s article. I am impressed with that article; I think it’s compelling. Now with the new brain imaging technology, we can learn so much more about brain structure and function.

Regarding parenting: Good parenting has two big dimensions; one is control or discipline, the other is support. And you need to be active or effective on both dimensions for optimal parenting. So it’s basically ‘tough love’. On one hand, the parent needs to be good at monitoring, setting rules, having consequences that are appropriate and consistently applied. That’s the monitoring part. A parent also has to show enough warmth, affection, and affiliation with the child so he or she feels that they can go to you when they have a personal problem, so they are getting rewarded for the good things that they are doing. And the parent can’t be over reacting to the small stuff.

Back to the issue of youth vs adult rates, I think the greatest risk period is the college–age group. We need to do more on college campuses in terms of prevention and interventions.

Thanks again.

Select References


Youth, Gambling and the Developing Brain: Intersections on the Developmental Highway

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Department of Psychiatry
University of Minnesota
winte001@umn.edu

Gambling Symposium: Beyond the Odds
Iowa City, IA
May, 2005

1. Background

Gambling: participation in games “of chance” in which a wager is placed.
- gambling machines
- lotteries
- bingo
- keno
- pull tabs
- games of personal skill
- cards
- sports betting
- social betting
- parimutual betting
- stock market

2. Trends

3. Neuro-development

4. Vulnerability?

5. Summary

Gambling in America

- 2003 - Legalized gambling estimated as $775 billion industry (six years earlier $400 billion)
- 48 of 50 states have some form of legalized gambling

Youth Access to Gambling

- First generation of youth exposed to ready access and varied gambling venues.
- Minimum legal age to place a bet varies across states, but many opportunities for 18-year-olds in the United States.
Minimum Legal Age

* Gambling and the Law, Nelson Rose, Whittier Law School

- **39 states with a lottery**
  - 37 states with 18 as legal age
  - 3 states may switch to 21

- **31 states with casinos/ slots**
  - 20 states with 18 as legal age
  - 4 states may switch to 21

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<td>Wisconsin</td>
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If you are 16 and want to bet legally, live in...

National Research Council (1999)

“Overall the committee found that much of the available research on all aspects of pathological gambling is of limited scientific value. Our conclusions are greatly influenced by a relatively small body of newer, better research that meets or exceeds contemporary standards.”

Oh Canada!

Several research programs
- Laval University
- University of Windsor
- University of Calgary
- Centre on Addiction and Mental Health
- McGill University

Progress of Research on Adolescent Gambling

Most studies: Epidemiological and cross-sectional psychosocial risk studies

Lacking: Prospective and clinical studies lacking

Models of Adolescent “Problem Gambling”

- Addiction Model
Definitions

Pathological Gambling:
Continuous involvement in and preoccupation with gambling despite resulting adverse consequences.

Other terms in the literature:
- Compulsive gambling
- Habitual gambling
- Problem gambling

DSM-IV Criteria for Pathological Gambling
1. Repeated unsuccessful efforts to control
2. Preoccupied with reliving past/planning for future gambling
3. Jeopardized social, job, career opportunity
4. Relies on others to provide money
5. Gambles to escape problems/relieve aversive mood
6. Chases losses
7. Lies to conceal involvement
8. Illegal acts to finance gambling
9. Gamble more and more to achieve desired excitement
10. Restless/irritable when cut down/stop

DSM-IV Similarities with Substance Dependence
1. Repeated unsuccessful efforts to control
2. Preoccupied with reliving past/planning for future gambling
3. Jeopardized social, job, career opportunity
4. Relies on others to provide money
5. Gambles to escape problems/relieve aversive mood
6. Chases losses
7. Lies to conceal involvement
8. Illegal acts to finance gambling
9. Gamble more and more to achieve desired excitement
10. Restless/irritable when cut down/stop

Measures

Three questionnaires with psychometrics
- DSM-IV-J (Fisher, 1992)
  - Reflect 9 dimensions of DSM-IV; 12 yes/no items
- MAGS-7 (Shaffer et al., 1994)
  - Adapted from the SMAST; 7 yes/no items
- SOGS-RA (Winters et al., 1989)
  - Adapted from the adult SOGS; 12 yes/no items

South Oaks Gambling Screen-Revised Adolescent (SOGS-RA)

Sample Items:
- Has your gambling caused any problems, such as arguments with friends or at school?
- Have you borrowed money or stolen something in order to get money to gamble?
- Have you felt that you would like to stop or reduce your betting for money but could not?

Cut points:
- no problem: 0-1
- at-risk: 2-3
- problem: 4+

How accurate are rates of adolescent problem gambling? (Ladouceur et al., 2000)

<table>
<thead>
<tr>
<th>Gamblers</th>
<th>SOGS-RA Problem/Prob. Path.</th>
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<tbody>
<tr>
<td></td>
<td>Group</td>
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<tr>
<td>Adolescents</td>
<td>8.8%</td>
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</table>

2% “new” problem gamblers at retest.

On average, 12% of items were “misunderstood.”
How accurate are rates of adolescent problem gambling? (Ladouceur et al., in press)

<table>
<thead>
<tr>
<th>SOGS-RA</th>
<th>DSM-IV classification</th>
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<td>Non-PG</td>
<td>160</td>
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<tr>
<td>PG</td>
<td>86</td>
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</tbody>
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Non-PG (n=163) 160 3
PG (n= 93) 86 7

SOGS-RA correct classification rate: 65%
(PG = 5+ cutpoint)

Estimates of Problem Gambling—Lifetime (National Research Council, 1999)

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<th>Group</th>
<th>Percentage</th>
<th>Range</th>
<th>Median</th>
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<td>&lt;1 - 3%</td>
<td>1.5%</td>
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<td>College</td>
<td>3 - 11%</td>
<td>5%</td>
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<tr>
<td>Adolescent</td>
<td>1 - 7%</td>
<td>2.9%</td>
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Estimates based on meta-analysis of surveys conducted 1988-1997 (National Research Council, 1999). Problem gambling defined in most studies by the SOGS-RA.

Estimates of Problem Gambling—Past Year (National Research Council, 1999)

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<tr>
<td>Adult</td>
<td>&lt;1 - 2%</td>
<td>0.9%</td>
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<tr>
<td>Adolescent</td>
<td>1 - 9%</td>
<td>6%</td>
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<tr>
<td>Adolescent-Drug Tx</td>
<td>9 - 13%</td>
<td>11%</td>
<td></td>
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</table>

Estimates based on meta-analysis of surveys conducted 1988-1997 (National Research Council, 1999). Problem gambling defined in most studies by the SOGS-RA.

The Addiction Model and external validity

• Minnesota has an extensive, well-funded, statewide public awareness, referral and treatment system for problem gambling. Since 1999:
  • over 7,000 calls to the problem gambling hotline ...
  • over 2,400 referrals into the treatment system.....

Models of Adolescent “Problem Gambling”

• Addiction Model
• Problem Behavior Model
Youth Problem Gambling as a Component of Problem Behaviors

Gambling Symposium: Beyond the Odds

Barnes, Welte, Hoffman & Dintcheff (1999)

Based on two longitudinal samples...

<table>
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<td>Impulsivity</td>
<td>x</td>
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<td>Moral disengagement</td>
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<td>Delinquency</td>
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<tr>
<td>Parental monitoring</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Other substances</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Variables Associated with Gambling Frequency (Stinchfield, Cassuto, Winters, Latimer, 1997)

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Beta</th>
<th>ln Mult</th>
<th>r 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Anti-social</td>
<td>.46</td>
<td>.46</td>
<td>.21</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>.30</td>
<td>.54</td>
<td>.29</td>
</tr>
<tr>
<td>3</td>
<td>Regret</td>
<td>.22</td>
<td>.58</td>
<td>.34</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol</td>
<td>.22</td>
<td>.61</td>
<td>.38</td>
</tr>
<tr>
<td>5</td>
<td>Tobacco</td>
<td>.13</td>
<td>.62</td>
<td>.39</td>
</tr>
<tr>
<td>6</td>
<td>Age</td>
<td>.11</td>
<td>.63</td>
<td>.40</td>
</tr>
<tr>
<td>7</td>
<td>Chasing</td>
<td>.10</td>
<td>.64</td>
<td>.41</td>
</tr>
<tr>
<td>8</td>
<td>Sex</td>
<td>.11</td>
<td>.65</td>
<td>.42</td>
</tr>
</tbody>
</table>

Data based on 1995 Minnesota Student Survey; N = 75,000

Among Youth with Gambling Problems (National Research Council, 1999)

- > boys (OR = 6.1 - 9.2)
- > delinquency
- > early onset (grade 6 or earlier) (OR = 2.4 - 4.1)
- > positive family history (OR = 1.9 - 3.3)
- > substance use (OR = 2.8 - 4.8)

Gambling Trends:
Shift in preference for games as adolescents age into young adulthood
Youth Prospective Study
(Winters et al., 2001)

Telephone Interviews (N = 305)

<table>
<thead>
<tr>
<th>Variable</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>gamb. freq.</td>
<td>1990 (mid-teen)</td>
<td>1992 (late-teen)</td>
<td>1997-8 (young adult)</td>
</tr>
<tr>
<td>probl gamb</td>
<td>SOGS-RA</td>
<td>SOGS-RA</td>
<td>SOGS</td>
</tr>
<tr>
<td>psychosocial</td>
<td>psychosocial</td>
<td>psychosocial</td>
<td></td>
</tr>
</tbody>
</table>

Mean Age: 15 17 22

<table>
<thead>
<tr>
<th>Variable</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>gamb. freq.</td>
<td>Mean Age: 15 17 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>probl gamb</td>
<td>SOGS-RA</td>
<td>SOGS-RA</td>
<td>SOGS</td>
</tr>
<tr>
<td>psychosocial</td>
<td>psychosocial</td>
<td>psychosocial</td>
<td></td>
</tr>
</tbody>
</table>

Problem gambling: Longitudinal view
(Winters, Anderson & Stinchfield, 2002)

N=305

At-Risk Gambling Rate - Prior Year

X² = 11.1 (p < .05)

X² = ns

Individual-Level Trajectories of Gambling Behavior
(Winters, Stinchfield, Botzet, & Slutske, 2005)

- We extended the prospective analysis by exploring developmental pathways of gambling groups.
- Each case was coded based on their gambling group status across T1, T2, and T3.
  - N = no problem gambling
  - A = at-risk gambling
  - P = problem gambling
Gambling Symposium: Beyond the Odds

Individual-Level Trajectories of Gambling Behavior

Gambling behavior: SOGS-RA/ SOGS

N = no problem gambling
A = at-risk
P = problem gambling

Cases | T1 | T2 | T3
--- | --- | --- | ---
subject 1 | N | A | A
subject 2 | N | N | N
subject 3 | P | A | N
subject 4 | P | P | P

Individual-Level Trajectories of Gambling Behavior

- The number of possible three-letter codes is 27 (3^3).
- Codes were further grouped into four mutually exclusive developmental groups.

Trajectory Groups

Resisters: no problem gambling at T1, T2, T3
(\textit{NNN})

Persistors: at-risk/ problem gambling at T1, T2, T3
(e.g., AAA, PPP, AAP, APP...)

Desistors: from at-risk/ problem gambling to no problem gambling, without returning
(e.g., ANN, AAN...)

New Incidence: from no problem gambling to at-risk/ problem gambling, without returning
(e.g., NNA, NAA...)

97% of cases were assigned to one of these groups

Trajectory Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>%</th>
<th>Majority of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistors</td>
<td>60</td>
<td>NNN</td>
</tr>
<tr>
<td>Persistors</td>
<td>4</td>
<td>AAA, PPA, PPP</td>
</tr>
<tr>
<td>Desistors</td>
<td>13</td>
<td>ANN, AAN</td>
</tr>
<tr>
<td>New Incidence</td>
<td>21</td>
<td>NNA</td>
</tr>
</tbody>
</table>

1. Adolescent gambling involvement does not reliably contribute to at-risk or problem gambling (among resistors, 97% had gambled at least once)

Trajectory Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>%</th>
<th>Majority of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistors</td>
<td>60</td>
<td>NNN</td>
</tr>
<tr>
<td>Persistors</td>
<td>4</td>
<td>AAA, PPA, PPP</td>
</tr>
<tr>
<td>Desistors</td>
<td>13</td>
<td>ANN, AAN</td>
</tr>
<tr>
<td>New Incidence</td>
<td>21</td>
<td>NNA</td>
</tr>
</tbody>
</table>

2. At-risk/ problem gambling occurs at low base rate, but when these groups are present early, they likely occur later.

- All 7 problem gamblers at T1 were either at-risk or problem gamblers at T2 and T3.
- 50% of at-risk gamblers at T1 were either at-risk or problem gamblers at T2 and T3.

3. Desistence mostly occurred in the form of movement from at-risk to no gambling
### Trajectory Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>%</th>
<th>Majority of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistors</td>
<td>60</td>
<td>NNN</td>
</tr>
<tr>
<td>Persistors</td>
<td>4</td>
<td>AAA, PPA, PPP</td>
</tr>
<tr>
<td>Desistors</td>
<td>13</td>
<td>ANN, AAN</td>
</tr>
<tr>
<td>New Incidence</td>
<td>21</td>
<td>NNA</td>
</tr>
</tbody>
</table>

4. Most new incidence cases moved from non-problem gambling at T1 and T2 to at-risk gamblers at T3

### Sources


### Keep in mind…..

- The research on neurodevelopment is in the early stages
- Too early to make direct links between human behavior and neurodevelopmental findings
- Many key human studies on youth can not be conducted because of ethical considerations

### Construction Ahead

- Adolescence is a period of profound brain maturation.
  - It was believed that brain development was complete during childhood
  - The maturation process is not complete until about age 24.

- During late childhood, neurons get bushier and increase in the number of connections.
- At about age 11 in girls and age 12½ in boys, this thickening undergoes pruning.
- At the same time, the myelin sheaths that encase nerve cells thicken.
  - Myelin sheaths are like insulation on a wire; they make nerve cell transmissions faster and more efficient
  - Net effect when complete is faster, yet fewer, connections in the brain.
Pruning occurs in stages, from back of the brain to the front.

Behavioral Implications

Sources

1. Background

2. Trends

3. Neuro-development

4. Vulnerability?

1. > risk taking (particularly in groups)

1. > propensity toward low effort - high excitement activities

1. < capacity for good judgment & weighing consequences

Does normal brain development contribute to adolescent susceptibility to gambling?

4. Hyper-active dopamine system of adolescence

- Dopamine system is more robust during adolescence than in adulthood
  - novel stimuli trigger firing of dopamine; the experience is rewarded by a dopamine burst
  - Hippocampus is highly sensitive to bursts of dopamine, which facilitates memory of novel stimuli


Does normal brain development contribute to adolescent susceptibility to gambling?

1. Risk taking (particularly in groups)
1. Propensity toward low effort - high excitement activities
1. Capacity for good judgment & weighing consequences
1. Sensitivity to novel stimuli

Does abnormal brain development contribute to heightened susceptibility to gambling?

The ADHD connection?

- ADHD as a dysfunction in the brain’s regulatory systems that manifest as a deficit in behavioral dysregulation
  - The behavioral dysregulation has been linked to deficits in cognitive executive functioning
  - The prefrontal cortex (orbital-frontal cortex) has been implicated as a source of these deficits in cognitive executive functioning (Barkley, 1997; Hurtie, Earleywine, Blackson et al., 1994)

Barkley’s theory of ADHD (1997)

- “ADHD is a dysfunction in the brain’s regulatory systems that manifest as a deficit in behavioral dysregulation. Such constraint reflects the ability to delay a dominant response, interrupt an inappropriate pattern of responding, or protect a period of concentration from external distraction. When this capability is impaired, the immediate consequence is a cascade of difficulties throughout the executive system. In the absence of executive intervention, the individual cannot benefit from previous experiences nor predict future consequences and thus becomes increasingly under control of the current context and its immediate contingencies for performance.”

Barkley’s theory of ADHD (1997) 

Link to drug use

- “Children with disruptive behavior disorders, such as ADHD, who are deficient in the use of executive functions that permit self-regulation, are unable to alter the immediate benefits from drugs. Consequently, when confronted with risk-taking opportunities, such as drug use, that promise immediate gratification (or immediate escape from unpleasant feelings or circumstances) they are more likely to relent to the temptation to engage in drug involvement.”

Does abnormal brain development contribute to heightened susceptibility to gambling?

The ADHD-PG connection: adult data (supportive)

- Strong association between path. gambling and childhood ADD (e.g., Carlton et al., 1987; Rugle & Melamed, 1993)
  - Rates range from 15 -36%
  - Retrospective data, small sample sizes, & Berkson’s bias
- Current adult ADHD (Specker et al., 1995)
  - Rate was 21%
  - Small sample size, Berkson’s bias

Does abnormal brain development contribute to heightened susceptibility to gambling?

The ADHD-PG connection: youth and young adult data (suggestive)
Association of Gambling and Dimensional Measures of Hyperactivity and ADHD
(Derevensky et al., submitted)

<table>
<thead>
<tr>
<th>Gambling Groups</th>
<th>Hyperactivity</th>
<th>ADHD Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>47.08</td>
<td>50.86</td>
</tr>
<tr>
<td>Female</td>
<td>49.49</td>
<td>53.41</td>
</tr>
</tbody>
</table>

Note: All one-way ANOVA’s significant, p < .01; nearly all SNK: NG < SG < AR < PPG

CASS-L Subscales1

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Hyperactivity</th>
<th>ADHD Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>978</td>
<td>48.41</td>
<td>50.86</td>
</tr>
<tr>
<td>Female</td>
<td>1321</td>
<td>50.09</td>
<td>53.41</td>
</tr>
</tbody>
</table>

1 Conners-Wells’ Adolescent Self-Report Scale: Long Version (Conners & Wells, 1997)

Minnesota Young Adult ADHD Study
(Winters, August & Realmuto, 2005)

<table>
<thead>
<tr>
<th></th>
<th>ADHD</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>125</td>
<td>99</td>
</tr>
<tr>
<td>Gender (% male)</td>
<td>86.3</td>
<td>69.2</td>
</tr>
<tr>
<td>Mean age</td>
<td>21.1</td>
<td>21.5</td>
</tr>
<tr>
<td>% grad high school or current</td>
<td>91.3</td>
<td>98.6</td>
</tr>
<tr>
<td>Mean IQ (KBIT)</td>
<td>102.1</td>
<td>106.7</td>
</tr>
<tr>
<td>Mean SES (baseline)</td>
<td>44.1</td>
<td>50.4</td>
</tr>
<tr>
<td>% single parent family</td>
<td>25.1</td>
<td>7.1</td>
</tr>
</tbody>
</table>

Attrition: ADHD, 87% of eligible; Comparison, 91% of eligible.

Ethnicity: 88% Caucasian

* Hollingshead, 1975, (occupation code x 5) x (education code x 3); Range 17 - 66

Prior Year Gamblers (unpublished)

<table>
<thead>
<tr>
<th></th>
<th>ADHD</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>115</td>
<td>81</td>
</tr>
<tr>
<td>Age of onset (mean)</td>
<td>13.6</td>
<td>16.9</td>
</tr>
<tr>
<td>SOGS (mean)</td>
<td>2.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Weekly/daily (%)</td>
<td>23.8</td>
<td>14.1</td>
</tr>
<tr>
<td>Lost &gt; $100 (%)</td>
<td>11.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Casino prefer (%)</td>
<td>61.5</td>
<td>21.2</td>
</tr>
<tr>
<td>Lottery prefer (%)</td>
<td>1.9</td>
<td>19.7</td>
</tr>
</tbody>
</table>

Gambling Undercontrol Scale

1. I do not worry about losing when I am gambling.
2. I like playing the lottery. (-)
3. I like games that are fast paced.
4. If I had more money, I would not use it to gamble more. (-)
5. I get bored while gambling if the action is too slow.
6. If I lose money while gambling, I can find a way to recover my losses.
7. I have a lot of self-control when I gamble. (-)
8. If I had more money I would play games with bigger stakes.
9. When I am in the action of the game, I lose track of time.
10. I plan beforehand how much I am going to spend on gambling.
11. Which would you prefer
   1. risk losing $100 but have a 75% chance of winning $200 (-)
   2. risk losing $50 but have a 30% chance of winning $10,000.
12. I like to pace myself when I am gambling. (-)
13. I like Internet gambling because I can gamble when I want to.
Summary

- This is the first generation of youth to be exposed to relatively easy access to a variety of gambling venues, widespread gambling advertising, and to pervasive social approval for an inherently risky activity. Only 20 years ago, gambling in the U.S. was primarily limited Las Vegas and Atlantic City.

Summary

- Evidence is accumulating that...
  - youth gambling occurs on a continuum
  - most youth gamble infrequently and do yet reveal problems
  - the prevalence of problem gambling is noteworthy, but its clinical significance is still debatable

Summary

- No direct evidence linking neurodevelopment and gambling behavior, but the indirect links are provocative

- Are ADHD youth at particular risk for problem gambling?

Summary

Another side:

- Can gambling involvement have positive effects on brain development?
  - Exercising areas of the brain undergoing maturation
    - hippocampus (memory)?
    - prefrontal cortex (judgment)?
    - cerebellum (math activity)?
  - Social development
    - gambling as an appropriate social activity

Thank you!

winte001@umn.edu
6. **Overview pathological gambling treatment approaches** - Anne Helene Skinstad, Ph.D. and Karen Summers, M.P.H.

Pathological gambling is classified as an impulse control disorder which presents impulsive, compulsive, and addictive symptoms (APA, 2000; Hollander, Kaplan, & Pallanti, 2004). It has been described as an obsessive-compulsive spectrum disorder within the impulsive cluster and presents similar symptoms; urges, pleasure seeking, reduction in judgment capacity; to biopolar disorder (Hollander, Kaplan, & Pallanti, 2004). Neurobiological studies have suggested that abnormalities in the serotonin, norepinephrine, dopamine, and opioid systems, which are part of reward, arousal, and impulse control mechanisms, may be involved in the etiology of pathological gambling (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005). These neurobiological findings, in addition to similarities observed in pathological gambling and other disorders, has led to the investigation of multiple pharmacotherapies for the treatment of pathological gambling (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005; Grant & Potenza, 2007). Psychosocial research of pathological gambling has primarily focused on the use of cognitive and behavioral therapies in treatment (Grant & Potenza, 2007). Despite many promising results, further research will be needed to establish evidence based practices in the field of pathological gambling treatment (Petry, 2005; Grant & Potenza, 2007).

**Pharmacotherapy**

Several classes of medication including: antidepressants, opioid antagonists, mood stabilizers, and atypical antipsychotics; have been studied for use in the treatment of pathological gambling, as they either influence one of the neurological systems found to be related to pathological gambling etiology or they have been used successfully in the treatment of another psychopathological disorder which presents similar symptoms (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005; Grant & Potenza, 2007). Results of open-label studies of these various medications have been promising, however, results of double-blind placebo controls have indicated mixed efficacy and tolerability (Grant & Potenza, 2007).

Serotonin reuptake inhibitors are have been the predominant antidepressants studied for treatment of pathological gambling (Hollander, Kaplan, & Pallanti, 2004; Grant & Potenza, 2007). These drugs are first-line treatments for obsessive-compulsive disorder, and could address compulsive and impulsive symptoms by intervening in the serotonergic system of pathological gamblers (Hollander, Kaplan, & Pallanti, 2004). Open label studies of fluvoxamine and citalopram, a case report of a double blind placebo-controlled trial of clomipramine, and a double blind placebo controlled study on paroxetine indicated significant improvement for those on the medication (Hollander, Kaplan, & Pallanti, 2004). Another antidepressent, nefazodone, which functions primarily as a serotonin receptor antagonist, but also has mixed serotonin and norepinephrine reuptake inhibitor properties, was also found to potentially be of promising efficacy in an open label study(Hollander, Kaplan, & Pallanti, 2004). However, when studied
with more rigorous study designs, no statistical significance was found for fluvoxamine or paroxetine, the only two medications which further studies have been reported (Hollander, Kaplan, & Pallanti, 2004). These studies have tended to have high placebo rates, which reduce the ability to detect the effect of the medication (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005).

Naltrexone, an opioid antagonist, has been found to reduce gambling urges and behavior in patients in a number of reports as well as in a double blind placebo controlled trial (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005). Adverse effects such as nausea, insomnia, dizziness, headaches, and elevation of liver enzymes when used with nonsteroidal anti-inflammatory medications, raise concerns of tolerability (Hollander, Kaplan, & Pallanti, 2004; Petry, 2005). Another opioid antagonist, nalmefene, is the only medication that has been systematically studied for dose-response (Grant & Potenza, 2007). This dose-response study found nalmefene to be more effective then placebo at 25 and 50 mg/day, but not 100mg/day (Grant & Potenza, 2007).

Mood stabilizers, lithium carbonate and valporate, are effective treatments for mania and have been demonstrated to be effective in the treatment of other impulsive disorders (Hollander, Kaplan, & Pallanti, 2004). In a single blind study, both lithium and valporate were found to produce positive treatment effects in non-bipolar pathological gamblers (Hollander, Kaplan, & Pallanti, 2004). Lithium has also been studied for the treatment of pathological gamblers with bipolar symptoms with positive results (Hollander, Kaplan, & Pallanti, 2004; Grant and Potenza, 2007). While studies of mood stabilizers have indicated promising results, further research is needed as studies thus far have not included a placebo control group (Petry, 2005).

Atypical psychotics have been considered for treatment of pathological gambling because of their ability to target dopamine and serotonin receptors (Hollander, Kaplan, & Pallanti, 2004). Olanzapine while found to be effective in a case study, was not found to be significantly different from placebo in a placebo controlled study (Hollander, Kaplan, & Pallanti, 2004).

While many medications have been investigated for their effectiveness in treating pathological gambling problems, none have been approved for this usage by the US Food and Drug Administration (Hollander, Kaplan, & Pallanti, 2004). In order for evidence based practices to come from the many promising findings for various medications: larger sample sizes which allow for adequate statistical power will need to be used; follow up periods will need to be extended beyond the typical 8 to 16 weeks to determine long term effects; and positive, randomized, placebo-controlled studies will need to be reproduced successfully (Petry, 2005; Grant & Potenza, 2007). There is also a need for randomized placebo controlled studies to compare different medications effectiveness, as none have been conducted to date and different classes of medication have shown potential effectiveness (Grant & Potenza, 2007).
Cognitive-Behavioral Therapy

Six cognitive distortions have been found to be related to gambling (Petry, 2005). These include: illusion of control, representativeness heuristic, misapplication of the law of large numbers, availability illusion, illusory correlation, and entrapment (Petry, 2005). Most of these cognitive distortions are related to estimation of probability, although entrapment is linked instead to chasing behavior, as it involves increasing commitment to receive the benefits of previous investments, although the return on those investments has been unsatisfactory (Petry, 2005).

Illusion of control refers to the belief that one can control or predict random events better than chance (Petry, 2005). This involves a lack of distinction between games of skill and games of chance, with the belief that frequency of play, or practice, will improve one’s chances of winning games of chance (Ladouceur, 2005). Illusion of control has been found to be related to gambling behavior in the general population, with individuals placing more value on lottery tickets they pick themselves or games where they get to throw the dice (Petry, 2005). Gambling venues play off of this illusion of control by using phrases like “Beat the machine,” contributing to the perception of competition in these games of chance (Ladouceur, 2005).

The representativeness heuristic involves judging of the likelihood of a sample based upon appearances of similarity or randomness (Petry, 2005). In general people consider identical or sequential numbers to be less probable than those that have a random appearance, although any sequence is equally likely (Petry, 2005). The representative heuristic is applied when previous coin toss outcomes are considered in estimation of the next one and when lottery tickets with seemingly random numbers are preferred (Petry, 2005). The law of large numbers states that large samples are representative of the population from which they are selected, this is applied inappropriately when small samples are considered to be representative and base rates are ignored (Petry, 2005). Misapplication of the law of numbers can lead individuals to believe that they are having a lucky night, “on a winning streak,” or that a particular machine is a “winning machine” (Petry, 2005). The availability illusion involves basing estimations on familiarity, recency, and vividness, all which are factors in ease of recollection (Petry, 2005). Availability illusion can cause gamblers to favor games they are more familiar with than those which present better odds of winning, overestimate their proportion of wins to losses, and overestimate their chance of winning (Petry, 2005). Illusory correlation happens when events are linked which aren’t necessarily causal in nature (Petry, 2005). Illusory correlation can involve past events, such as: lack of recent payout on a machine or a string of loses; or emotions, such as: having a “lucky friend” (Ladouceur, 2005).

Studies in which participants are trained to think out-loud, although of controversial validity, have been used to examine these cognitive distortions by counting the number of erroneous verbalizations (Petry, 2005; Ladouceur, 2005). In these studies, erroneous thoughts made up 70-80% of the verbalizations for both the pathological gambling and control groups (Petry, 2005; Ladouceur, 2005). However, the degree of conviction on erroneous perceptions was found to
differ over time between the two groups, with controls’ conviction decreasing and pathological gamblers’ conviction increasing the longer they played (Ladouceur, 2005). Additional studies on erroneous cognitions which have not considered conviction have yielded mixed and inconclusive results, and thus have not been able to link types or frequencies of illusions to pathological gambling (Petry, 2005).

Cognitive aspects of therapy have included psychoeducation, increased awareness of erroneous thoughts, raising doubts about validity of erroneous thoughts, and cognitive restructuring; while behavioral aspects of therapy have included identifying triggers of gambling and development of non-gambling reinforcers (Hodgins & Petry, 2004; Grant & Potenza, 2007). While it has not yet been determined if cognitive therapy can modify erroneous thoughts; cognitive-behavior therapy has been found to be an effective treatment for pathological gambling (Hodgins & Petry, 2004; Petry, 2005; Grant & Potenza, 2007). Despite evidence of efficacy, manualized cognitive-behavior therapy treatments have typically not been accompanied by therapist adherence and competence measures, and they have not been studied in confirmatory studies and they have not included (Grant & Potenza, 2007). Brief cognitive-behavioral interventions have also been found to be effective in the treatment of pathological gambling, although the optimal length of therapy has yet to be evaluated (Hodgins & Petry, 2004; Grant & Potenza, 2007). While studies of brief interventions have indicated effectiveness, the studies also found positive effects for the waiting list and other control conditions, which suggests that further study of gambling behavior over time in response to desire for treatment and interventions may be warranted (Petry, 2005).

Additional aspects of cognitive-behavioral therapy which have been included in therapy, but haven’t been studied with rigor required for determination of efficacy include behavior aversion and desensitization, self-exclusion, and financial counseling (Hodgins & Petry, 2004). Behavior aversion and desensitization has involved behavioral monitoring, covert sensitization, relaxation techniques, and spousal contingency contracting (Hodgins & Petry, 2004). A number of small studies have found a benefit to behavioral aversion, however they lacked a large enough sample size and follow-up period (Hodgins & Petry, 2004). Self-exclusion allows individuals to voluntarily ban themselves from gambling venues for periods of 3-12 months or a lifetime (Hodgins & Petry, 2004). Financial counseling also tends to be included in cognitive-behavioral interventions as financial pressures are considered to be a trigger for gambling (Hodgins & Petry, 2004).

Moving toward Evidence Based Practices

While many promising treatment strategies have been identified, much work is still needed before evidence based practices can be identified for the treatment of pathological gambling. In addition to a need for further replication of previous findings in controlled studies with larger sample sizes and extended follow up periods, comparison studies of the promising treatment approaches are needed as well. Medication and behavioral interventions have rarely been compared and due to the variety of outcome measures chosen for analysis, cannot currently be
easily compared across studies (Grant & Potenza, 2007). In addition to a need to compare the effectiveness of the identified approaches, it will also be important for studies to examine the effect of combining interventions (Grant & Potenza, 2007).

References


Ladouceur, R. (2005). *Title.* Speech presented at name Beyond the Odds: The Assessment, Diagnosis and Treatment of Pathological Gambling sponsoring organization. Iowa City, IA.
