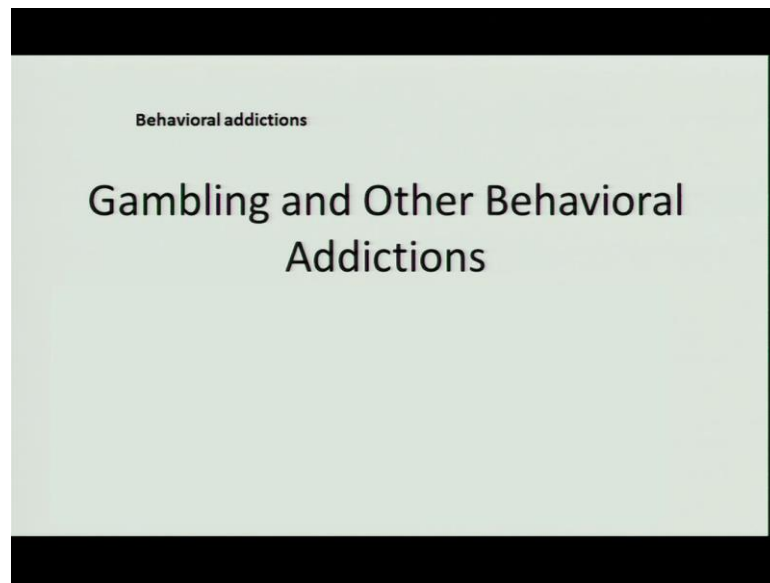


Selected Topics in Psychology
Neuropsychology
Prof. Vivek Benegal
Department of Humanities and Social Science
Indian Institute of Technology, Kanpur

**The Gambler's Lament: Behavioral Addictions – Gambling,
Internet and Porn Addictions**

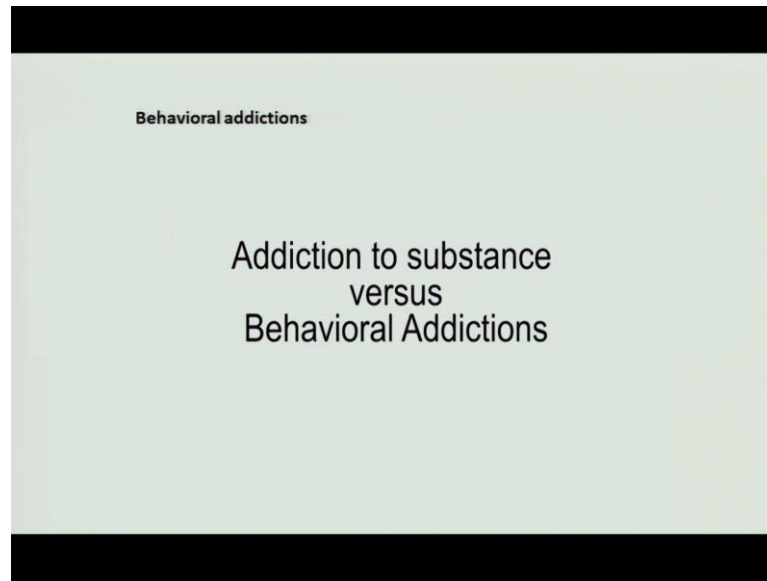
Good morning.

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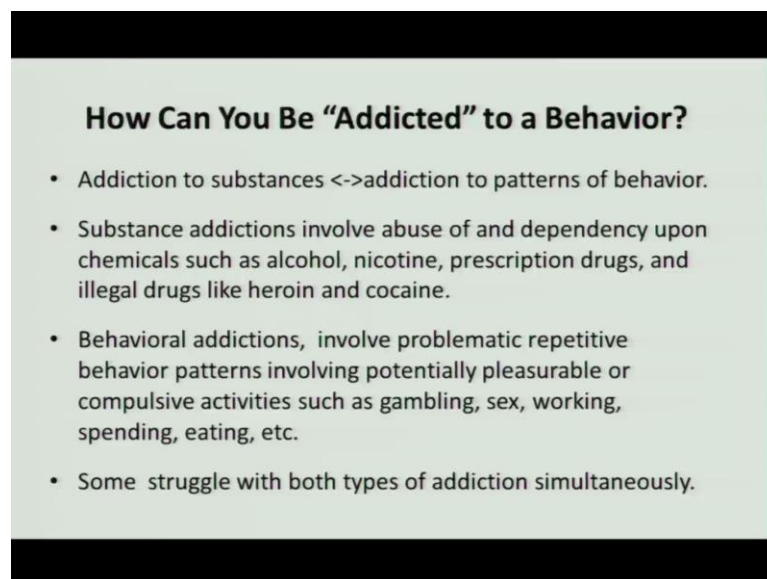
Today, we are going to talk about gambling and other behavioral addictions most of us are used to.

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The idea of addiction to substances, addiction to alcohol, addiction to drugs etcetera. But, I am sure you heard of people being addicted to their work you know you heard of terms like workaholism, you heard of. Now I am sure you would have read somewhere that you know some people are more than a little fond of their Facebook pages you know staying on Facebook. Or you know more than a little fascinated by their cell phones. So the issue is, whether one can be addicted to a particular behavior. Now how you be “addicted” to a behavior?

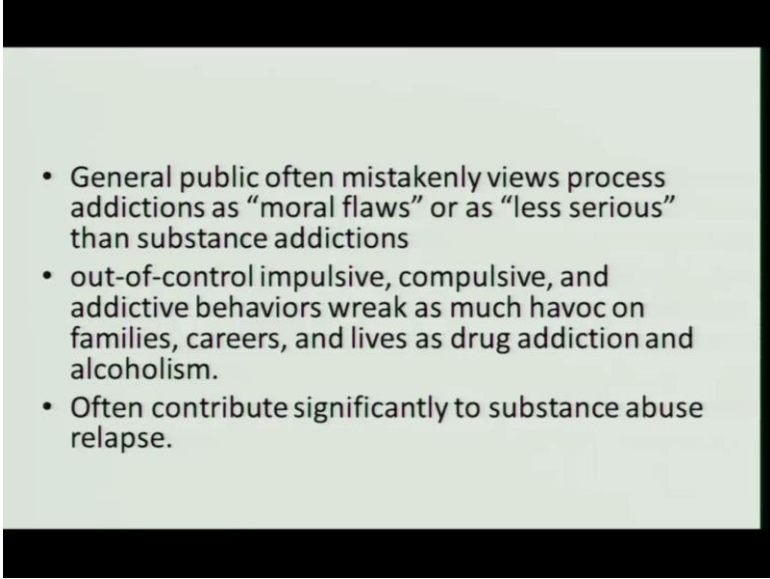
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If I might see the slide now,, addiction to substances, addiction to patterns of behavior appear to be to liar continuum. Because, ultimately addiction is about loss of control; the badge of addiction is that there is a person is lost control over the use of a particular substance or over his particular behavior. So, while substance addictions involve abuse of and dependence upon chemicals such as: alcohol, nicotine, heroin, cocaine etcetera.

Behavioral addictions involve problem use, repetitive use of potentially pleasurable or compulsive activities. I mean, most of them are activities which are normally done in society you know they can be gambling, they can be sex, can be working, spending. You know any go to people-people go on spending sprees eating etcetera. And sometimes what happens is, some people struggle with both types simultaneously. So, often and that is point I am going to try and make to you is that it is the same people who are at risk for both types of addiction.

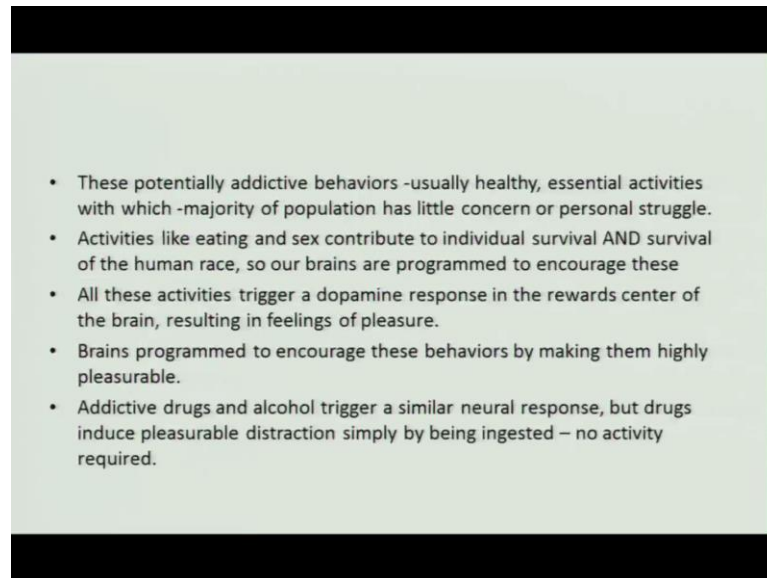
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- General public often mistakenly views process addictions as “moral flaws” or as “less serious” than substance addictions
 - out-of-control impulsive, compulsive, and addictive behaviors wreak as much havoc on families, careers, and lives as drug addiction and alcoholism.
 - Often contribute significantly to substance abuse relapse.

General public often mistakenly view these addictions as “moral flaws” in the same way that the general public often views people who use drugs and alcohol as some are morally weak. Somehow you know having less control over what they do and therefore, bad as less serious. But they also can end of and public also have the feeling that these are somehow less serious. Then, the substances addictions, the behavioral addictions I mean.

But what is, true and this is something that we see in our clinics is that these addictions to behaviors can also go totally out of control and they cause as much havoc on families, on persons themselves as drug addiction alcoholism. And it often I mean these addictions for example: gambling addiction etcetera often also contribute to relapse to substance addictions when people have both.

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- These potentially addictive behaviors -usually healthy, essential activities with which -majority of population has little concern or personal struggle.
 - Activities like eating and sex contribute to individual survival AND survival of the human race, so our brains are programmed to encourage these
 - All these activities trigger a dopamine response in the rewards center of the brain, resulting in feelings of pleasure.
 - Brains programmed to encourage these behaviors by making them highly pleasurable.
 - Addictive drugs and alcohol trigger a similar neural response, but drugs induce pleasurable distraction simply by being ingested – no activity required.

These potentially addictive behaviors are usually healthy, essential activities; you know that is the paradox that most of them start out of as often essential activity: eating is an essential activity, sex is an essential activity. Sometimes going and having a little you know fun is an essential activity in today's life you know listening to the cell phone is become an essential activity.

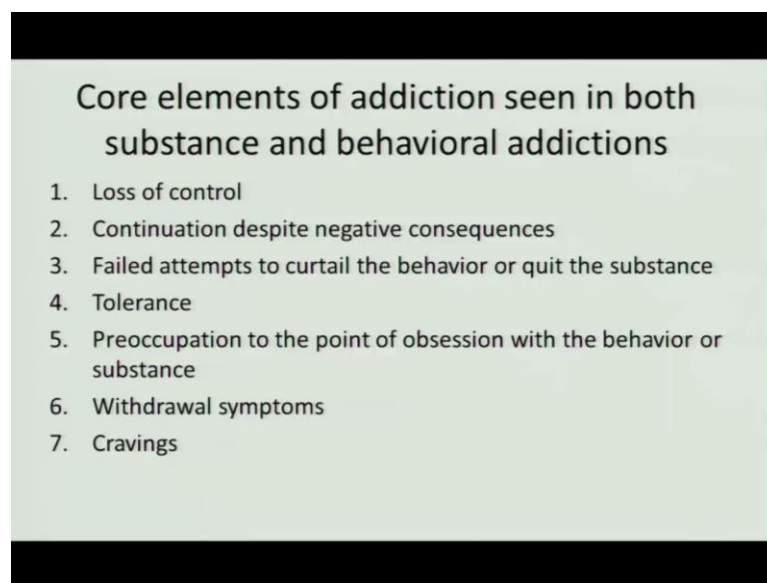
But sometimes is, essential activities spiral out of control, but 1 of the things this is something that we talked earlier these activities all have 1 common property; that they appear to stimulate a very ancient reward circuit in the brain. This is the circuit which as a part of evolution has occurred in human brain which gives you a sense of reward when you perform, a certain activity or more important when you anticipate performing a certain activity.

You know first you eat a chocolate, you get a warm feeling of reward in this particular circuit. The next time you see a chocolate, you brain goes wow just do it you know. And this is very important circuit as far as motivating humans to action is concerned and all

these whether it is the substances, whether it is some of these behaviors that I am going to talk about the cause of flood of this important chemical called Dopamine in this particular circuit.

Now, brains are already programmed to encourage these behavior by making them highly pleasurable. Addictive drugs in alcohol trigger as similar response but, drugs induce a pleasurable distractions simply by being taken; you do not have to do that activity in this you have to actually perform an activity and that is the only difference.

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So what are the Core elements of addiction seen in both substance and behavioral addictions: 1 as I told you is loss of control. 2 is, that you continue to do this despite negative consequences. You suffer pain, you suffer shame, suffer loss. But you continue to do it despite these odds and you make multiple attempts to stop. But despite that you relapse. Then tolerance which means, you require higher levels of a particular drug or in this case higher levels of that activity to give you the same buzz.

The earlier level for example: I start gambling right, tomorrow I need to gamble at a higher level I need to bet more to get the same buzz that you know I was getting initially. Then of course, there is this preoccupation you know it is a word which is often used to describe this is salience. This is so salient that this becomes the most important thing in my life you know; doing this activity and planning to do this activity takes over my 24 hours you know.

My going and buying stuff for my child is not become that important. My coming to work is not that important in when I come to work, mind is constantly thinking about this particular thing and that is salience. And if I do not do this particular activity, I get sense of withdrawal, which can be sadness, which can be anxiety, which can be persistent thoughts about this inability to sleep you know basic difficulties.

And I get cravings or an urge to perform this particular activity. These are some of the 7 criteria which are necessary to signify that a behavior or use of particular substance has become addictive.

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Gambling

- Gambling can be described as putting something, usually money, at risk, in the hope of gaining something of greater value.

		
5 sided seed of vibhitaka tree (Rg Veda)	Astragalus – Iran, India 1500 BCE	Early dice

Gambling: what is gambling is, putting something, usually money, at risk, in the hope of gaining of something of greater value. Now, gambling is very very very very old human societies and if 1 looks at the RigVeda. Which is 1 of the oldest you know pieces of literature known to mankind; 1 finds there is extensive description of gambling. And what they use to use is this particular 5 sided seed of tree called Vibhitaka.


Then, this is been described in as 1 of the earliest forms of gambling. Then, people started using somewhere in the indo Iranian and Indian region the Astragalus that is the of certain bones of animals; which have different facets so when you throw them, there is an equal chance of any side following and this again is around 1500 BC. I mean the earlier science.

And then of course, you move to dice which could be made out of ceramic or stone etcetera so you have cop dice. Those are pictures of some of the early dice which you can found especially in the Indian region.

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The Gambler's Lament – Rg Veda (1700 BCE)

- Sprung from tall trees on windy heights, these rollers transport me as they turn upon the table.
- The enlivening Vibhitaka has pleased me like the draught of Soma from Mujavant .
- . . .When I resolve 'I will not play with them, I will remain behind when my friends depart [to play]', and the brown dice, thrown on the board, have rattled, like a fond girl I seek the place of meeting.




5 sided seed of vibhitaka tree (Rg Veda)

The gamblers lament which is in the RigVeda is actually probably i am going to start with that because, it is 1 of the earliest descriptions of an addiction a behavioral addiction. This let us go through this it says sprung from the tall trees on windy heights, these rollers meaning this dice transport me as they turn upon the table. The enlivening Vibhitaka has pleased me like the draught of soma. Some body actually, making a comparison between gambling and the Somaras that they used to get higher.

And remember this is 1700 BC when, I resolve I will not play with them, I will remain behind when my friends depart to play and the brown dice throw on the board have rattled like, a fond girl I seek the place of meeting meaning it draws me this presumable a man, who saying draws me like a young girl young girl draws me. The dice draw me so his talking of the craving and the urge and so on and so forth.

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- The gamester seeks the gambling-house, and wonders, his body all afire, 'Will I be lucky?'
- The dice run against his desire, giving the best throws to his adversary.
- Dice, verily, are armed with goads and driving-hooks, deceiving and tormenting, causing grievous woe. They give gifts like boys [do], and then snatch them back from the winner, [they are] sweetened [as] with honey with magic power over the gambler . . .




These are for example: some oil paintings the of people gambling you know the gamester seeks the gambling house and wonders, his body all afire, will I be lucky? So end it goes on and on about how I has no control and how dice are like you know as if they have thorns and. They can like goats which pull elephants then, they can pull you.

So the point, the reason why I you know brought of this very old piece of literature is to just to tell you that this is, something which is been recognized for many many years and yet in the country which probably described pathological gambling for the first time. We haven't had too much of serious discussion, serious scholarship on pathological gambling.

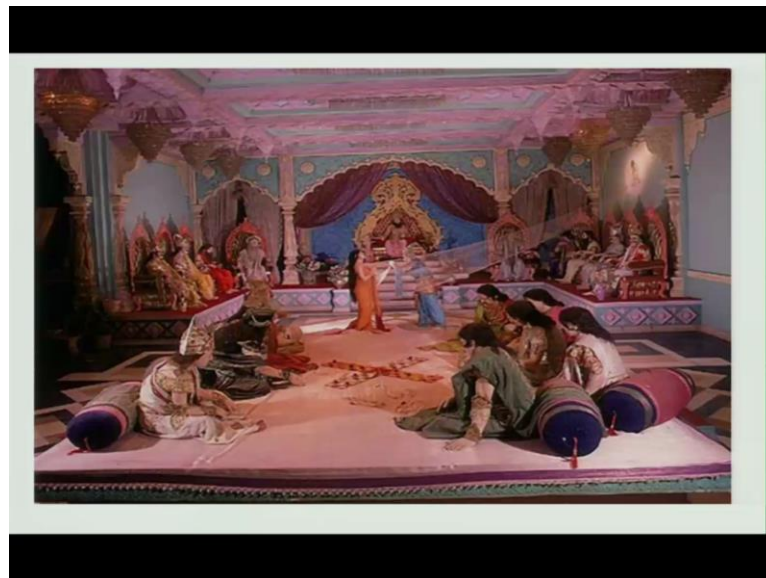
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... Downward they roll, and then spring quickly upward, and, handless, force the man with hands to serve them.
Cast on the board, like lumps of magic charcoal, though cold themselves they burn the heart to ashes.
The gambler's wife is left forlorn and wretched: the mother mourns the son who wanders homeless. In constant fear, in debt, and seeking money, he goes by night to the home of others [to steal] ...
... Make me your friend: show us some little mercy. Do not forcibly bewitch us with magic power.
Let your wrath [and] enmity now come to rest. Let the brown [dice] now snare some other captive.
The Rig Veda, Mandala 10, Hymn 34 [1]



It also talks about you know some of the consequences of gambling that what happens to people that they loss everything that they loss their families, they loss their wives alright.

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Let me, go to the this is a very very well-known scenario to all of us who grown up in India and have listened to a grandmother's tell us the story of their Mahabharata. Did you know?

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For example, that there are different forms of gambling there are gambling over sports for example these are people who are gambling over cocks fighting with each other cock fighting. And this is very very ancient has been described in some of the early Purans and certainly in the Mahabharata. On this side is, this picture of what used to go on in Calcutta in the late 1700s. They was of gambling called rain gambling.

People would gamble on the amount of rain that would fall and when rain would fall. People have gambled on you know how much the cotton stocks would be in the US which would broughten by writers telegraph. And this was perceive I mean historically the reason why I am telling this was perceived by the British colonial governed as something very very harmful, very very morally bad and they tried to ban gambling.

But in in true colonial style they decided to buy a gamble which the Nate is did and they decided that you know gambling on horse racing was not bad, but it was legal because they did it. And they came to this very very funny in logic that gambling on horse racing actually the scientific principal so you have to decide. How the horse is going to run, which horse, how the horse you know strong the horse is etcetera.

But you know something that this is, also something which is now currently used as a principle to determine what is right and what is wrong. The law on gambling in India today is, still based on this principle that if there is some scientific knowledge which is

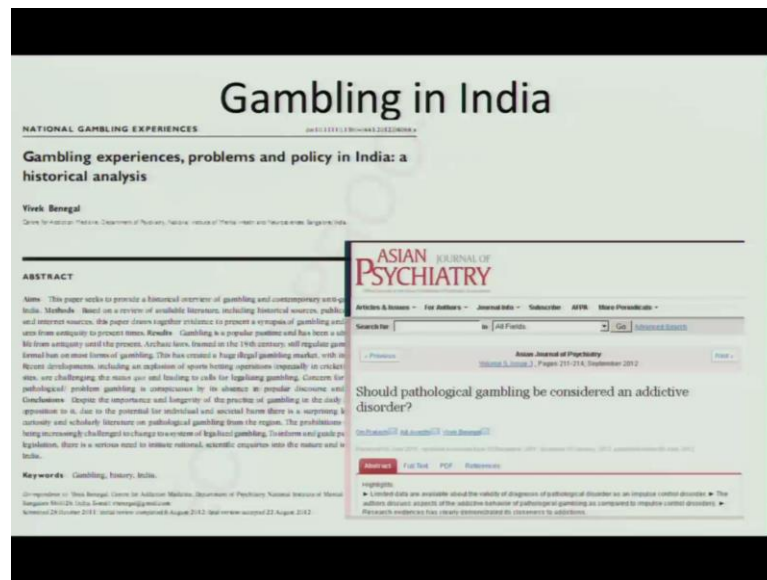
require then, that is that is called gaming. And if not if is based only on chance then, it is illegal because it is gambling.

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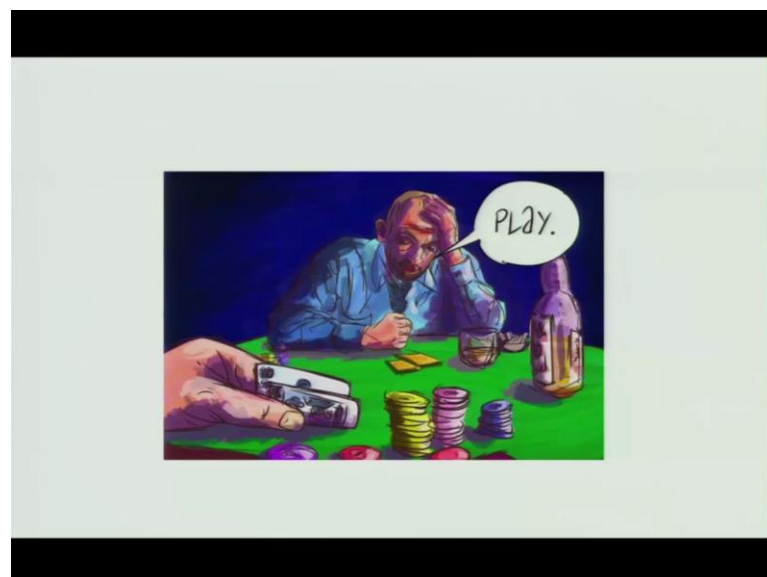
Anyway, so subsequently of course there are things which happened you know there is the game of Satta which is illegal because, it is based on chance but, there are 2 gambling's forms which are legal in India actually 3: 1 is horse racing which is come down from British times. The other 1 is game of rummy and the third 1 is legal in only some states which are casinos were used you know play certain kinds of gambling games.

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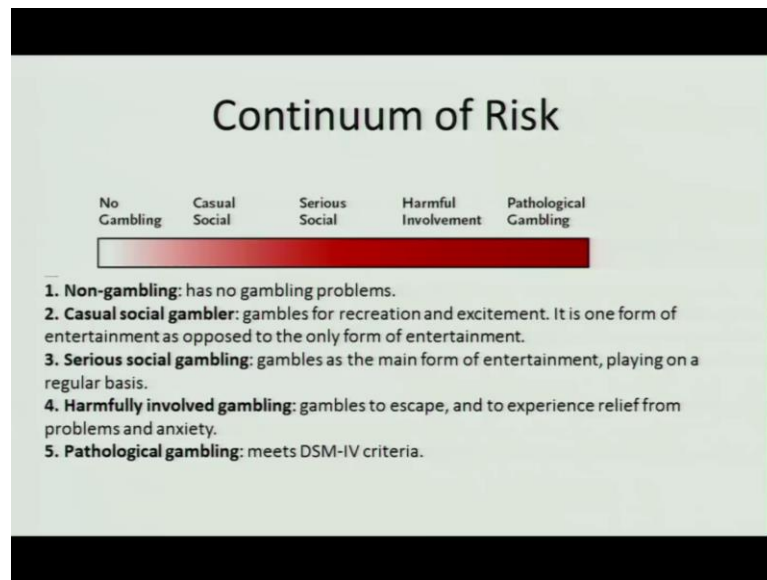


But these are some of the recent papers that we have had on you know gambling in India. And what we been trying to talk about is, that some forms gambling can be pathological like: some forms of drinking can be pathological, some forms of eating can be pathological and there is a segment of people who do gamble and they develop early problems.

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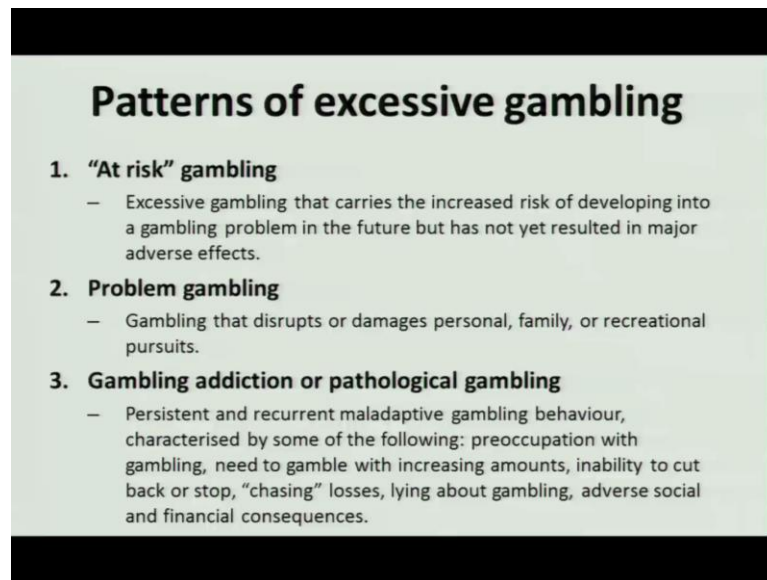
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Basically, what I am trying to say is that there is a continuum of risk it is it is not a black and white thing from no gambling to casual social gambling. You know for example, it is very common in India during Diwali, during Lakshmi Pooja and other things to get to gamble in at least in some parts of the country. And it is part of the religious ritual and then of course, you have serious social gambling where people disappear every you know weekend to play in some form of rummy or bridge or whatever in the lay backs on it.

Then, you have harmful gambling, harmful involvement; where people actually started losing money, start developing you know going to dead because of it and then, you have pathological gambling where gambling occurs to the extent of and of addiction.

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Patterns of excessive gambling

- 1. "At risk" gambling**
 - Excessive gambling that carries the increased risk of developing into a gambling problem in the future but has not yet resulted in major adverse effects.
- 2. Problem gambling**
 - Gambling that disrupts or damages personal, family, or recreational pursuits.
- 3. Gambling addiction or pathological gambling**
 - Persistent and recurrent maladaptive gambling behaviour, characterised by some of the following: preoccupation with gambling, need to gamble with increasing amounts, inability to cut back or stop, "chasing" losses, lying about gambling, adverse social and financial consequences.

Basically, we talk of and where reasonably of speaking and gambling is that most of the work has been done. And gambling you have "at risk" gambling which is gambling that carry is the increase risk of developing into gambling problem, but has not yet developed. Then, there is problem gambling that disrupts or damages personal family or recreational pursuits. Or next and more serious is gambling addiction or pathological gambling which is persistent and recurrent maladaptive.

Gambling characterize by some of the following that I talked about remember the 7 characteristics pre occupation with gambling they need to gamble with increasing amounts, inability to cut back or stop, chasing losses. You that I will loss so I need to the loss lying about gambling adverse social and financial consequences and continuing this spit knowledge of harm.

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DSM-4 Diagnostic Criteria for Pathological Gambling

A. Persistent and recurrent maladaptive gambling behavior as indicated by five (or more) of the following:

- (1) is preoccupied with gambling (e.g., is preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)
- (2) needs to gamble with increasing amounts of money in order to achieve the desired excitement
- (3) has repeated unsuccessful efforts to control, cut back, or stop gambling
- (4) is restless or irritable when attempting to cut down or stop gambling
- (5) gambles as a way of escaping from problems or of relieving a dysphonic mood (e.g., feelings of helplessness, guilt, anxiety, depression)
- (6) after losing money gambling, often returns another day to get even ("chasing" one's losses)
- (7) lies to family members, therapists, or others to conceal the extent of involvement with gambling
- (8) has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
- (9) has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
- (10) relies on others to provide money to relieve a desperate financial situation caused by gambling

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

So basically these are some other criteria for pathological gambling; which I just already talked about so we do not need to get into the detail of this.

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Substance Use and Addictive Disorders – changes in the DSM 5

- Recommendation that the Addictive Disorders category should include both substance use disorders and non-substance addictions.
- **Gambling Disorder** has been moved into this category.
- Previously listed in DSM-IV under the chapter, Impulse-Control Disorders Not Elsewhere Classified.
- Changed in response to both the expansion of the category and to international recommendations of participants involved with diagnostic revisions.

And there are different criteria depending on the which part of the world you are in this is the American criteria. And earlier people in the psychiatric world consider, gambling to be a problem of impulse. It was concerned consider disorder of impulse that you could not restrict your impulse. So it was called an impulsive impulse control disorder. For

example, you know you heard of people who pull out their hair is called Trichotillomania.

So this was class in the same class is that I have an impulse triple out pull out my hair and I pull it out. And gambling was concerned in impulse, but now people are more and more because of some other science that that has accrued over the last 10 years. If you more and more are saying look this is like addiction so it is now being classified as an addictive disorder.

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R 31 Gambling Disorder (DSM-5)

A. Persistent & recurrent maladaptive gambling behaviorfive (or more) of the following:

1. **preoccupied** with gambling (or reliving past gambling experiences, planning the next venture, or thinking of ways to get money with which to gamble
2. needs to gamble with **increasing amounts** of money to achieve desired excitement
3. repeated **unsuccessful efforts to control**, cut back, or stop gambling
4. **restless or irritable when attempting to cut down** or stop gambling
5. gambles as a way of **escaping from problems or of relieving** a dysphoric mood
6. **after losing** money gambling, often **returns another day** to get even
7. **lies** to family members, therapist, others to conceal extent of involvement with gambling
8. **jeopardized or lost** a significant relationship, job, or educational/career opportunity because of gambling
9. **relies on other** to provide money to relieve a desperate financial situation caused by gambling

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

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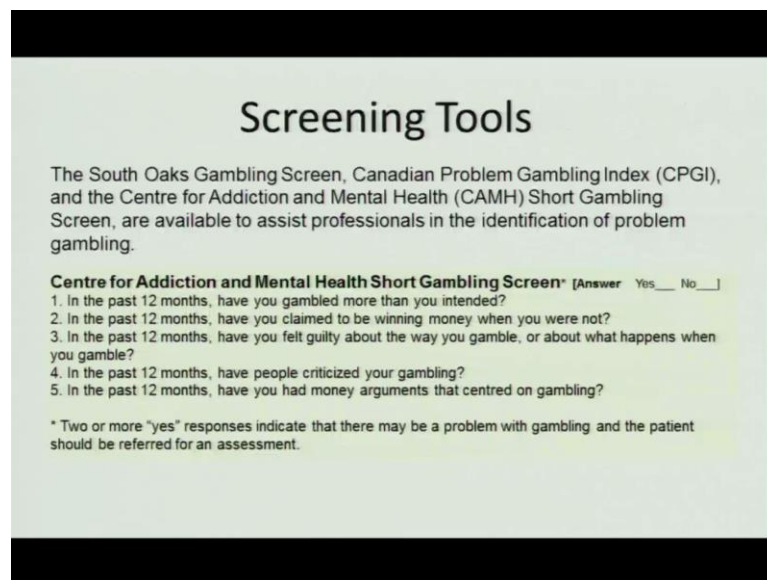
How common is Pathological Gambling?

Behavioral Addictions	Lifetime Estimates of Substance Use Disorder
Pathological Gambling	35% – 63%
Kleptomania	23% – 50%
Pathologic Skin Picking	38%
Compulsive Sexual Behavior	64%
Internet Addiction	38%
Compulsive Buying	21% – 46%

Lifetime Estimates of Substance use Disorders in Behavioral Addictions
Source: Grant JE. Impulse Control Disorders: A Clinician's Guide to Understanding and Treating Behavioral Addictions New York, NY: Norton Press, 2008.

So any way this was. So, how common is pathological gambling. We are talking about this in your at liberty to ask me why you talking about this really common. What we do know is that pathological gambling occurs in about 30 to 60 percent and these are US figures of the population you know but, these are American figures.

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Screening Tools

The South Oaks Gambling Screen, Canadian Problem Gambling Index (CPGI), and the Centre for Addiction and Mental Health (CAMH) Short Gambling Screen, are available to assist professionals in the identification of problem gambling.

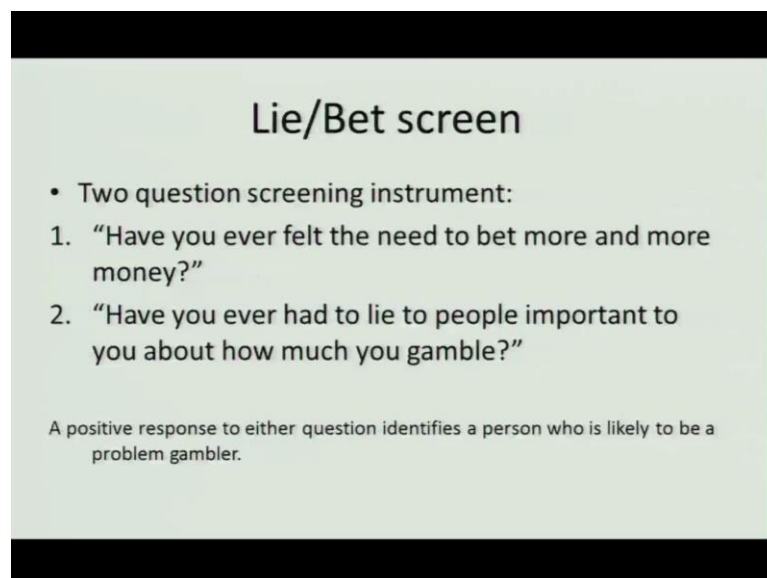
Centre for Addiction and Mental Health Short Gambling Screen* [Answer Yes ___ No ___]

1. In the past 12 months, have you gambled more than you intended?
2. In the past 12 months, have you claimed to be winning money when you were not?
3. In the past 12 months, have you felt guilty about the way you gamble, or about what happens when you gamble?
4. In the past 12 months, have people criticized your gambling?
5. In the past 12 months, have you had money arguments that centred on gambling?

* Two or more "yes" responses indicate that there may be a problem with gambling and the patient should be referred for an assessment.

Let us, look at and these are some of tools which are used to tap gambling.

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Lie/Bet screen

- Two question screening instrument:

1. "Have you ever felt the need to bet more and more money?"
2. "Have you ever had to lie to people important to you about how much you gamble?"

A positive response to either question identifies a person who is likely to be a problem gambler.

But, 1 of the best screen as for gambling is just 2 questions have you ever felt the need to bet more and more money, have you ever had to lie to people important to you about how much you gamble.

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Problem Gambling Severity Index (CPGI)

Thinking about the last 12 months...

1. Have you bet more than you could really afford to lose?
2. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
3. When you gambled, did you go back another day to try to win back the money you lost?
4. Have you borrowed money or sold anything to get money to gamble?
5. Have you felt that you might have a problem with gambling?
6. Has gambling caused you any health problems, including stress or anxiety?
7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
8. Has your gambling caused any financial problems for you or your household?
9. Have you felt guilty about the way you gamble or what happens when you gamble?

Rated as:
 0 Never, 1 Sometimes, 2 Most of the time, 3 Almost always.

+ WHO Adult ADHD Self-Report Scale-V1.1 (ASRS-V1.1) Screener

Ferris, J. & Wynne, H. (2001). The Canadian problem gambling index.

TOTAL SCORE

0 = Non-problem gambling.

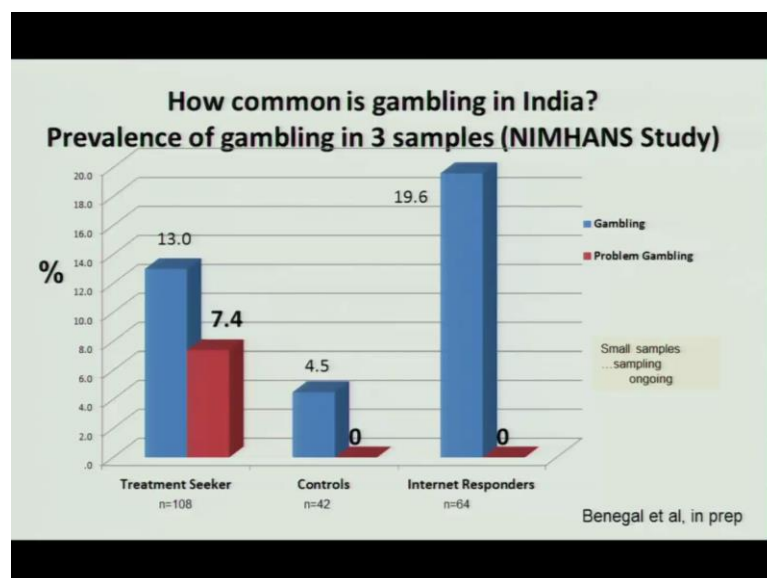
1 or 2 = Low level of problems with few or no identified negative consequences.

3 to 7 = Moderate level of problems leading to some negative consequences.

8 or more = Problem gambling with negative consequences and a possible loss of control.

And these are again some of the tools which are used.

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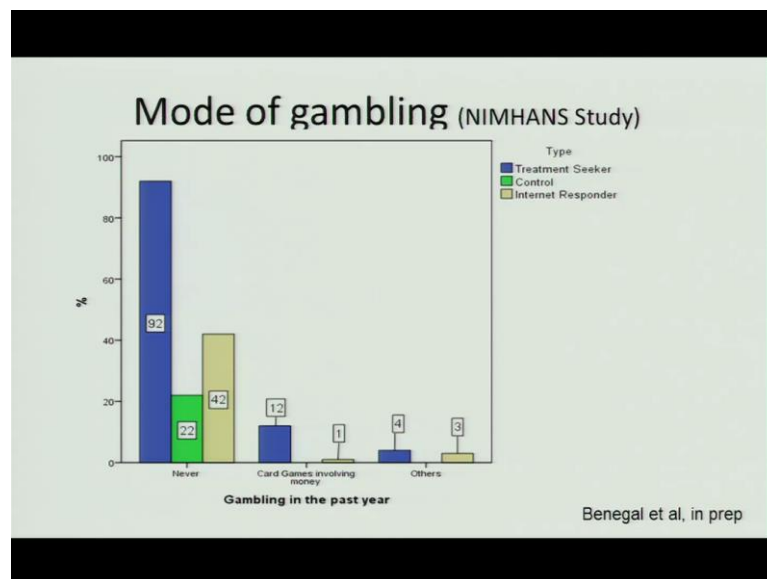
Let me give, you some Indian figures these are figures of you know when we asked for gambling in the population in a population in Bangalore and we looked at people who were treatment seekers. Who are seeking treatment for addiction, what we found was that

in non-treatment seekers. What am I looking at in treatment seekers 13 percent had gambling of any kind and 7 percent had from pathological odd addictive gambling.

In non-treatment seekers that is general population that we looked at about 5 percent had gambling of any kind and 0 percent had pathological gambling. We did an internet of gambling and we found again about 20 percent people reported gambling of any kind and 0 percent reported gambling of any kind and 0 percent reported pathological gambling.

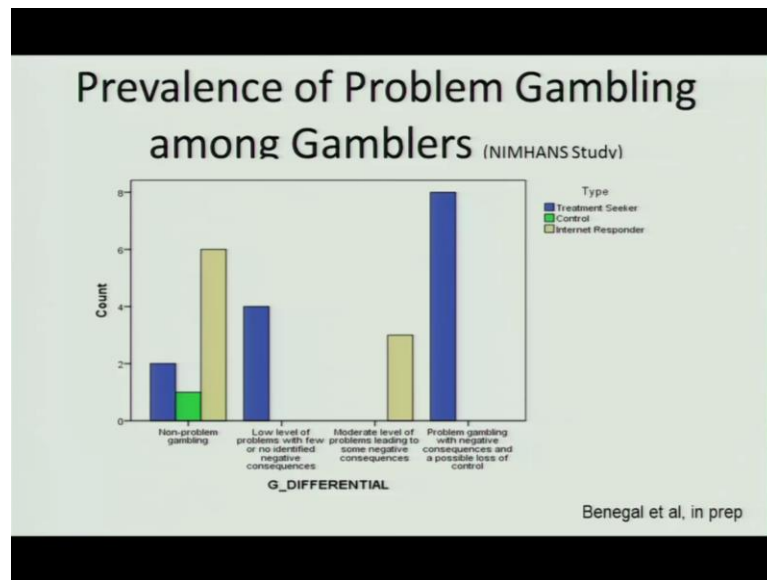
Then, Say 1 of the things that we arrived that is the conclusion is that people who are seeking treatment for other addictions. Where at much higher risk for pathological addiction as pathological gambling or addictive gambling as well. Whereas, other forms of gambling the problem gambling and the social gambling were common in people who are not at all not at risk for other addictions. So this the addictive forms are seem to cluster together.

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The mode of gambling that we did find was more of you know of card games involving money, horse racing etcetera. But as you can see no this this is a slide about mode of gambling so card games involving money seen to be the most common form that we found in or on in a study.

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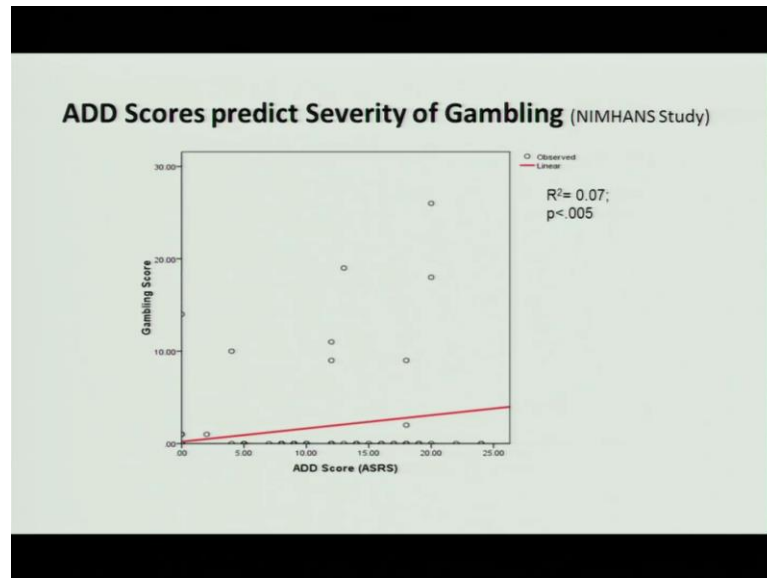
Again this particular slide really shows that the kind of problems that were there and we if you look the problem seeing to be more in the blue stripes. Which are people who are seeking treatment for addictive disorders.

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But the slide I really want to show you is, that problem gambling seen to be much more in people who had developed early onset addictive problems. And in the previous lecture I had talked about you know how people with early onset addiction seen to be at much higher risk for a whole host of problems.

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What we also found in this particular study is, that these are the externalizing scores. Scores of behavior which are name namely impulsivity in a tension, oppositional, behavior etcetera. So people who had greater externalizing scores, were more likely to be gambling them who had lesser externalizing scores.

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- Adolescents who screened positive for ADHD:
 - significantly more likely than non-ADHD adolescents to engage in gambling
 - significantly more likely to develop gambling problems.
 - Those who screened positive as predominantly inattentive and those who screened positive for ADHD Combined (Inattention and Hyperactivity-Impulsivity) were equally likely to gamble, but the latter were twice as likely to have gambling problems.
- Faregh & Derevensky (2011) Gambling behavior among adolescents with attention deficit/hyperactivity disorder. *Journal of gambling studies*

And this is something that is implicit found consistently in old literature that adolescents who have attention deficit adolescents who have contact problems are more likely to have gambling problems.

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Brain Imaging Studies in Pathological Gambling

Current addiction theories have identified four important cognitive-emotional processes that are likely to be relevant for PG as well.

1. Reward and punishment processing and its relation to behavioral conditioning. \
2. Increased salience of gambling cues that often results in strong urges or craving for gambling.
3. Impulsivity because it has been implicated as a vulnerability trait for acquiring PG and as a consequence of gambling problems.
4. Impaired decision making because pathological gamblers continue gambling in the face of severe negative consequences.

Let me, go pass this I will not spend too much time here other than to say that brain imaging studies in people with pathological gambling have shown that the brain sizes and brain volumes in people who have pathological gambling are different from people, who do not have pathological gambling.

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Reward and Punishment Sensitivity

Pathological gamblers found to have:

- Decreased ventral striatum and ventral prefrontal activation during nonspecific rewarding and punishing events compared with controls => a blunted neurophysiologic response to rewards as well as to losses in pathological gamblers [Reuter et al, 2005; Ruitter et al, 2009].
 - Similar to findings in SUDs [Heinz et al, 2007; Wrase et al, 2007].
- Most addiction theories - substance dependence - characterized by decreased basal ganglia dopaminergic transmission predating the development of addictive behavior, and that repeated drug use results in a further reduction of dopamine (DA) transmission associated with diminished sensitivity to rewarding stimuli [Goldstein & Volkow 2002].
- In line with these theories, it is hypothesized that pathological gamblers are more likely to seek rewarding events to compensate for a preexisting anhedonic state comparable with that of substance-dependent individuals [Robinson & Berridge 2008].

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Increased Cue Reactivity

- fMRI cue reactivity study: higher BOLD response in the right dorsolateral prefrontal cortex (DLPFC), right inferior frontal gyrus, medial frontal gyrus, left parahippocampal region, and left occipital cortex in response to gambling stimuli y [Crockford et al. 2005]
 - brain regions activated in pathological gamblers compared with NCs predominantly involve regions associated with the DLPFC network, which is associated with conditional responses.
- higher bilateral parahippocampal gyrus, right amygdala, and right DLPFC activity in problem gamblers relative to NCs while viewing gambling pictures and neutral pictures
- Furthermore, a positive relationship was found between subjective craving for gambling after scanning in problem gamblers and BOLD activation in the ventrolateral prefrontal cortex, left anterior insula, and left caudate head [Goudriaan et al. 2010]

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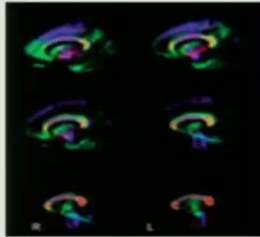
Impulsivity in Pathological Gambling

- ERP study : problem gamblers showed greater positive amplitude in the ERPs, modelled by a dipole in the anterior cingulate cortex, than NCs after successful "hit" decisions.
- Thus, gamblers showed more risk-taking behavior coupled with a stronger neural response to (infrequent) successful outcomes of this behavior compared with NCs.[Hewig et al., 2009]

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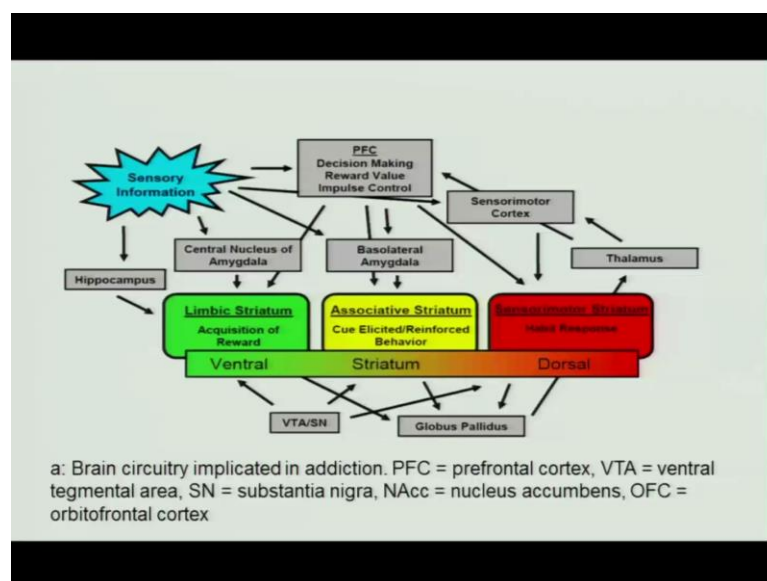
Reduced genu corpus callosal white matter integrity in pathological gambling and its relationship to alcohol abuse or dependence

- Findings of decreased FA values in the genu of the CC in PG subjects suggest that, like with other disorders of behavioral dyscontrol, white matter microstructural abnormalities contribute to the pathophysiology of PG.
- These differences appear particularly relevant to individuals with remitted AA/AD, highlighting the importance of considering co-occurring substance use disorders when investigating PG.

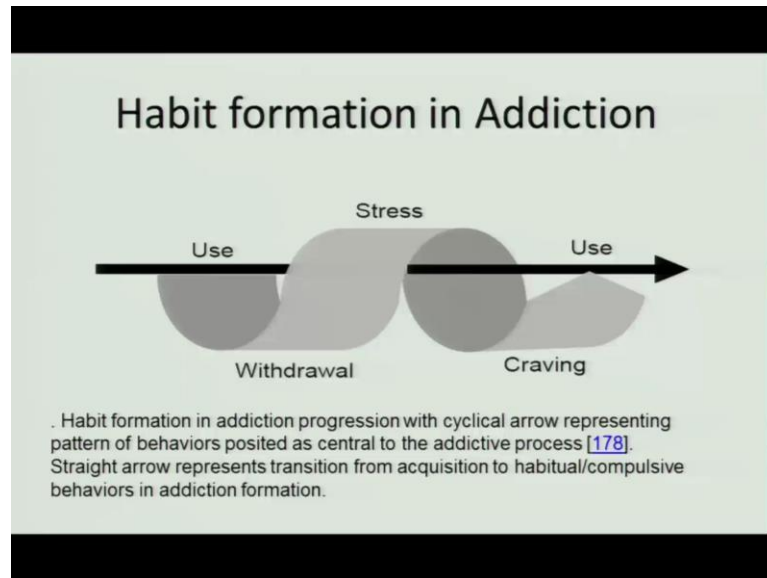


Yip et al, (2011). World J Biol Psychiatry.

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Treatment of Pathological gambling: Psychosocial Interventions

Strength of Evidence	Interventions
Strong Evidence	<ul style="list-style-type: none">• Cognitive Behavioral Therapy• Behavioral Therapy
Moderate Evidence	<ul style="list-style-type: none">• Relapse Prevention
Weak Evidence	<ul style="list-style-type: none">• Psychodynamic Psychotherapy• Aversion Therapy• 12-step (e.g., Gamblers Anonymous; self-help)• Self-Exclusion (self-help)

Cochrane Database Syst Rev. 2007 Jul 18;(1):CD001521.

Let me go instead to because this is a lot so how does when treat pathological gambling currently the only method of treating pathological gambling or psychosocial interventions. The once which have strong evidence have cognitive behavioral therapies and behavioral therapies.

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Psychopharmacological treatment in pathological gambling

- Review of the literature published in the past 10 years.
- Several studies were carried-out on antidepressants, mood stabilizers, and antipsychotic agents. In the absence of comorbid psychiatric disorder, these studies did not conclude to the efficacy of these psychotropic drugs.
- A possible efficacy of opiate antagonist treatment for pathological gambling has been replicated in a number of placebo-controlled studies.
- Preliminary results on N-acetyl cysteine, Memantine and Topiramate produced significant improvement for pathological gamblers and may open new avenues for treatment.

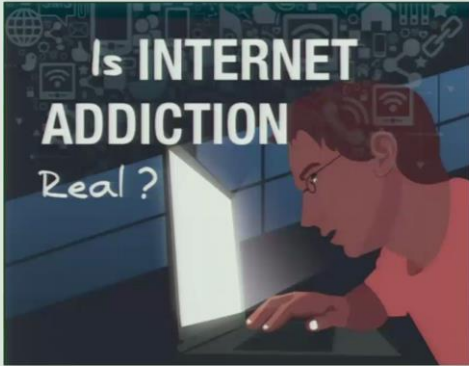
Achab & Khazaal (2011) Curr Pharm Des.

And very recently, we are we have started using certain pharmacological or drugged medicine treatments for pathological gambling.

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Internet addiction disorder (IAD)

- *Internet overuse, problematic computer use or pathological computer use, is excessive computer use that interferes with daily life*



<http://dailyinfographic.com/is-internet-addiction-real-infographic>

Let us talk, about another form behavioral addiction internet addiction disorder. Now the question is, internet addiction really real? Again the, you do know of people who spend in ordinate amounts of time on the net and who get very upset when they are dragged off or when their internet provider or broadband supply gets cut. So do you think internet addiction is real?

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Support

- Between 5% and 10% of Web surfers suffer some form of Web dependency (Orzeck, 2005)

Let us, examine the between 5 percent to 10 percent of Web surfers suffer from some form of dependency and this is from in American study.

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What Is Addiction?

Compulsive need for and use of a habit-forming substance, characterized by tolerance and by well-defined physiological symptoms upon withdrawal.


Broadly: persistent compulsive use of a substance known by the user to be harmful.

Internet Addiction Disorder (IAD)

Interference in
Daily life

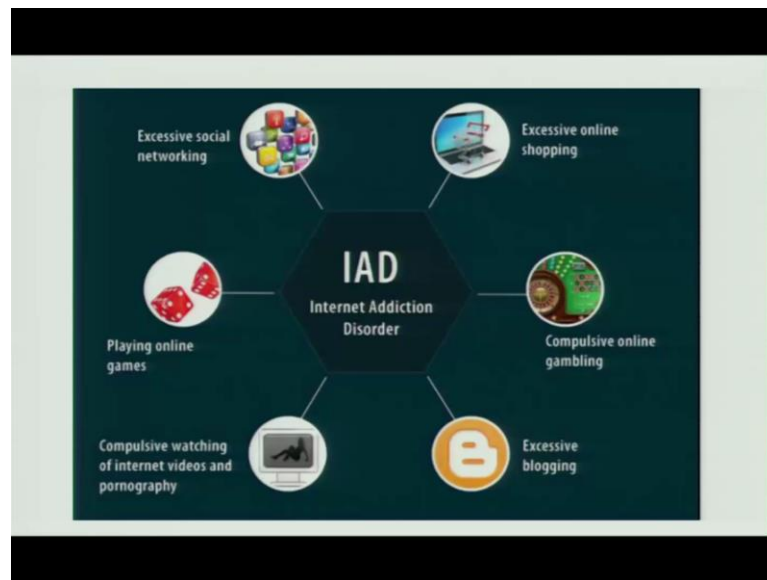


Problematic or pathological use of computers and the Internet space



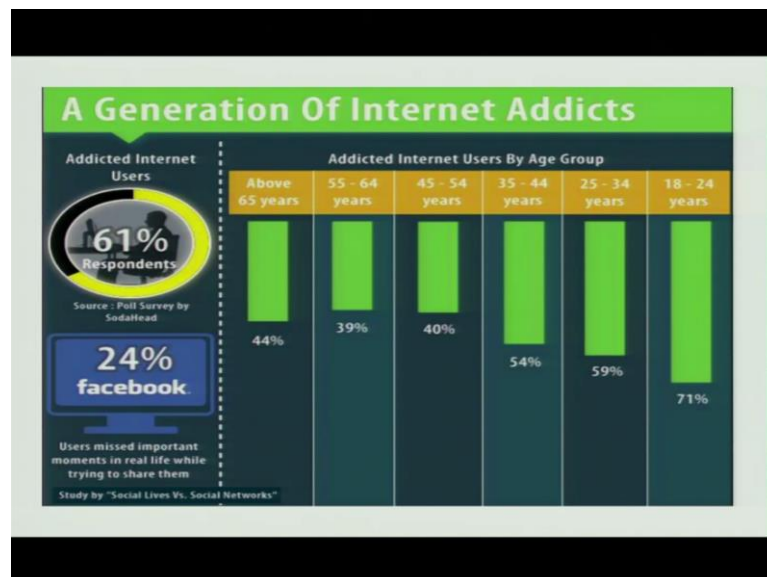
What is addiction? Like we said it is a compulsive need for and use of a habit forming a substance. But persistence compulsive use of a substance known to be harmful.

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Now internet addiction can involve excessive social networking, excessive online shopping, compulsive online gaming, excessive blogging, compulsive watching of internet videos and pornography and playing online games. So when we once talk of internet addiction, we talk of a whole cluster of problems.

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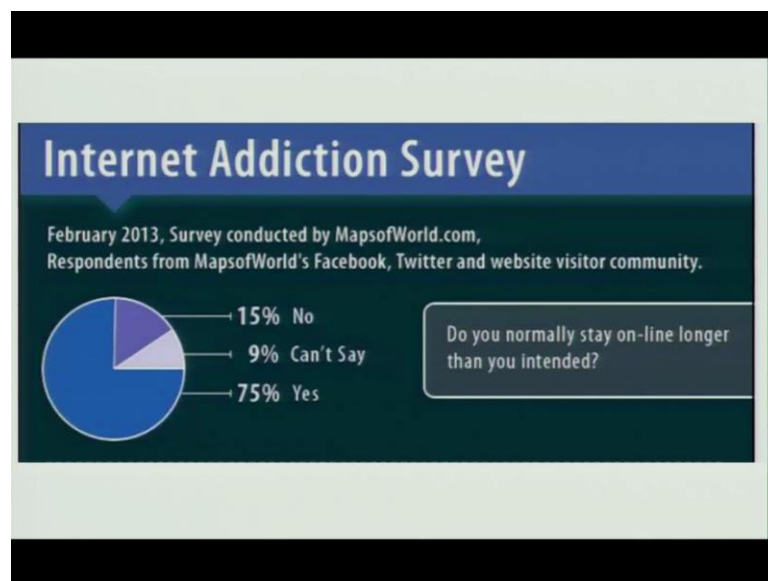
Now, while there is a generation of internet addicts, most of them seem to be clustered in the younger age group. While this only stands to reason because, people above the age of 45 are not using the net so much and they are not as net savvy.

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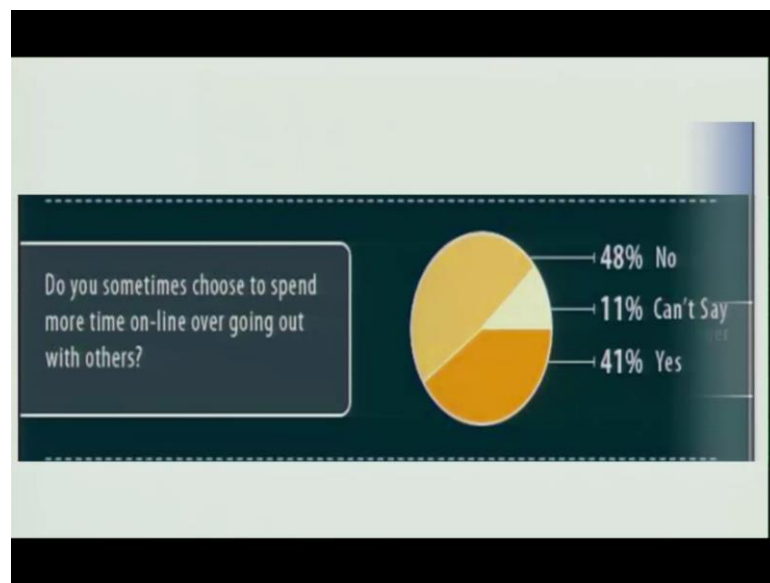
So there are some studies which show the too much internet usage can cause structural brain damage. And some of the consequences of internet addiction or loss of a sense of time with you warn be on the net without knowing how much time is passed. Withdrawal when the computer is inaccessible. Social isolation and fatigue they do not want to go into you know social groups you get tired and bore very easily. Tolerance that is, including the need for better computer equipment that you keep upgrading your computer you keep upgrading a software.

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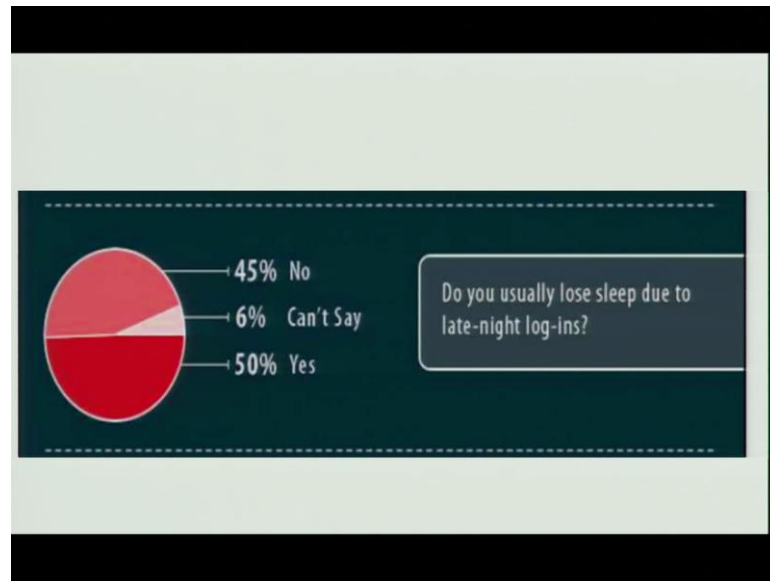
So these are some of the known consequences of internet addiction. Now this is again another particular another study on internet addiction. And when people were asked do you normally stay online longer than you intended 75 percent of people who are approached said yes. Unfortunately this particular study was done on people who were in the internet. So in a way it was by us to people who were on the internet for very long periods of time.

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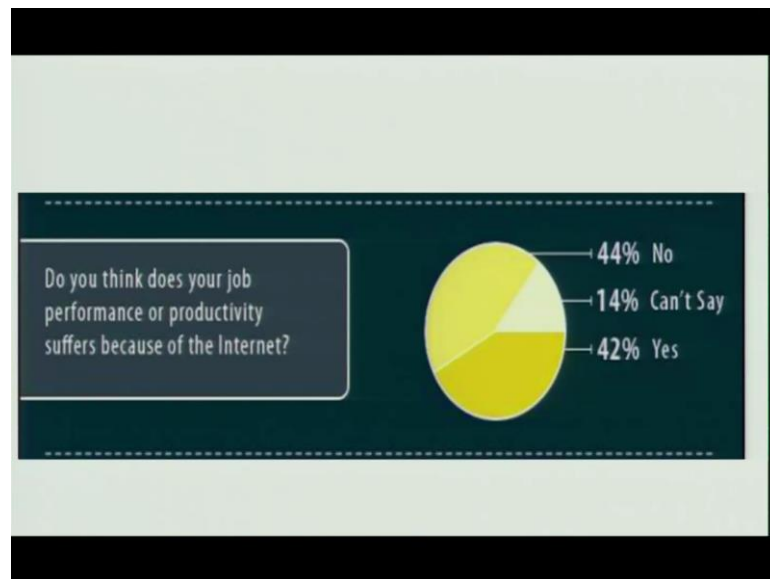
When asked do you sometimes choose to spend more time on online then going out with others; 41 percent said yes.

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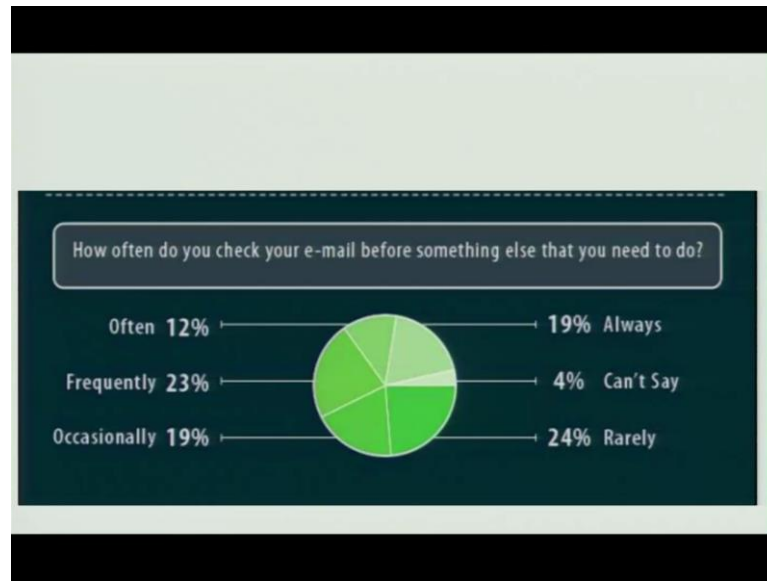
We usually use sleep due to late night log ins 50 percent said yes.

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Did you think your job performance of productivity suffers because of the internet; 42 percent said yes. So fairly large numbers of people who have being poled a saying that internet usage is interfering with their day to day functioning.

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How often you check e mail before something else that you need to do 23 percent say frequently.

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Is Internet Addiction A Mental Disorder?

1995
First satirically proposed Internet Addiction Disorder or IAD, describing it in terms similar to "PATHOLOGICAL GAMBLING" a well-established mental disorder.
Ivan Goldberg, M.D.

May 2013 edition
(due for publishing)
A reputed international mental health encyclopedia included Internet-use disorder or Internet Addiction as a condition
"RECOMMENDED FOR FURTHER STUDY"

So is internet addiction of mental disorder. Now actually, the whole concept in the internet addiction started of us a satirical piece somebody wrote up a piece saying if this is addiction internet you know sitting on the internet is also addiction. And applied the principles of addiction to internet thing so it started of us satirical piece by gentlemen called gold work in 1995. But by 2013 this is now entered the bible of psychetric

diagnosis. So what started of us a joke hence, have been become a serious pathological entity.

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The slide is titled "Opposition" and features a research poster. The poster is titled "THE RELATIONSHIP BETWEEN DEPRESSION AND INTERNET ADDICTION" and is published in "CyberPsychology & Behavior". It is authored by Dr. Kimberly S. Young. A quote from the research states: "Research links Internet Addiction Disorder to pre-existing mental health issues, such as depression, and is not an independent disorder by itself." The poster also includes a central graphic with the text "Negative life consequences for Internet over-users" and four surrounding icons: "Breakdown of marriage" (two people in a heart), "Job loss" (a person with a red slash over a job icon), "Incurrence of debt" (a bar chart with a downward arrow), and "Failure to succeed in academics" (a person with a red slash over a graduation cap icon).

People have there are some people who opposite and this say that, the relationship between depression and internet addiction is because people would dispersed 10 to not use not to be in contact with other people. But take request to the internet and that it is usually people who are first unwell. Who then spend more and more time with the internet that internet usage is secondary to other mental disorders.

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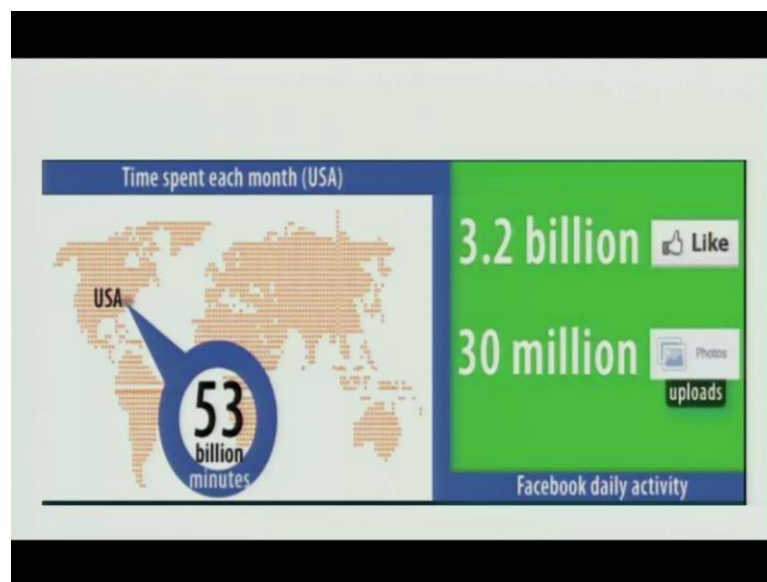
The slide is titled "Facebook Addiction" and features a graphic with the Facebook logo. It shows a calendar icon for the year "2012" with the text "Monthly active users" below it. An arrow points from the calendar to a computer monitor displaying "1.06 billion" and a smartphone displaying "680 million".

But you cannot escape the consequences, you know when 1 talks of Facebook addiction Facebook in 2012 had 1.06 billion uses of them almost 680 million how where according to 1 particular study addicted to Facebook.

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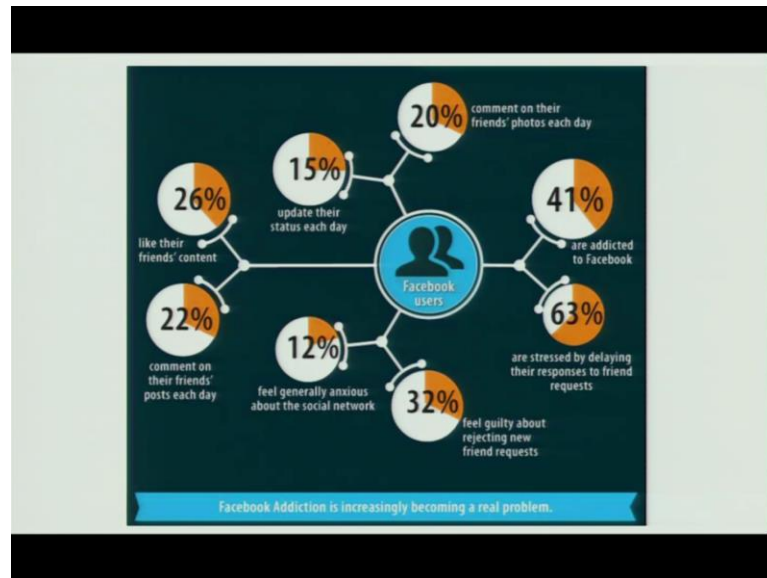


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This is the US study and the time spent each month was very very high was what 53 billion minutes on Facebook 3.2 billion were pressing the like button and 30 million uploads happened in 1 particular month is a these are huge figures.


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Facebook addiction is increasingly becoming a real problem because, if you look at Facebook users and these are data taken from this particular study which looked at Facebook usage 41 percent are addicted to Facebook, 63 percent are stressed by delaying the responses to our friend request. More than 30 percent 1 third guilty by rejecting new friends request 20 percent people comment on their friend photos each day. Now which plan do you guys fallen to 15 percent update their status each taken imagine everybody updating the status each day.

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Gaming Addiction



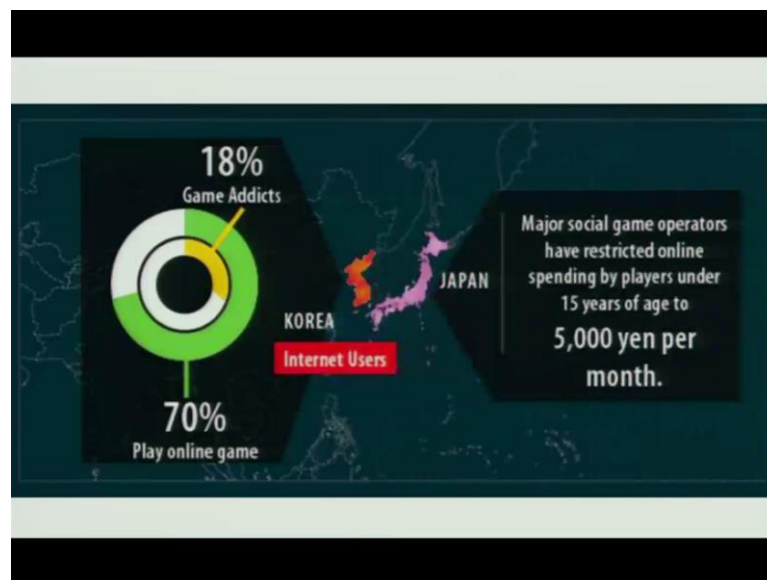
Peter Smith
- (Counselor) in
The Guardian

It's not unusual for people to get so obsessed with online gaming that they forget to eat and drift towards an anorexic and undernourished state. You can play online with people around the world, so it can be at odd times of the day – when it's 5pm in Chicago or evening in Japan. You have a relationship with characters in the game that give you an artificial feeling, created by your body's natural endorphins, when you have killed some monster or solved a problem.

Anyway, this is what we are talking about gaming addiction that it is not unusual for people to get so obsessed with online gaming that they forget to eat. And they just grow thin and anorexic and it does happen and we have started getting people who are coming to the clinic with complaints. Usually, they do not complain their parents and you know relatives who complain that they stop doing every activity.

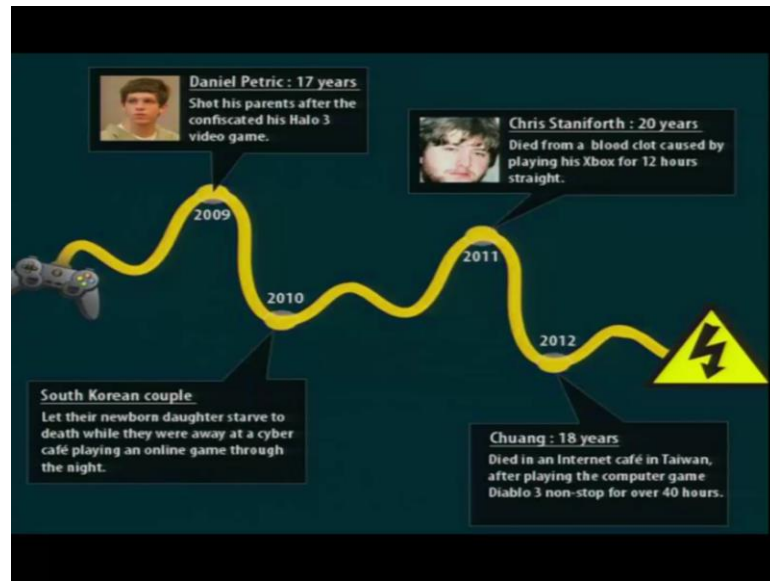
They just sitting, on the net playing often they playing is multi player massive multi player online games. And they are on it in the day time because, all their friends in India playing and they are wake it night. Because, they are playing with people in some other continent in some other time zone.

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A lot of work is been done in Korea, where I believe gaming addiction is very very our gaming very very popular. And apparently 70 percent of the young people in Korea play online games and it has been estimated by 2 studies from Korea that 18 percent are online addicts, I mean game addicts.

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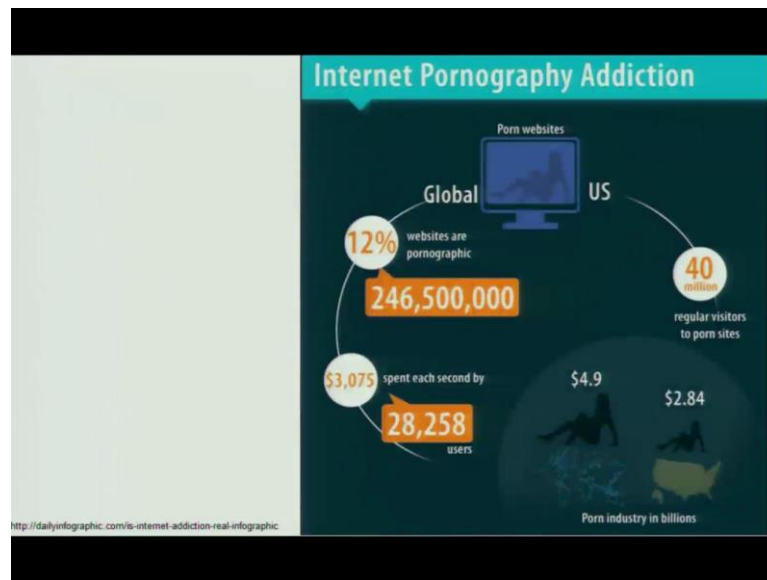


Now people often ask me, new so what happens if people play games. Does it hurt anybody? And these are some of the studies where people are actually killed or hurt other people or hurt themselves. When they was stopped from access to their computer, access to their games.

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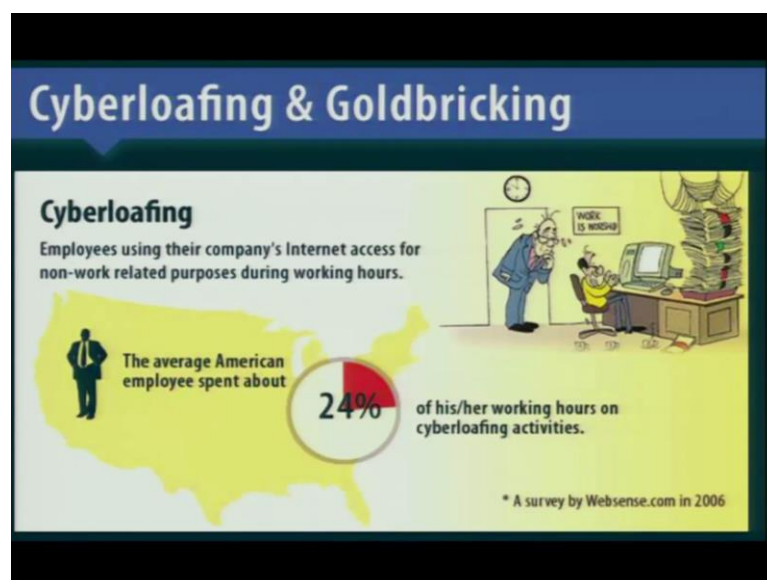


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Online gambling I was talking about earlier so, I will not talking about it now. Internet pornography addiction is also very very figure have very very high and these are again these ways you can get global statistics from the net also. If you look at porn websites of all the global sites 12 percent of the websites are pornographic. And there appear to be huge amounts of money which are spent on these websites.

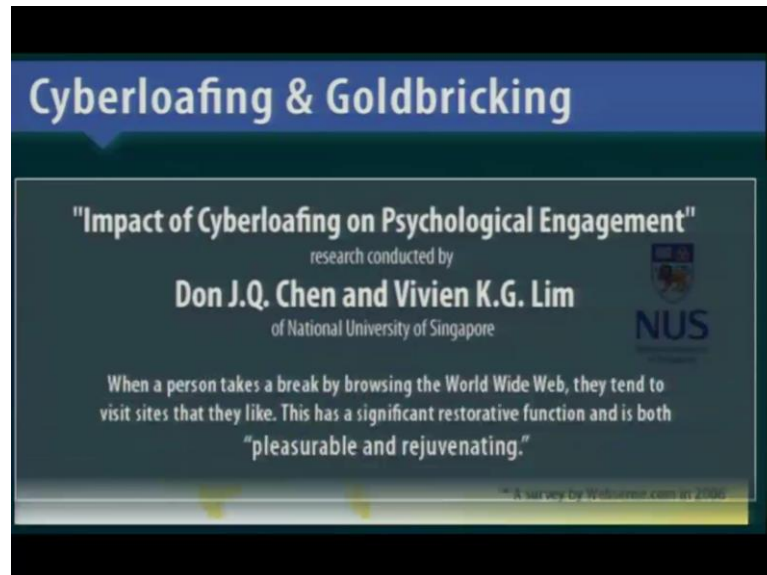
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These are term which I use especially industry, you got a Cyberloafing in Goldbricking. Cyberloafing is, when peoples use their companies internet for non-work related

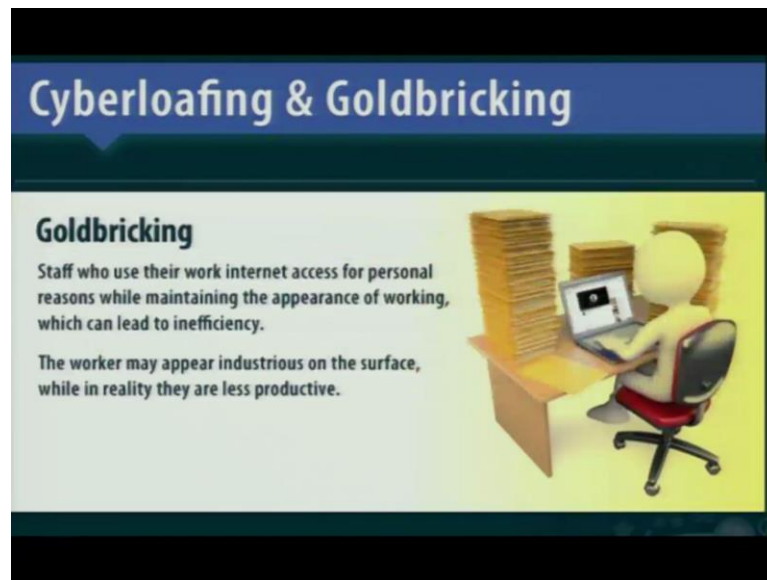
purposes during working hours. And these in industry has become a very big drain on the the productive and therefore, on the money.

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So people have been doing research on the "Impact Cyberloafing". So they have been studies for an against you know; some studies is said the people who take time off from their work actually have better psychological performance and better engagement with their work. Because they enable to take time off from their work, but know think the bosses in the industry are very happy about people using their computers to login on to Facebook.

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Goldbricking on the other hand is: staff who use their work internet access for personal reasons while maintaining the appearance of working, which can lead to inefficiency. So you have 1 screen opened which is your work thing and another screen opened on your Facebook page and you keep shifting between the 2.

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It has been estimated that almost 70 percent of businesses lose money and time because of these particular practices.

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Internet Addiction Rehabilitation

Dr. Keith Ablow
The Mind of the News,
Fox News

"Facebook, Twitter, SecondLife...are making it possible for tens of millions of Americans to believe things which are not true about themselves and to lose their ability to find real direction in life. They can believe they have hundreds or thousands of friends"

<http://dailyinfographic.com/is-internet-addiction-real-infographic>

Now this is not something that has become very popular in India. But especially in US and in countries like: Korea etcetera. There is strong move to bring about internet addiction rehabilitation, I haven't heard of any search process and you know in India and honesty we really we who are in treatment arena haven't yet thought of developing invention but, we are going to need to develop such inventions.

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Are You Addicted to Your Smartphone?

65% of iPhone owners surveyed said:
"I CAN'T LIVE WITHOUT MY IPHONE!"

"I'D GIVE UP COFFEE FIRST" 40%

"I'LL STOP BATHING EVERY DAY BEFORE I GIVE UP MY IPHONE" 18%

"GO A WEEKEND WITHOUT MY IPHONE? I'D RATHER GIVE UP SEX" 15%

Having review with these questions. Are you addicted to your smart phone? Do you have a smart phone? I will show you will are you addicted to it 65 percent of I phone users

surveyed said, I cannot live without my phone and 40 percent said, I give up my morning coffee first you know. I rather you know check my phone before I check my you know have my morning coffee, 18 percent said, I will stop breathing every day before I give up my I phone.

And 15 percent said, I give up go week end without my i phone I do rather give up sex. So I phone usage also seems to be becoming fairly problematic. Now I want to finish with the point that, you know we can keep adding you know I phone usage this, that. But at the end of the day what seems failure apparent is that it is not the form of the addiction, rather not the content of the addiction, but the form of the addiction.

There are some people who lose control and these are people who are liability to lose control, whether it is with cell phones or whether it is with alcohol or whether it is with drugs. And ultimately, the issue is to look at the characteristics of the people who are likely to who are at greater risk of losing control. This is what we talk about yesterday so but, I am not going to repeat that and invention lies in dealing with these characteristics; which are likely to give raise to these addictive forms of behavior i will end there. Thank you.

Can love will fall into.

This categories of addiction.

Love how are going to define love.

But love for music.

That is different.

What does fallen to the category I mean for example, is sexual addiction. Because, there are people who get addicted to either pornography or to sex; as for as love is concerned love I mean if you talking about love has an human relationship. Well I will showed there are some people who fall even out of love you know consistently. But I doubt whether that would really you know b an addiction.

Because, but love to love for music yes there are some people who may put on the headphones and listen to music all the times especially, the music. And will not doing

anything else other than that. And I suppose yes it is link to this whole thing of these are again people whose into be high risk for other problems. For example: it is fell even known the people listen to head music in keep listening to that all the time often very prone to developing problem with drug usage you know.

Then, it is not about them into drug usage all the music per say, but these are people who often use this to control the hyper activity in the brains as we talked about last yesterday. Coming control goldbricking and Cyberloafing 1 will be 2 just cut of the connection can portent like: Facebook and Twitter. But, this could also be contribute at because, this can make them angry that they are not even track with other fellows. And I think that this would also hyper productivity of the organization.

That so all it is very good question because, there is no proper answer for that. It is like it is the same difficulty that is there is in organization for example, you have in most organization you are not allow to smoke inside right. So, but organization allow their workers to outside and smoke and then, they face problem. Because you have people who are going out half the time you may be 5, 10 minute there are going out and smoking.

So are you losing more time by having love with people going out and have a smoke. Or if do not especially for people who are addicted to smoking you will have workers there who are getting very hesitated and unable to continue with their work. So what you do, so lot of age you know industry has not started you know giving in house tobacco suggestion programs saying that, let us put money in getting these people to give up smoking totally.

Now whether. that will happen with Twitter and Facebook I do not know what I am sure people can thought not to use Facebook and Twitter while on the job. You know like, most serious employees will not be sitting up ringing up their friends and having you chatting away to glory you know while, there are my job is there is there they are serious about their job.

But you are right I mean if you prevent forcibly you cut of Twitter account, which some companies do it you know access to the internet other than the side you have to visit. Because, you are on a company internet or whatever. Whether, that creates more satisfied employees or more disagreed employees.

That is something really do not know about it nobody is really done in work about that. But is good question. We talked about how internet addiction was a consequence of depression when they went into the internet addiction that the way from depression. So does it every get through a point where it finally, get board of it?

Of the internet.

Yeah, where so much explode that is load everything.

While I know of lots of people front themselves from the Facebook from Facebook. But people who are really addicted and get up 1 day say that, I am not going to use the internet any longer. I am sure there are like they are people who are really addicted alcohol 1 day say, I am not going to drink any more. But statistically I would say that guest.

Because, there is there is not any hard data about it I had it a guess they are few entire between. Because, remember when you talking of addiction what we are under what we are slowly understanding is that some people are getting addicted because of certain ways of brain functioning. And these are people who are liable get addicted whether to this or to that.

In fact, it is a well know phenomenon that in in place an alcoholic phenomenon. The people have come to give up alcohol is the issue you want to smoke and there is the whole concept of shifting from 1 addiction to another; replacing 1 addiction with another. So, the real solution probably is to get people to shift to addiction which are adoptive healthier addictions, safer addictions.

Sir is there any difference in the extra word and inter words when it comes to like internet addiction and all?

Well that is not be studied, but again I would had it a guess that people with is impulsivity, tension etcetera are more likely to be attach to any addictive behavior. Then, people who are not, but to your direct question whether there is difference between extra words and inter word. There is no hard data no body studied in please remember, these are concepts which are very very new.

Most of the world believe these concept exist and these concepts are and have been put up saying that, length studies this and see whether is really we need to get bother about it. We really need to follow this sum, but as all of you know that all of you can at least count 5 people who sit on the internet among your friends who sit on the internet more than they required to who have cut down they social inter action because of their love for the you know for scuffing.

Whatever and so to all view it is really problem in some at least 5 people you know similarly, with cell phones are not are not so much with cell phones not yet.

And sir 1 more question what about social wirelism is can that also fall into the?

What is that mean what is that mean?

Social as in as in people how are like they want to know about the life of other people. Who are on the Facebook friend less or something else? But they do not want to tell about their life so they keep their life is secret they own photographs, their own first status updates anything but, they have what is happening in other people's lives regularly, check they are prepare and all that so.

What is the term use for it?

I had so social word.

Yeah I suppose noble that is that is there in normal human invention also know.

Yeah.

I mean of these number of people who are here what asking questions they be 1 on 2 will not ask questions. Who cleanly listening to the other people asking questions, would be very cleanly observing what is happening. So, but to be fair there are some people who will you know we hidden enter be watching and like you say why are you looking are some other things; which are not very necessarily very adoptive.

I will and if you going certain sites you find there are people go social media sides pick up pictures and then they collect them and use it for not so healthy purpose. And yes that is there that is the very nature of the internet that if you choose to you can may you know stay hidden.

I am so what is the method which are been kindly employed by the US society took off the addiction?

They are certain sites not just US I mean it there in Australia and various other kind countries which are looking at providing services for internet and other addictions gambling addiction etcetera. Which is similar to I showed to some other things most of it is behavioral treatments. Basically, most of this behavioral treatment try to get you to unlearn old patterns of behavior and learn your and more adoptive pattern of behavior.

So it uses of behavioral therapy model already behavior therapy also includes looking at the cognition or thoughts. The automatic cognition thoughts which I falls into on which then propels you are behavior and should's and would's that I has in our once mind isn't it.

And sir does also change the wiring of earlier in the yesterday's documentation that when I is to 2 much addicted to drugs or say alcohol why did the hard ware bring changes?

Yes.

Does similar thing happens and does abuse also like when your I is too much addicted internet or gambling does the wiring of brain changes?

Yeah this very earlier data very earlier data. which was that there is difference between the brains of people who are addicted to some of this behavior addictions most the gambling and people who are not. Now the same question that we talk about yesterday is, whether this changes are there before or consequence of this behavior that is something which we still cannot answer. But from the experience of what we have learnt from substance gambling and substance used this order, substance addiction.

I would has I guess that this this difference in brain size, brain function existed you before people took on the behavioral you know behavioral addict. So, that it is a vulnerability rather than just consequence of this particular behavioral addiction. Anything?

If someone wants to good I kind of addiction. So, is it that they are more fall for other kind of addictions?

Yeah. They yes your are absolutely right that if 1 quiets 1 kind of addiction your also proved to developing other addictions. So, the ultimate aim will be try and deal with the basic vulnerability that exists, rather than just getting people to quit 1 additional of the other. Unfortunately at old way of dealing with addiction has been to say stop this ok. If has not been say stop this and I shall also provide you with a solution to deal with whatever is called the you 2 get addicts.

So the treatment of addiction has been like a revolving door you go in go out from the door i will come back again through the door. Now recent strategies which have which been started looking at has that is deal with the preexisting problem rather, than just looking at the tape of the ice berg it is like an ice berg you know; only a small part is visible. But if you do and look at that your ship gets and by what is the under the water.

Just 1 question to ask you have first became reductive 1 type of this, which word ultimately lead you to some other concept. Just I will say to, if I am into online will be or if I am into photography that in the suit that you have known first. I develop addiction towards internet and then, that addiction further gets a flavor of say internet gaming or photographic material?

Ok what you are talking about is the soul concept of get reduction. Which is specifically used in drug use; that the other the classical thing is that you will start on to vacuum smoking were chewing and that leads you on to other drugs. Or as was earlier taught the people who start using calamines, ganja that is the gate way to link due into others you knows more serious drugs like you know cocaine and other substances. So, that is prove to be not very useful model to follow.

Similarly, I would not really subscribe to gate way addiction even in the behavior addictions. Because, I would not think that what while chooses as the behavior is dependent on the circumstance. If you have access to gambling, you go to that. If you have access to the internet, you go to that. It is because of you are the fact that whatever this particular thing increases activity in your reward circuit you persist with that.

Because in a way it deals with this particular vulnerability and normalizes this externalizing behavior that you continue with that. Because, like I showed yesterday it seems to give you a better response, a better reinforcement. Then, it gives other people we are the people who are vulnerable. And so if continue emphasis with that and it could

be what or when you started on. That sometimes when you stop one and you are not done with your vulnerability. Then, you have to move on to another substance or another behavior. The lesson name that one who is vulnerable is one variable to any or many of his behavior or substances.