Basics of Mental Health and Clinical Psychiatry
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Lecture 27
Substance II

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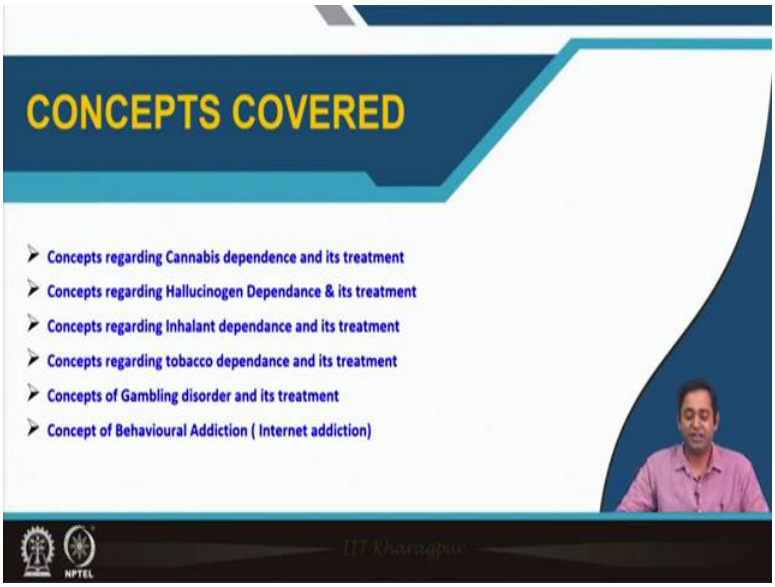

Hello everyone, let us start substance 2 disorders, addiction part 2. So, the topics which we will be covering is cannabis dependence, its treatment, the concept of hallucination, the hallucinogen disorders, its dependence and treatment, inherent dependence, its treatment, tobacco dependence, gambling disorders treatment and a very brief introduction of behavioural addiction and its treatment that is internet addiction, sexual compulsive behaviours and all.

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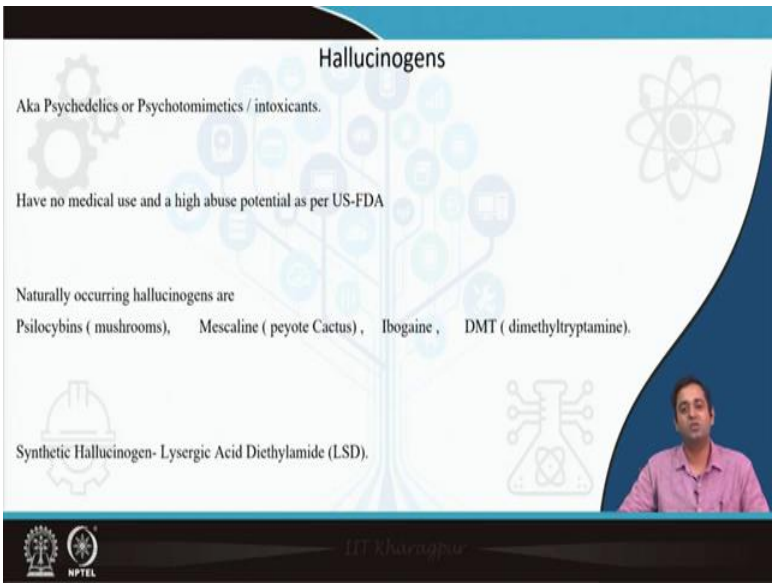

Now, what is a hallucinogen? Hallucinogens are sometimes known as psychedelics or psychotomimetics or intoxicants. They have actually no medicinal use as told by US-FDA, U.S Food and Drug agencies and they actually have told that these kind of drugs they hold high abuse potential. Naturally occurring hallucinogens are Psilocybins present in the

mushrooms, the Mescaline, Ibogaine, DMT that is dimethyltryptamine. Synthetic hallucinogens among them the most commonly available is lysergic acid diethylamide.

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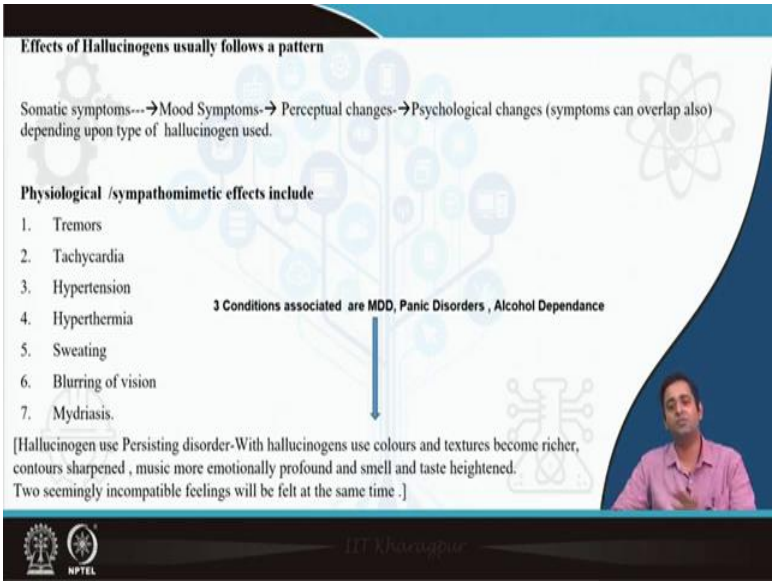

Now, what are the effect how these hallucinogens they work? It actually goes to a pattern of somatic symptoms initially, whenever the drug is being procured by the person, the effects being manifested are in a form of sequence of pattern which is being followed, now it does not happen primarily, mandatorily, but most of the time it is being observed that it goes to a sequence of events.

First the somatic symptoms are observed, later the mood symptoms, next is the perceptual changes and later on the psychological changes, symptoms sometimes can overlap also. So, initially mood symptoms can occur or perceptual changes can occur followed by somatic symptom, so depending upon the substance which you are the type of hallucinogen which you are taking.

What are the sympathomimetic effects which the drug manifests with? These are tremors, tachycardia, your increased heart rate, there is hypertension increase in blood pressure, there is hyperthermia where your temperature increased body temperature rises to more than 37, 38.1 or 41.1 degree Celsius, there can be sweating and blurring of vision, diplopia with at times associated with Mydriasis.

Now, Hallucinogens use persisting disorder is commonly observed with this hallucinogen substances, like whenever the substance, this hallucinogens they are being procured or when the effect is being observed for a couple of hours or a couple of days and when you stop this

substance, when you are not taking the substance for at least period of 2 to 3 days or 1 week or sometimes 2 weeks or a month, the effect of halogens is being manifested even when you are not under the influence of this drugs.

Now, how are they manifested? At times the colours they become richer, the textures they become more prominent, they are more sharpened, the geometrical shapes when you are seeing when you are watching a TV, when you are talking to a person, those kind of visual images though they become more enriched and you become emotionally more labile emotionally labile, you tend to cry you tend to laugh at times your smell and taste sensations are heightened at times.

And two seemingly compatible feelings like I was telling you might laugh and you might cry, you might get emotional you might, so there is an emotional ability which is present in the patient who is who has undergone or who has taken the hallucinogen in the past. So, there is this effect of hallucinogen which is persisting till now even though the substance is not being taken by the person.

Now, three conditions which are associated with this hallucinogen taking sever, the persons who are actually taking the hallucinogens these are MDD, MDD is basically major depressive disorder, the unipolar depression, it is not a bipolar depression, so whenever you come across this term MDD it is it means unipolar depression, panic disorders and alcohol dependence.

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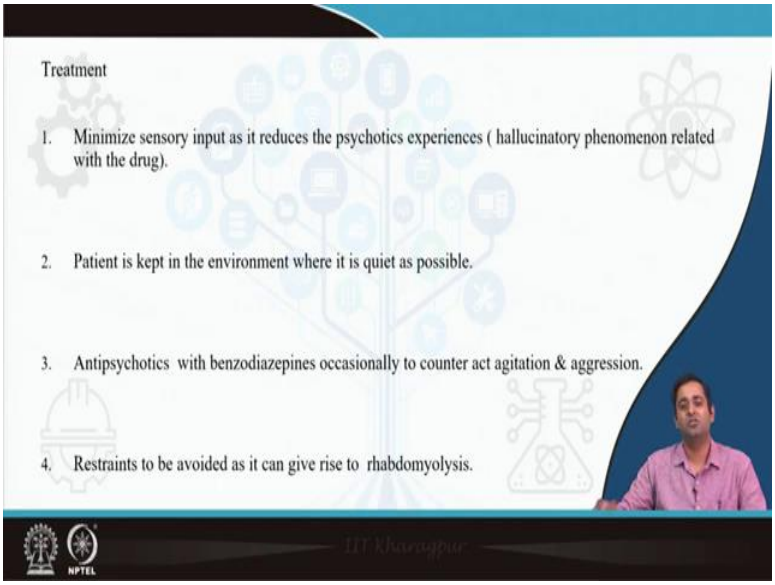

Now, how can we treat this hallucinogen taking substance behaviours? By minimizing sensory input, now how is this minimized sensory input very important, now because there is no available antidote for this substance, so the primarily we should.

And the second most common, the second most important thing is that since you are having hallucinatory experiences, your visual hallucination, auditory hallucinations at times tactile, so the sensations seeking phenomena your stimulus has to be decreased that is why you are kept in a dry dark and quiet room, where there is no stimulation around, there is no physical stimulus you cannot see you cannot hear anything, so that can decrease the hallucinatory experiences which the patient might be experiencing.

So, at times antipsychotics are given in order to counteract those hallucinatory experiences along with benzodiazepines and restraints which are actually given should be avoided because whenever there is muscle contraction when the patient is being restrained you have been tied hands and arms legs, your muscle contracts, muscle contract leads to lot of like there is calcium release from sarcoplasmic reticulum which is further being which further progresses go on to develop Rhabdomyolysis leads to acute renal failure. So, in order to protect all those sequence of events those (())(6:14) events we are actually avoiding the patient to restrain.

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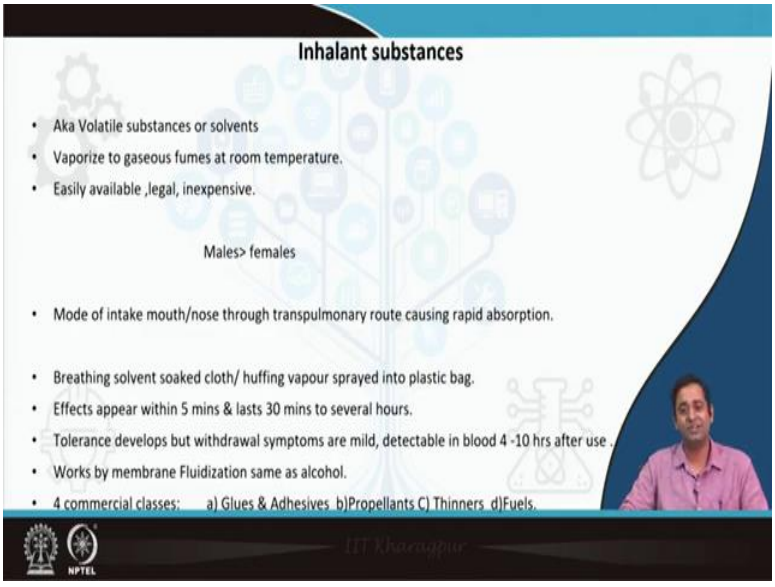

Let us come to inhalant substances, now we have seen the persons who are taking inhalant substances most commonly on the road where the child pick pocketer or who are collecting some plastic bottles or polyethylene and all you must have seen on the streets also in traffic signals, the small child they these are the ones who actually go on to develop the habit or the

dependence of inhalant substances, because it is readily available, these are very cheap and they are actually legalized, because it is available in the form of printer inks, fuels, your gasoline fuels, your thinners, paper rings, it is readily available.

Males they commonly do this kind of substance taking behaviour inhalant substance taking behaviour. How are they taken? They are taken orally, they are taken through nose and the drug goes by transpulmonary route and there is rapid absorption. So, this is how there is a faster absorption of the drugs, as compared to your alcohol or being smoking, so directly it is going bypasses the liver and directly entered lungs and goes to the brain.

Now, breathing solvent sometimes soaked or huffing vapour is sprayed onto a plastic bag, effects appear within 5 minutes or last 30 minutes to several hours, tolerance develops but withdrawal symptoms are mild and detectable in blood 4 to 10 hours after use, it works by membrane fluidization to mechanism use by membrane fluidization, alcohol and inhalant substances they both work by membrane fluidization. There are 4 commercial classes as I was telling you, glues and adhesives, propellants, thinners and fuels.

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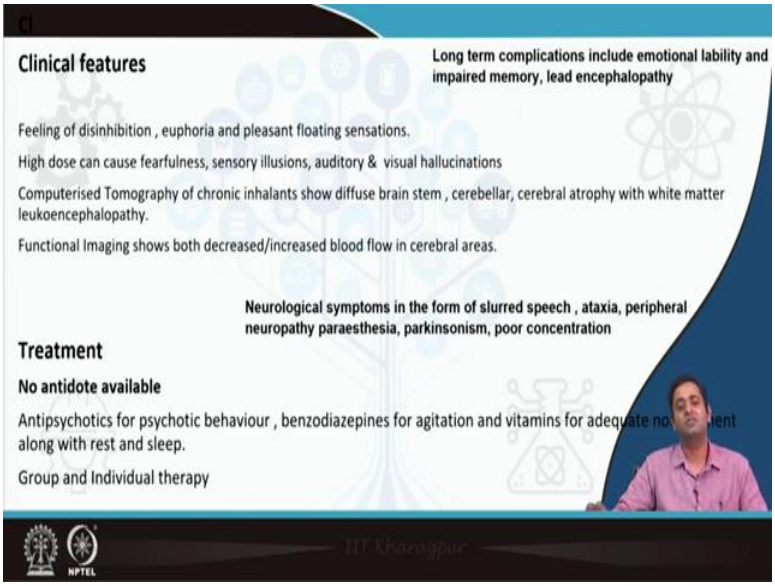

What are the clinical features? there is feeling of disinhibition, you tend to lose your control, you are very high, your mood is very much elevated, high dose can cause fearfulness sensory illusions, auditory and visual hallucinations and serious kind of chronic inhalant has showed there is diffuse brain stem, cerebellar and cerebral atrophy with white matter leukoencephalopathy, so there is white matter loosing of the white matter traces tracks. Functional Imaging shows increased and decreased both at times blood flow in cerebral areas.

Long term complications of this inhalant taking behaviour leads to emotional lability, impaired memory, and lead encephalopathy. Neurological symptoms in the form of slurred speech ataxia, peripheral neuropathy, paraesthesia, parkinsonism and poor concentration, these are basically neurological symptoms which patients can develop when the inhalant substances are being taken for more than a year or two to three years. Since, there is no antidote available antipsychotics are given along with benzodiazepines in order to counteract the psychotic phenomena as well as agitation and irritability.

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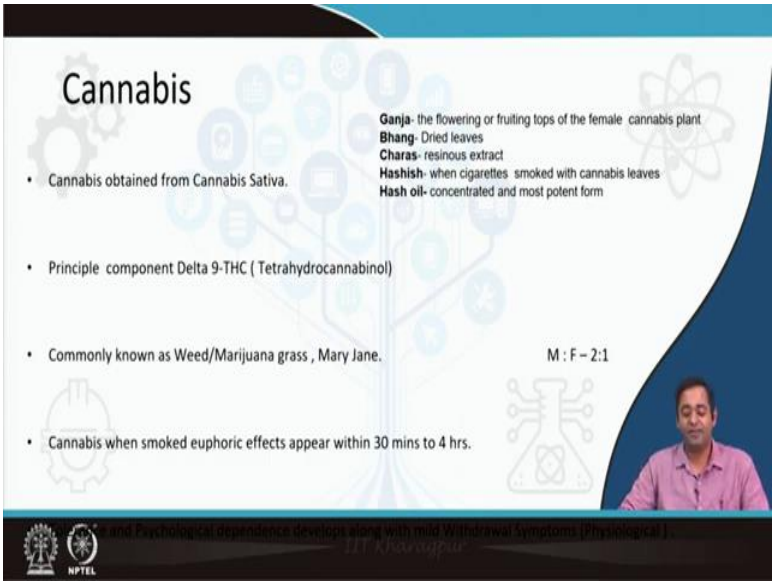

Let us come to cannabis, marijuana, now this particular plant from which cannabis is obtained is Cannabis Sativa, this plant, its all forms all the parts of the plant is actually being consumed in order to get pleasurable effects, now what are those, now Ganja is actually the

flowering or the fruiting tops of the female plant, Bhang is the dried leaves, Charas is the resinous extract which is prepared and taken in order to get high or pleasurable feelings, Hashish is when the cigarette is smoked with the cannabis leaves and hash oil is the concentrated or the purest form of the cannabis plant.

Now, commonly known as Weed as we all know Marijuana grass or Mary Jane, cannabis when smoked has euphoric effects which appears within 30 minutes to 4 hours, males they commonly do this.

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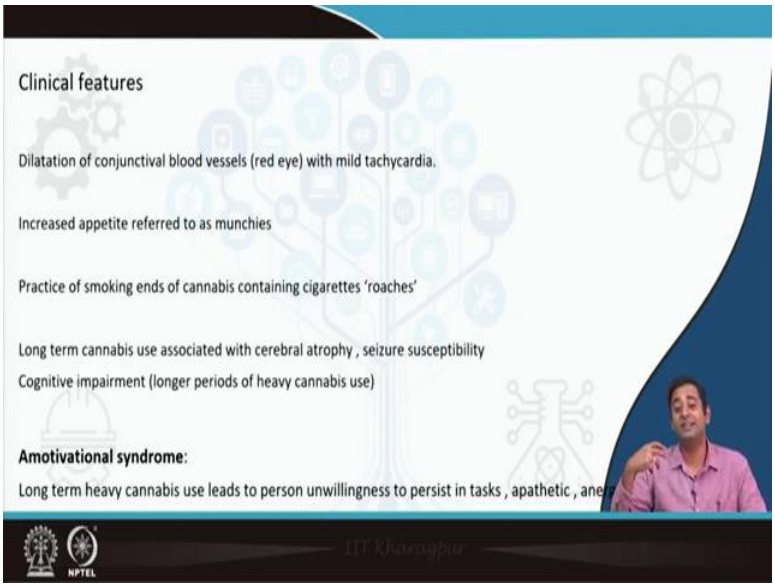

What are the clinical features? Dilatation of conjunctival blood vessels, this is the initial, initially when the patient is under the inference of this cannabis drugs there is dilation of the conjunctival vessels in the eye, there is red eye which is being observed with mild tachycardia increase in the heart rate.

The persons go on to develop a voracious appetite whenever they consume cannabis and their long term used associated with cerebral atrophy, seizures sometimes happen and there is cognitive impairment when there is long when the patient actually forgets his past memory experiences whenever there is a heavy cannabis which is being taken by the patient for some five to six years.

Now, a special kind of syndrome an Amotivational syndrome is being seen for long-term cannabis smokers, where the patient does not want to work, there is unwillingness on the part of the patient that they do not want to work, they do not want to do any kind of like normal

day-to-day life activities and there is the mood which is like a dysphoric the effect is a dysphoric kind of effect and there is no energy left with the patient to do any kind of work.

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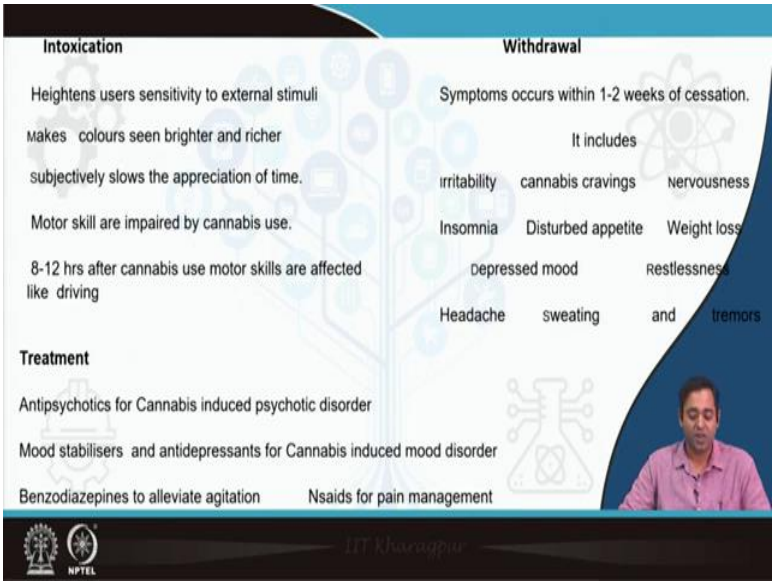

What are the features for intoxication or withdrawal? For intoxication there is heightened sense of stimulation, like the patient can have hallucinating experiences can suffer from delusions as well, motor skills are impaired, 8 to 12 hours after cannabis use motor skills are affected by like if you are driving and all. What are the withdrawal symptoms? They occur within 1 to 2 weeks of cessation, it includes irritability, headache, cannabis cravings, nervousness, disturbed appetite, weight loss, depressed mood, restlessness, headache sweating.

So, how do you treat? Antipsychotics because of delusion and hallucination which the patient might suffer we are giving antipsychotics to intervene to treat those kind of conditions at times there can be cannabis induced mood disorders you patient can become and go on to develop a manic episode, so for that mood stabilisers like Valproate or Carbamazepine are indicated, Benzodiazepines are given to relieve the agitation.

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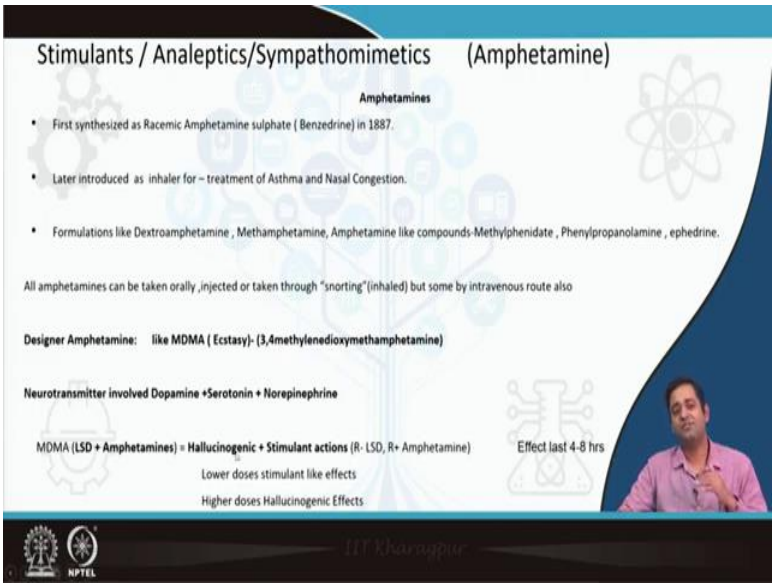

Let us come to some Sympathomimetics Analeptics or Stimulants, first synthesized as Racemic amphetamine, in the name of Benzedrine in 1887, and later introduced as a inhaler for treatment of asthma and nasal congestion, all Amphetamines they are taken orally or through snorting, but some are taken by intravenous route also. What are the design amphetamines which are readily available, MDMA that is Ecstasy and neurotransmitter involved is dopamine, serotonin and norepinephrine, all three are involved.

Now, how does MDMA act? It is the hallucinogenic experiences plus the stimulant kind of action, MDMA gives both the kind of actions, lower doses have stimulatory kind of effect and the higher doses have hallucinatory kind of effect.

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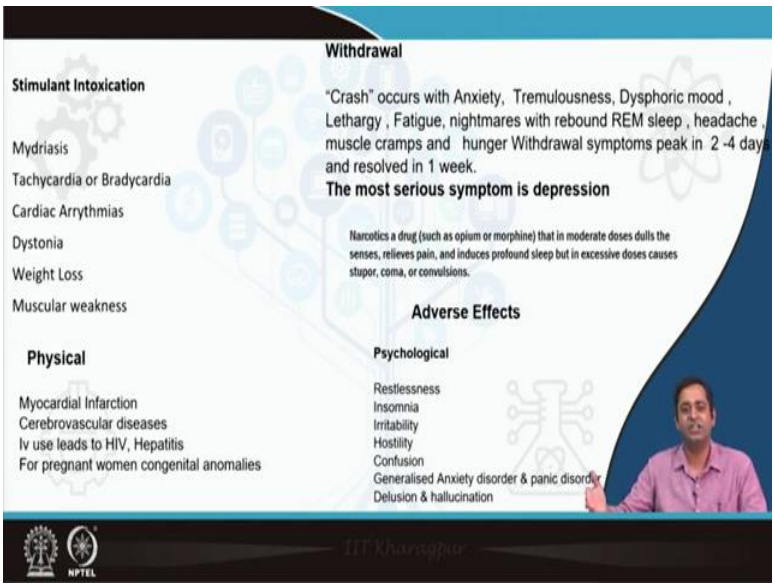

What are the symptoms of stimulant intoxication? They are Mydriasis, there is dilatation of the pupils, tachycardia increased heart rate or it can be decreased heart rate, dystonia cardiac arrhythmias there can be changes in the ECG, weight loss and at times muscular weakness.

In terms of withdrawal when the patient is not having those substance, crash occurs, there is a dip in the mood with anxious or apprehensive kind of feeling, Tremulousness dysphoric mood, fatigue, nightmares and sleep related issues along with headache, muscle cramps. The most serious symptom is depression for who are not taking the substance.

Now, physical and adverse, the adverse effects are basically divided into physical and psychological part, the physical part where the patient can suffer from myocardial infarction, Cerebrovascular disease, IV use can leads to HIV, hepatitis, for pregnant women congenital anomalies can also occur. What are the psychological adverse effects? Restlessness, insomnia, as we have seen hostility, agitation, confusion all those kind of things can be observed.

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Now, what is tobacco? Tobacco is widely and is easily available of all, but it is costly of all the dependence also. The psychoactive substance of tobacco is nicotine, how it acts mechanism of action, it is to the acetylcholinergic receptors and the effect is being because of the norepinephrine and epinephrine receptors also, there is increased release of vasopressin and beta endorphins.

Withdrawal begins the withdrawal of nicotine that is it begins within 2 hours of smoking the last cigarette, peak in 24 to 48 hours and can last for weeks or months, symptoms include,

tension, irritability, insomnia, sometimes appetite GI related abnormalities, paradoxical problems, sleeping in decreased motor performance and increased muscle tension.

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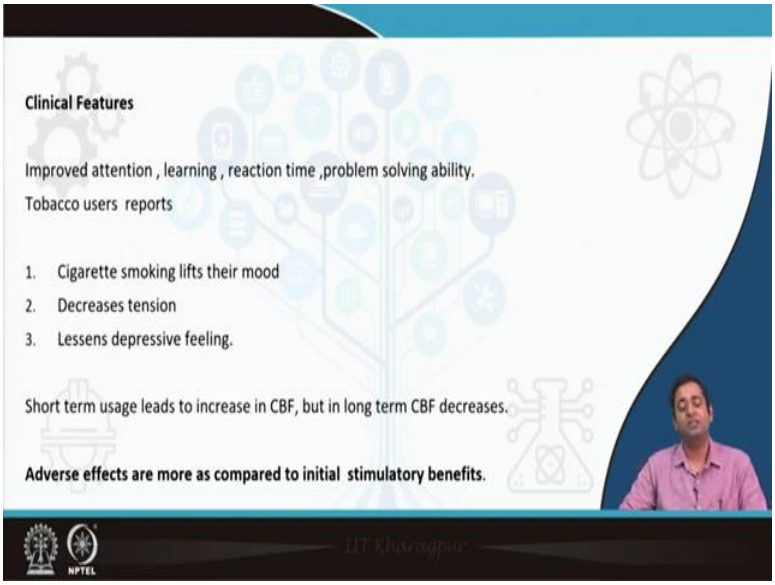

The clinical features are improved attention, so we have been like we have observed people who have smoked and who are smoking from the past 10 years, 20 years, they have always been trained that we feel good when we smoke, there is some increased kind of increase attention we tend to be more attentive when we smoke and there is increased efficiency of the work which we are doing.

So, there is a reaction time is decreased, there is improved memory as being told by the patients, problem solving ability increases as they have told. So, cigarette smoking lifts their mood, it decreases tension and it lessens depressive feelings. Short-term use leads to increased cerebral blood flow, but in the long term it decreases the cerebral blood flow. So, adverse effects are more as compared to initial stimulatory effects.

So, whatever the tobacco users who are taking it from last 10 years, 20 years, whatever they tell you it is initially for those initial few months or years, but later on those benefits are turned into deleterious consequences.

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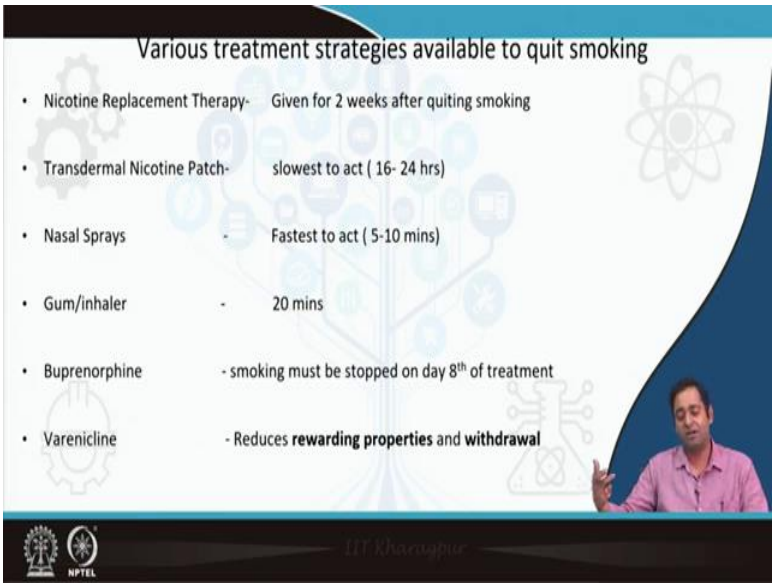

So, what are the various treatment strategies which is available to quit smoking? First is nicotine replacement therapy by given for 2 weeks for quitting smoking, what are these and the forms are patches available in the forms of patches, lozenges, gums, inhalers and lastly when all these modalities are not giving relief to the patient we go and give drugs like Buprenorphine, Varenicline.

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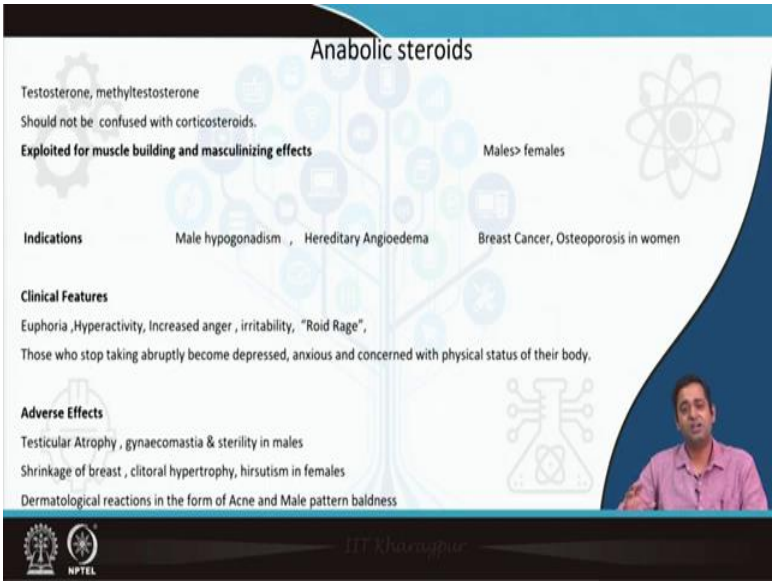

Anabolic steroids, anabolic steroids should not be confused with corticosteroids, they are exploited, they are used for basically muscle building and masculinizing effects means they commonly abuse this kind of steroids and indicated for male hypogonadism, Hereditary Angioedema, breast cancer, osteoporosis in women. What are the clinical features associated?

These are Euphoria, hyperactivity, increased anger, irritability, those who stop taking these drugs they become depressed, anxious, concerned with physical status of their body.

What are the adverse effects associated with anabolic steroids? Testicular atrophy, gynecomastia and sterility in males, there is shrinkage of breast, clitoral hypertrophy and hirsutism in females and dermatological skin related problems in the form of acne, or male pattern baldness.

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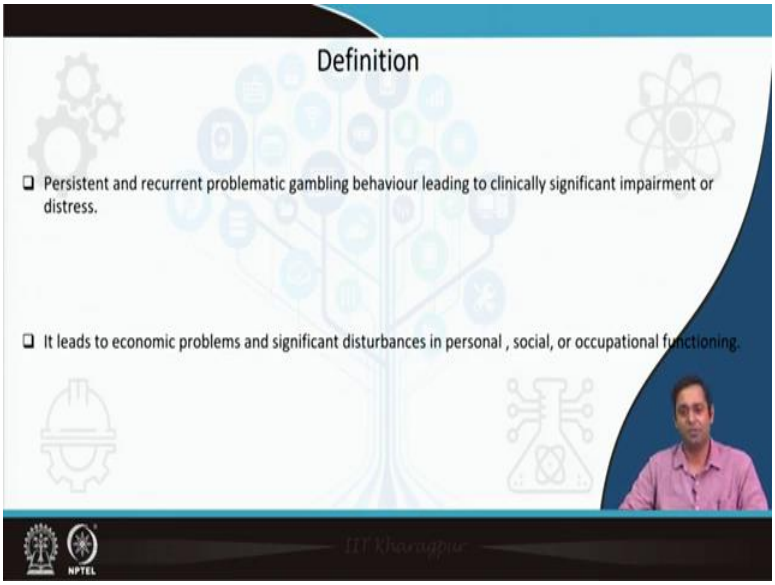

Now, gambling disorder it was kept initially as a behavioural addiction, under behavioural addiction in the DSM early sections of the DSM, but later on in DSM-5 this has been moved into the substance taking part. So, this addiction is actually divided into a substance addiction and non-substance addiction, so this actually is a addiction where you are not taking a

substance but it is a behaviour which is being manifested in the form of or it is giving rise to all those kind of symptoms where a normal substance, normal drugs gives rise to.

So, it is a persistent and recurrent problematic gambling behaviour leading to clinically significant impairment or distress. It leads to economic problems like financial issues and significant disturbances in personal, social and occupational functioning.

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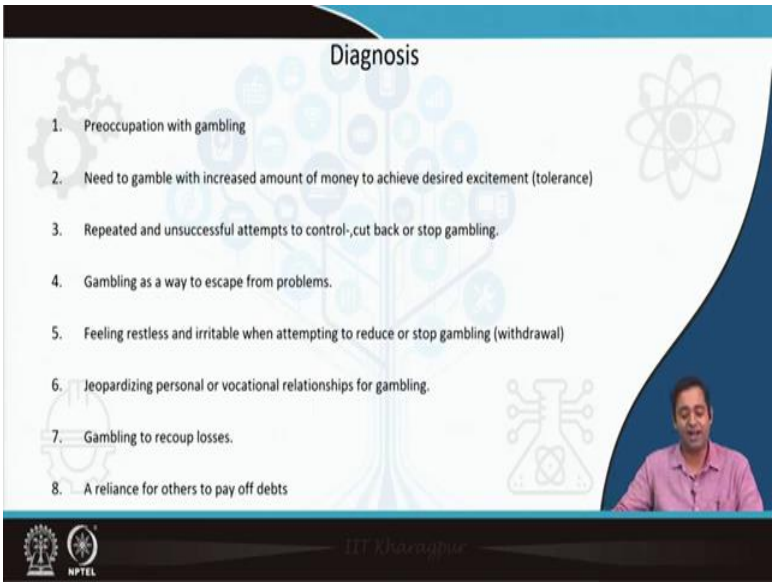

Now, what are the diagnostic criteria's? There is preoccupation with gambling just as with substances, need to gamble with increased amount of money, so that there is a tolerance which is also present here, repeated successful on attempts to stop the gambling in case of alcohol, smoking, so all those criteria’s, they actually simulate give rise to similar kind of features.

Feeling restless and irritable when attempting to reduce or stop gambling, jeopardizing personal and vocational relationships for gambling, gambling to recoup losses, and a reliance on others to pay off the debts which the patient has taken over in order to gamble more.

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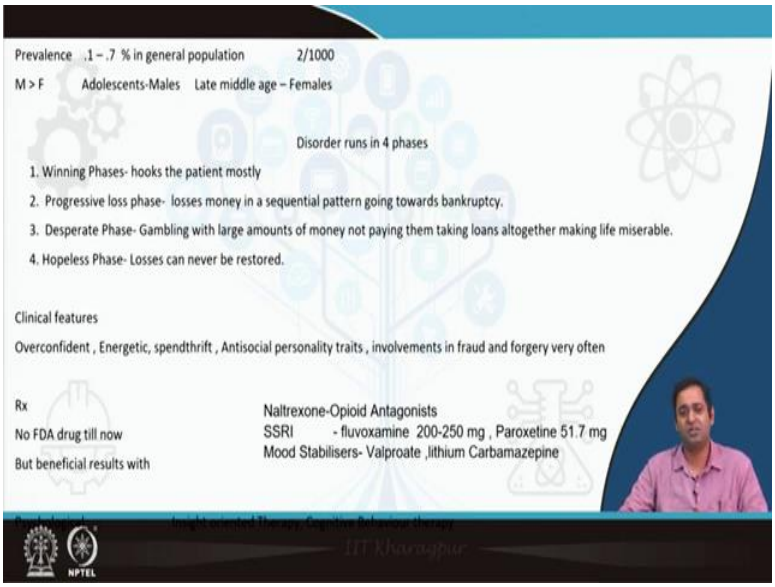

The prevalence is point 1 to 7 percent in general population, males they commonly do more, now disorder runs in 4 phases basically, there is winning phase when the patient actually wins more in the gambling that is then there is then there comes a progressive loss phase when the patient when the person actually lose a progressive amount of the when there is more frequent losses of the money which happens and resulting into bankruptcy of the person.

Last is the third stage is when the patient is desperately taking large amounts of debts in order to counteract in order to counter this the losses which he had suffered in the past, so this actually gives rise to a vicious cycle and the debt increases further and last is the hopeless phase where the losses can never be restored.

So, the debt which he has taken previously from all those months of gambling has incorporated into a huge sum of money which the patient, the person who is gambling cannot repay it back. So, this happens with persons who are overconfident, energetic, spendthrift, with antisocial personality traits, antisocial personality traits like they are not emotionally moved by the person's like they are not being controlled, they are very impulsive, they have lots of legal cases associated with them, now there are involvement these persons they have a lot of involvement in frauds kind of thefts and forgery very often.

Now, since there is no FDA drug available it is basically treated with like there are evidences literatures that SSRI and Naltrexone like opioid antagonists, they are found to be proved to be beneficial for these patients and for impulsivity and those liability of the mood, mood stabilizers in the form of Valproate, lithium or Carbamazepine are indicated.

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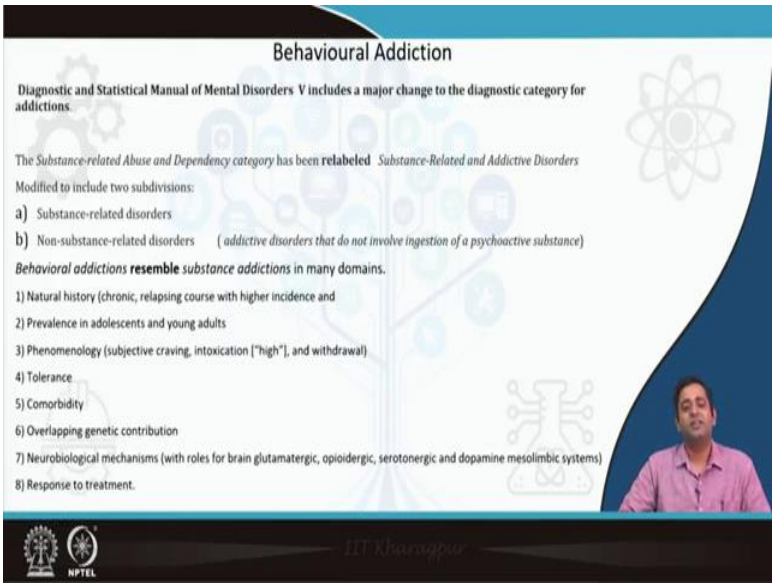

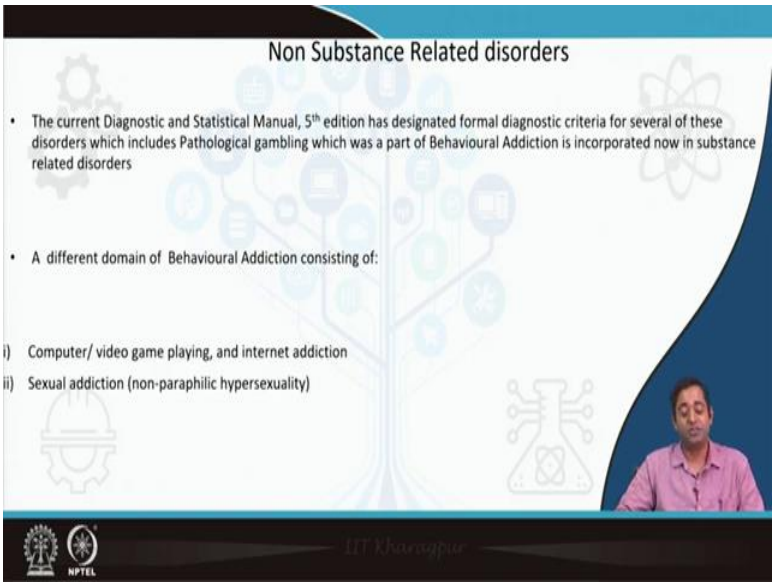

Now, as I was telling let us come to behavioural addiction, this DSM-5 it has designated formal diagnostic criteria for several of these disorders which includes pathological gambling which was a part of behavioural addiction has been incorporated as I was telling into a substance related disorders. Or just behavioural addiction it includes internet addiction, gaming addiction and sexual addiction.

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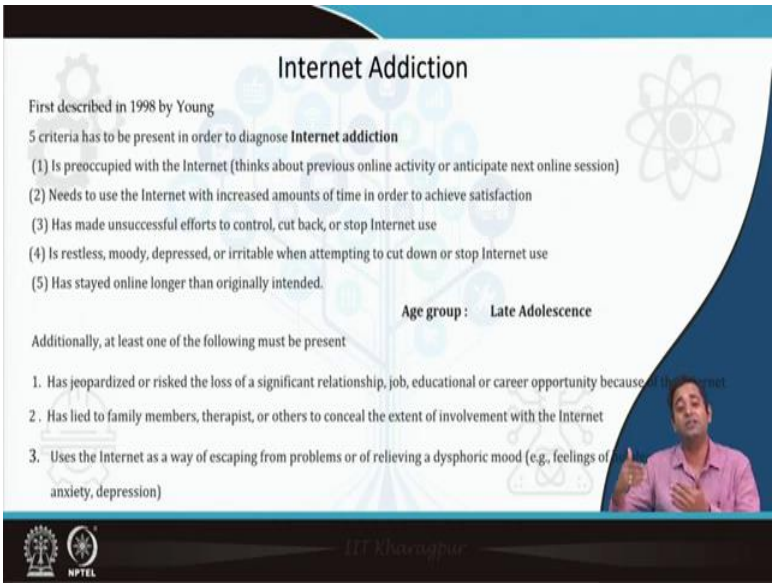

Internet addiction was first described by in 1988 by Young, it has 5 criteria's in order to diagnose a person suffering from internet addiction, first is it is being the person has been preoccupied by the use of internet, like he thinks all the time about being online like he should be using the internet at all times, needs to use the internet with increased amount of time in order to achieve satisfaction has made unsuccessful efforts in order to control or cut back or stop internet use is restless, moody, depressed, irritable when attempting to stop the use and has stayed online longer than the originally intended and he which he was wanting to.

So, there are some other set of symptoms which can be or cannot be present that he might be jeopardizing or risking the loss of a significant relationship as in the dependence criteria mentioned in the ICD, there is narrowing of the rapper tier, so you are continuing the procurement of the substance and taking those substances despite of the deleterious consequences the patient might be suffering from. So, all those things are present here also.

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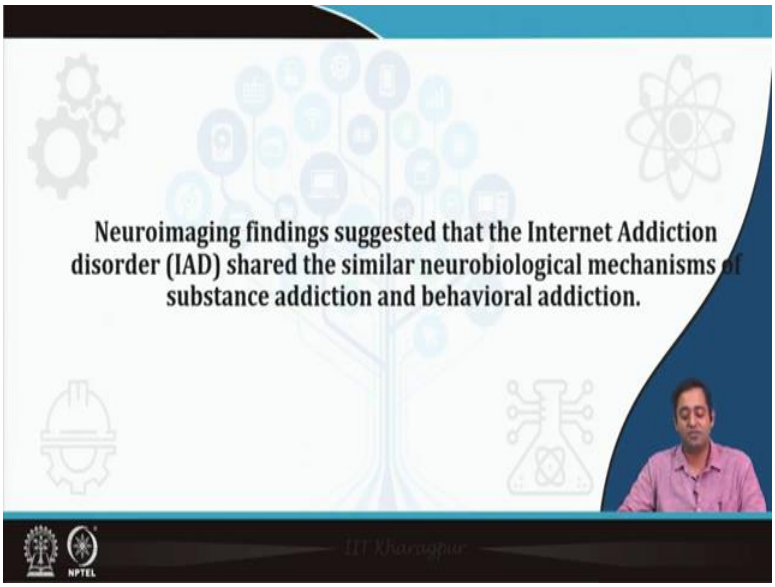

Now, the Neuroimaging findings suggested that internet addiction, the internet addiction disorder shared a similar kind of neurobiological mechanisms which is present in substance addiction, so they both are the neuro behavioural the mechanisms the imaging the features which is present is giving a similar kind of picture for both the substance addiction and as well as behavioural addiction.

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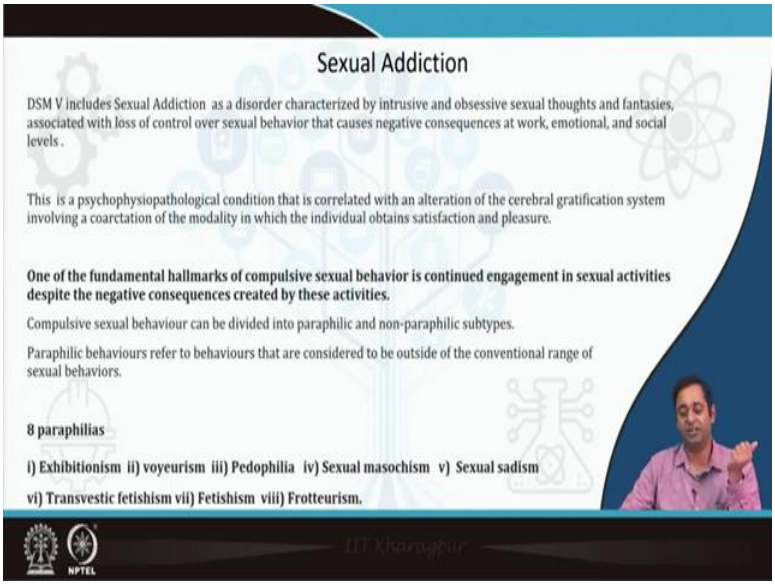

Now, sexual addiction is a kind of disorder characterized by intrusive and obsessive sexual thoughts and fantasies associated with loss of control over sexual behaviour that causes negative consequences at work, emotional and social levels.

It is a psycho physio pathological condition there are three technical terms which is used here, psycho, physio and pathological, pathologically as you know its abnormal process and physiological means a normal process which has turned into a abnormal process and psychological associated with the psychosocial factors that is correlated with the alternation of the cerebral gratification system involving a coarctation of the modality in which a individual obtains satisfaction and pleasure.

One of the fundamental hallmark is that the person is continuing in engaged, he is continuously engaged in sexual activities despite the negative consequences created by these activities. Now, the compulsive sexual behaviours, they are divided into two paraphilic and non-paraphilic, paraphilic is you have all sorts of paraphilias, like exhibition you are openly doing sexual act.

Voyeurism you are secretly seeing the person who are involved in sexual acts, paedophilia is when the adult is dominating over the child and doing a sexual act and sexual masochism is when the person who is actually undergoing a lot of pain, so that gives him in the sexual act he undergoes the he plays the role of victimization and he enjoys that and there is sexual gratification, sexual sadism when he inflicts pain into the other person who is involved in sexual act.

Transvestic fetishism is when you have, when you are wearing the dresses of the opposite sex and you are gaining gratification and fortteurism when you are touching the other person's physical body parts unintentionally. So, these are the 8 paraphilias, where the compulsive sexual behaviour can present with.

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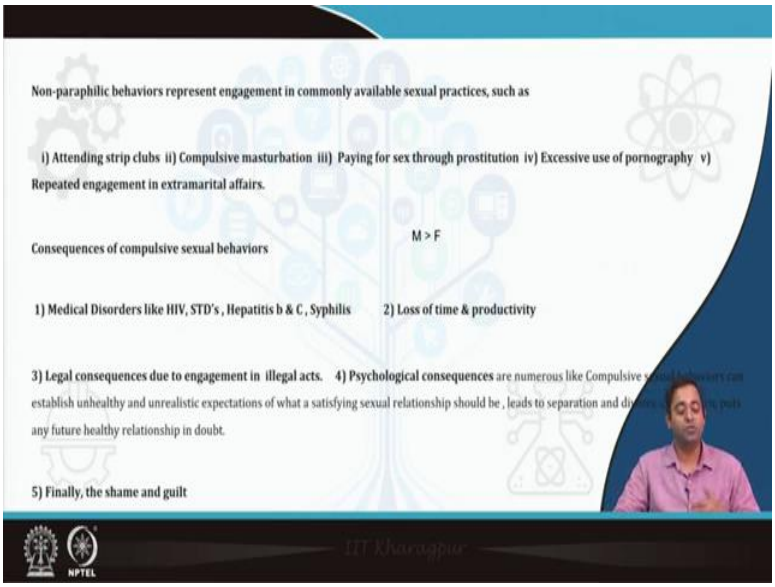

So, what are the non-paraphilic behaviours? They represent engagement in commonly available sexual practices such as attending strip clubs, compulsive masturbation, paying for sex to prostitution, excessive use of pornography and repeated engagement in extramarital affairs.

Now, there are relevant consequences, what are these? These are medical disorders which can occur HIV, STDs, syphilis all those things hepatitis, there can be legal consequences due to engagement in illegal acts, psychological consequences are numerous like compulsive use, establish unhealthy and unrealistic expectations of what a satisfying sexual relationship should be, leads to separation divorce and in turn puts the future healthy relationships in doubt. Finally, there is a shame and guilt.

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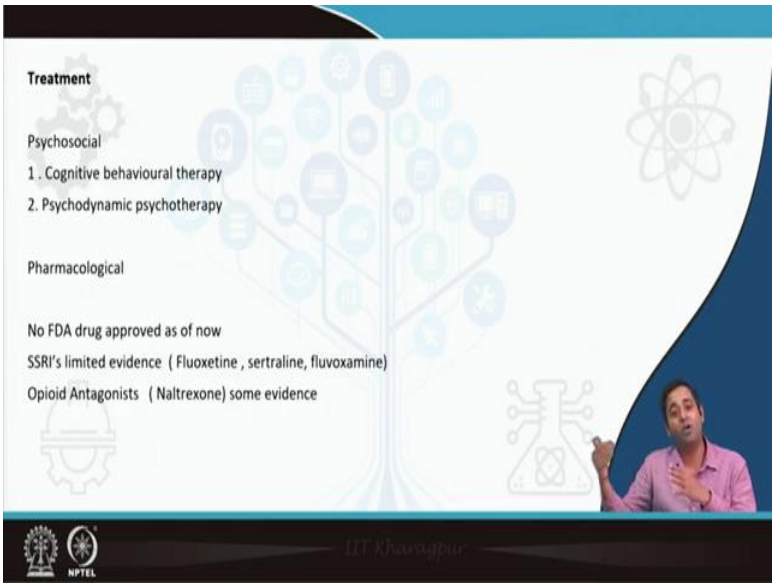

What are the treatments available for this, psychosocial and pharmacological, what are the pharmacological treatment, now there are no FDA drugs approved as of now but there are some evidences where SSRIs commonly (())(27:27), fluoxetine, sertraline they are giving good results along with opioid antagonists as naltrexone.

In terms of psychosocial therapies cognitive behavioural therapy and psychodynamic psychotherapy, now in case of cognitive behavioural therapy what it does is that your irrational beliefs, your cognitive distortions, like maximization, minimization, selective abstraction, your belief system where the therapist tries to change your belief system your thought process the way you think they are actually maneuvered in order to have alternate kind of solutions available.

So, this is how the cognitive behavioural therapist the therapy goes on, now what is psychodynamic psychotherapy? Psychodynamic psychotherapy is done where the patient might be having some conflicts in the past and the therapist tries to manoeuvre those go back in time and see with what relation the patient was having the person was having conflict with whom the person was having conflict with he can be having conflict with your parent, your child, colleague, your teacher, brother, sister, anyone.

So, therapist tries to see what was the condition which actually resulted into those conflicts, try to mend those relationships and seek alternative responses, seek those behaviours, how do they change those behaviours and change their belief systems, ultimately resulting into a good life which is devoid of those consequences and can have a normal family life.

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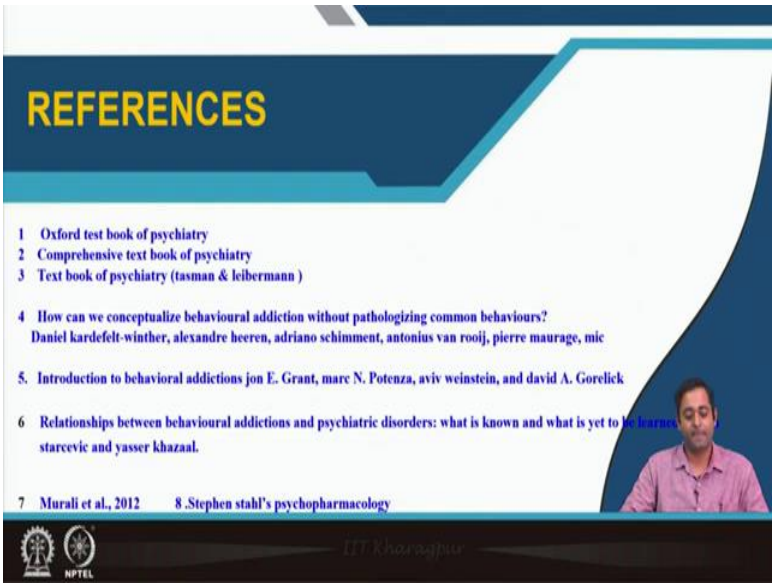

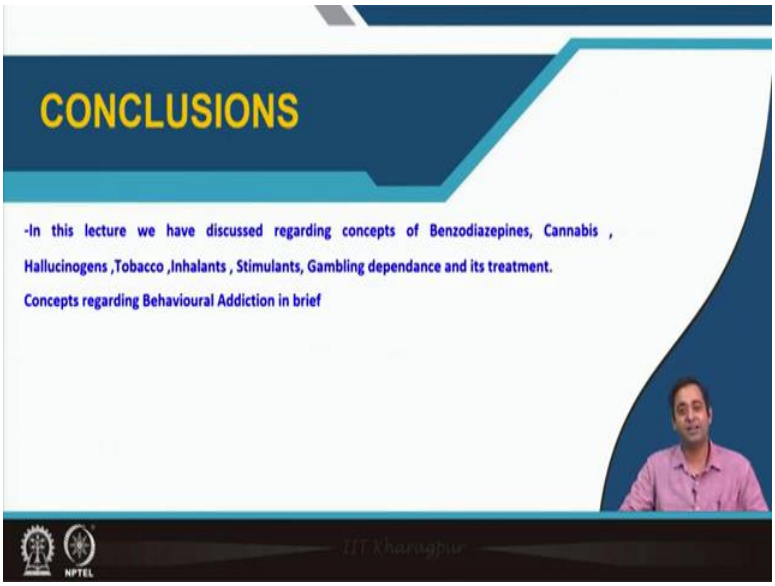

Now, in this lecture, we have discussed regarding the concepts of cannabis, hallucinogens, tobacco, inhalants, stimulants, gambling dependence and all related treatment associated with it. Thank you.