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NAADAC
CHASING INTENSITY: STIMULANT,SEX,
AND THE SEARCH FOR CONECTION

FRIDAY, NOVEMBER 6, 2020
11:00 A.M. - 1:00 P.M. CT

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>> JESSICA O'BRIEN: Hello, everyone, and welcome to today's webinar on chasing intensity, stimulants, sex, and the search for connection, presented by David Fawcett.

I am so happy that you guys can be here with us today. My name is Jessie O'Brien and I'm the training and professional development content manager for NAADAC, the association for addiction professionals.

I will be the organizer for this training experience.

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We have our very own web page that houses everything you need to know about that particular webinar. Immediately following the live event you will find the CE quiz link on the exact same website you used to register for this webinar. That means everything you need to know will be hosted on the website.

We are using go to webinar for today's live event. You're going to notice a go to webinar control panel, it looks like the one the slide which you can use anytime to give us questions, look for the handouts, you can minimize or maximize it using that little orange

arrow there. We're going to gather the questions and give them to our presenter during the live Q and A. You will see the Q and A -- the questions box right there, if you expand it. Feel free to type your questions in there, and I will collect them and deliver them to Dr. Fawcett at the end of the webinar. Lastly under the questions tab you're going to see another tab that says handouts. You can download the Power Points slide and a user friendly instructional guide. Make sure to use the instructions in the handout.

All right. So let's get to our presentation. I want to take this opportunity to introduce you to our presenter. Dr. David Fawcett is vice president for clinical programming at Seeking Integrity. Which develops and operates treatment programs for sex, porn, and chemsex addiction. He specializes in sexual behavior and is the author of the award winning book, lust, men, (indiscernible) called addiction Q and A, and a podcast series called sex, love, and addiction, healing conversations for gay, bisexual and transgender men.

Dr. Fawcett is the recipient of numerous awards including the 2018 (indiscernible) award. Most recently he produced crystal city, a 90 minute documentary that follows the struggles and successes of eight gay men in recovery from crystal meth in New York. So NAADAC is really delighted to provide this webinar presented by such an amazing leader in the field. So Dr. Fawcett, if you want to turn on your camera, unmute yourself, I'm going to hand this over to you.

>> DAVID FAWCETT: Thank you so much, Jessie. Appreciate it so much.

Okay. So we have a couple of polling questions just here at the beginning to give us an idea of who's in attendance.

And there we go.

>> JESSICA O'BRIEN: And I'm going to -- go ahead. You can introduce it.

>> DAVID FAWCETT: Okay. So yeah. Just to give me a sense of how long you've been working in the field. You have different selections there. That would be great to have a sense for me. There will be another question actually specifically about chemsex in a moment.

>> JESSICA O'BRIEN: People are eagerly responding. It's -- we'll be done pretty quickly. Just keep your answers coming in. How long you've been working in the field. I'll give about five more seconds for people to respond.

Awesome. I'm going to go ahead and close the poll and we will share the results. Give me one second.

>> DAVID FAWCETT: Great. Okay. Interesting there. We have a -- quite a few -- about 30 in the audience has quite a few years in the field which is great. And we have new in the field. It's a nice broad spread. That's great. So that will be very, very useful for me to kind of gear some of this material.

And so the next question is really the familiarity with chemsex and you may not even be sure what that term means yet. You will in a few minutes, but just check your familiarity. Basically it's co-occurring drug use and sexual behavior, when they're paired as one addiction process, as for example meth and cocaine, but that's a much broader situation than those two scenarios, and we'll get to that in a moment.

But so the co-occurring disorders obviously aren't new, but this particular phenomenon with sex is -- has been reintensifying in recent years.

>> JESSICA O'BRIEN: I'm going to go ahead and close the poll, and then share the results with everybody.

>> DAVID FAWCETT: Okay. Wow. Okay. So very familiar, about 15 percent. Somewhat familiar, 25. Not familiar but heard of it, about another quarter, and then about a third of the people not familiar, never heard of it.

Well, great, well even better, thank you for attending the workshop today, because sometimes people might not know what it is.

So let's jump right into it.

Let me get back here. There we go.

The objectives today, we'll describe five clinical symptoms of stimulant misuse and co-occurring hypersexuality and we'll demonstrate the understanding of the relationship between trauma and the need for intensity. There's very characteristic profiles of people, especially people that gravitate towards amphetamines and combine with sex in terms of their trauma history and PTSD, we'll talk more about that in a moment. Finally participants will assess treatment modalities for paired sex and stimulants and that's one of the things that I really like to do when I train is that this particular phenomenon of mixed sex and drug use needs slightly different alteration of our standard treatment modality so I'm glad people are here today so I can share what I've learned in the field about that.

So our agenda today, and it's kind of divided in sections. And then may pause, some of them are quite short but I may pause periodically about questions in the breaks, little breaks between the sections, most of the questions I'll try to answer at the end. We'll just see how the flow goes.

But anyway, what is chemsex, I know about a third of you had that wonder. Who is effected by it, what's it all about, what are the drivers of it that we see, what are the connections between chemsex, intensity and trauma and digging into that.

I want to cover methamphetamine but in the majority of cases of chemsex we see methamphetamine. And it has different properties (indiscernible) so I want to talk about that in some detail today and then we'll talk about how these things get fused together and then finally spend some time on best practices for this approach.

So I always put this slide in in the beginning, just creating safety. It's a nice soothing a little waterfall there, both to get

everybody in -- all together here in our collective space online in this webinar, but also as a way to model for clients, because clients who are experiencing chemsex or especially amphetamine use in general are highly triggered by visual images and graphic talk, and so I do this just to kind of help everybody breathe (indiscernible) avoid for clients, pictures of drugs or paraphernalia or anything like that that might be triggering because they're highly sensitized to it and that's what we'll with the brain, increase visual memory so it's a way to bring us together and also to model for our clients.

So what is chemsex? This kind of fusion of drugs and sex. It's really what we would call co-occurring drug use and sexual barf. It's chemsex is a shorthand term. It kind of, once you understand it's describing this fused drug use and sexual behavior, the term makes sense. It's what we find is that these are intensity related addictions, sex, porn, and they're all highly dopamine driven. Most mood altering behaviors are (indiscernible) but these guys hijack the system in a way that's destructive. But they're highly addictive because of the huge amounts of dopamine that's released, and then there's complications because the dopamine gets used up.

Chemsex, the term itself was coined actually by a friend of mine named David Stuart in London, who coined the term to refer specifically to the experience of gay men as it related to drug use and sexual behavior, but also the specific aspects of internalized homophobia and shame and that kind of thing. And so I honor David's request to refer to gay men (indiscernible) chemsex but I just want to make sure people understand it's not just a gay phenomenon. This occurs in all kinds of populations. I have some examples, but, heterosexual men uses cocaine porn (indiscernible) it crosses all genders, all orientations, and most drug classes. We can link almost anything because of the dopamine involved with these behaviors and these rituals.

So that's my point here. It's usually co-occurring, it can also be cross addiction. In rare cases I see people who maybe have (indiscernible) fetish or they're uncomfortable with and they basically kind of numb that fetish with usually alcohol or opioids, benzodiazepenes. They act out on their hypersexuality usually in a way, and then feel such remorse and same they go back underground so it's an alternating behavior of drugs and sex, although most times people use them together. And I have just that opioid, fornication, concertos (indiscernible) I also just to mention that, you know, other things cause dopamine rise in music, good food, all that stuff, we'll talk more about that reward circuitry in a second.

So one of the important things I think about a talk like this is that we really want to treat the whole addiction. At Seeking Integrity, we have a lot of guys who are in recovery from drugs and alcohol for years, sometimes five or six years, and suddenly realize that their porn use or their sexual acting out or their

gambling or their exercise have all gotten out of control and I think I am even in recovery myself, not from meth but from alcohol and other drugs, but I'll look around my AA meetings and NA meetings and I would get a good portion of those people are all experiences porn or sex addiction. So it's incumbent on us to recognize as providers, to recognize the whole addictive system, and I call can kind of whack-a-mole, when you treat the alcohol or the cocaine use, but we don't address the hypersexuality and get underneath and look at the whole addictive system, we're not really doing a great service to our clients, I think, because they're just going to switch addictions, so we really have to do that deeper, in many cases much more difficult work or else we're going to see our clients switching from one addiction to another.

So where sex is involved especially, people find this, because giving up the idea of this intense sex that people have on meth or cocaine or remembering it happened (indiscernible) it's always not so pretty, then they -- that fantasy of it lingers and can often cause a relapse.

So just to be aware that we need to treat the whole addictive system, whether it's drugs or behaviors or we're going to not do much for our clients.

So in terms of chemsex itself, there's a kind of a family of drugs that we often see with chemsex. The most common as I mentioned is methamphetamine. And we'll talk about that in some detail in a little bit.

GHB, gamma hydroxybutyrate, sometimes also very concentrated form called GBL. GHB is a mood altering drug that is basically a dissociative drug, it's a hypnotic drug. It's similar to Rohypnol. It's also used for sexual assault in the chemsex world. I think it's extremely dangerous. Of all these drugs probably the most dangerous because it causes respiratory failure and it's a liquid and it's very easy for people to overdose. (Lost audio.)

We start getting into you might have heard about as the alphabet drugs, X or ecstasy, K for ketamine, G for gamma-aminobutyric acid.

But ketamine has been used traditionally most recently as an animal, a veterinarian kind of (indiscernible) medication, large mammal like horses, because it's very, very strong. And it's also kind of a dissociative drug. It has been -- it's really interesting now because of its use as an antidepressant of last resort. It's available now in nasal form or infusion form. And it seems to have quite a lot of formats in terms of antidepressant activities. It's still depending on availability, an important part of the chemsex world.

Ecstasy, another one that we see a lot. Ecstasy these days, also known as Mollys, oftentimes the purity and quality is not very high and I do worry about it.

Amyl nitrate and butyl nitrates are poppers. Poppers are an old cardiac medication, kind of like nitro, that basically blows all your vessels open. It's called poppers because when they first

came out, they're in little vials they top the top off and inhale. They're -- they pop the top off and inhale. They're widely used now because they enhance orgasms. It's a head trip kind of thing. They also open blood vessels and it's a mood altering effect. And they also smooth the large muscles in the tissues, so anal sex is more comfortable. So we see this happening a lot. Mephedrone is mostly used in Europe (indiscernible) alcohol is a great disinhibitor. We see that in marijuana. Both legal in many areas. Common but no less dangerous when it comes to mixing them with sex.

And then a bunch of other synthetics. We're seeing a lot of home chemists around the world kind of tinkering with stuff. A lot of drugs, these novel psych active substances that are getting mostly the (indiscernible) and the Internet, people are ordering them, (indiscernible) you really are taking your life in your hands because you don't know exactly what it is. They have chemical stands, but it doesn't always kind of work out like you would want it to.

All right. Let me see. There we go.

So two different populations here. One is among men who have sex with men and chemsex, almost always including amphetamine often leads to higher risk sex. There's certainly terminology in that world. Party in play, PNP. So if you see some of the apps, hookup apps, they'll have abbreviations, PNP. Friendly or no PNP. Meaning people are looking for sex and drugs or not looking for the drug part. Although that's not always an accurate portrayal. I've had clients who thought they were going to a place with (indiscernible) and suddenly have a meth pipe in their face. So now with this there's also emojis, and the letter T for Tina for methamphetamine, so a lot of different kinds of abbreviations. Chemsex we call it, methsex, and this current chemsex epidemic started over 20 years now and it's been fueled for a couple of things. Usually drug trends come and go. And one was -- I'll talk more in detail about, the combat methamphetamine act which had very unexpected consequences, and the second factor was social media, and that logo of one of the gay apps called grinder, and that has just set this on fire. It just made it easy, convenient, and suddenly it's this whole world of availability of sex and drugs that is all too easy for people.

It's also though I want to mention an epidemic in rural America. You know, methamphetamine and chemsex are great -- probably very powerful mood relievers in terms of pain and emotional pain. And I think a lot of the gay guys, men who have sex with men that I see getting involved with chemsex are dealing with shame or internalized homophobia or getting older, aging in the gay community which can be a tough experience, but also we see in areas like in the Midwest, Arkansas and Indiana, Kentucky, Missouri, there's a whole bunch of meth overdoses and methamphetamine use going on and I believe it's because those are areas that are kind of in economic decline. Parents are worried about their kids

having a lower socioeconomic standing than they did. A declining lifestyle so we're starting to see a lot of meth and we have been seeing in that country.

What's even more worrisome though -- let me say before that. The opioid epidemic is a disaster, and I do worry though that more states now, more states than not, methamphetamine is the problem. Especially in the western part of the United States. There are more meth overdoses, there's more meth seizures than opioids in many states and I fear that we can't kind of chew gum and walk at the same time but we can really understand that these are two major drug epidemics going on that has created these simultaneous epidemics because for the first time we're seeing an escalation of overdose deaths involving both methamphetamine and heroin which we never saw before. So it really worries me that these things have kind of merged and that it's a real wildfire going on.

So when we do use drugs, in connection with sex, what are the effects overall? Generally longer periods of preoccupation and sexual intercourse. And (indiscernible) four or five days. People in this kind of drug state. Clients, this is going to get a little graphic but that's the nature of what we're talking about. Clients will masturbate for hours and hours and injure themselves because they're in this drug induced preoccupation phase of the addiction. They'll be on, looking as porn, occasionally have sex because there are places where people are kind of coming and going. Looking just around, kind of in the space. It's a long period.

Careless in choice of partner. Our frontal cortex goes off-line. We make bad choices and people are highly aroused in terms of sexual desire, and so we joke about anybody with a pulse, or sometimes not, I guess, but people are very careless in their choice of partner.

No use of condoms, which is a problem. Most of these guys are (indiscernible) prophylaxis. There's a lot of increased receptive anal intercourse and for many years because most of the research on gay men for chemsex, people thought it's disinhibiting and these gay men are doing what gay men do and now as we get more literature on heterosexual chemsex we notice there's an increase in anal intercourse too. So I think it's the effect of the drug.

Increased sexual desires I talked about. We're going to talk about that in detail in a bit.

A lot of tolerance. Dopamine has a -- what they call a short shelf life, meaning that what was exciting kind of today, very quickly I'll get used to and I'll need more, more intensity, so people get into trouble with that and we'll talk about how they do that as well.

And then this high relapse risk because of this fusion of sex and drugs. Not only are they having drug cravings and if you've dealt with methamphetamine or even cocaine you know the cravings can be intense. Sexual cravings can be equally intense. So when I see an attractive person on the street I may get a craving to use

cocaine. Or if I'm using cocaine or a drug that I fused with my sexual arousal template, I may see -- I may suddenly get sexually aroused. So the two become mutually triggering than a gets really complicated for people.

And speaking are complications, what do we see? A greatly increased risk of HIV, among gay men, about 50 percent are living with HIV. A lot of Hep C risk and other infections (indiscernible) they have to be taken very specifically within a window or resistance can set in so we have to think about these guys who are partying for three or four or five days, I have many clients who say with the best of intentions I'm going to take my meds and they set a timer or have a friend remind them but they (indiscernible).

Ironically there's a lot of erectile dysfunction, so people are in these highly aroused state but unable to function.

Constant triggering. The arousal template, it's a map of what we find sexually appealing and that gets really transformed by chemsex in a way that's sort of somewhat permanent and in a way becomes a relapse.

Visual triggers and cravings. I hinted at that with the picture of the waterfall. And long term damage to the reward circuitry in the brain. It's one of the things that makes meth different from other drugs. Meth actually destroys the dopamine receptor in the brain, which do come back but they take many, many months, up to two years. So that's another factor of what makes this a little bit of a different thing than what we normally see.

All right. So let's -- who are we talking about here? So just some statistics. New York City health department found that deaths from meth overdoses increased 160 percent in one year. A dramatic increase. It doesn't matter where you are. If you're in an urban area, it's quite high.

One of the things I think people often think about, picture a meth user. What comes to mind? And it's almost always a middle aged, gay, white guy. And what we know is that a lot of chemsex users are of all racial and ethnic backgrounds and so it's really important to expand our vision of who's using it and when we have areas and agencies that are serving minority communities, it's a tremendous amount of chemsex that they're finding.

There's a program in New York. 40 percent of their clients have used meth and we know that African-American MSM will be tremendous -- there's a high rate of being HIV-positive and this is the tragedy by the way, I mentioned the chemsex and opioid epidemics creating this epidemic. There's another epidemic going on between chemsex and HIV and it's really fueling the runaway HIV rates that we're still seeing on Black and Latino MSM communities in particular. So these things are kind of all intersected and affecting each other.

Trans women, 20 percent, up to 20 percent use meth and I think largely related to sex work.

More than 70 percent of local law enforcement agencies

particularly in the West reported methamphetamine as the greatest drug threat in their area. That's related to what I said before.

Overdose deaths from meth we've seen in a ten years increased by over eight percent.

And about 15 percent of all drug overdose deaths in the meth category involve meth, sorry, and then about half involved opioid.

It's an American and international. U.K. has a great problem. Australia has a problem. Even in Southeast Asia, there's a form of methamphetamine called yala that is a pill form and it's used for energy in factory workers that are in these mind numbing switch off jobs, and so they have a huge methamphetamine epidemic going on, even among other populations like that.

So it's very problematic.

And then this is just a chart slowing this combination of opioids and methamphetamine. You can see how it's dramatically going up and this I think is really when I've talk to people out there, it seems that people (indiscernible) the meth epidemic or the opioid epidemic, when they can't get their drug of choice, they take whatever they can get so we're seeing this a lot.

We're also seeing people who have been using amphetamines for four or five days, they're used to turning to Valium or an Ambien to slow down. Now they're turning to heroin. So it's kind of bringing themselves down after a period of partying.

So who are we talking about here? Major, major risk factor, probably the single biggest one is a history of trauma. Trauma being everything from those adverse child experiences we all talk about, but I always want to mention neglect. If we found that if caregivers are not emotionally attuned to the child, even if they provide meals and shelter and -- it can be really disturbing to that kid as they grow up. It affects attachment styles and intimacy issues, vulnerability and trust and all kinds of things like that. So trauma is a huge thing. Trauma underlies most addiction. (Indiscernible) when I mentioned that kind of whack-a-mole thing, this is one of the big things that I think we have to really address in recovery for folks, and when they start to deal with issues addictions help them disconnect from, and suddenly they don't have their coping mechanism and the alcohol or drugs or behaviors, the feelings start to come out.

I always say I think it's important to do trauma work but it's also to time it. I've seen people come to me who are in relapse and I think they relapsed because their well meaning therapist they have been seeing started the trauma work before they had adequate resources in place for affective regulation and that kind of stuff.

Ability to dissociate. (Indiscernible) a lot of shame, a lot of stigma, we see this with a lot of the populations who experience a lot of stigma. A lot of fear. These core beliefs, feeling less than, feeling unworthy, feeling unlovable, feeling disconnected, feeling (indiscernible) and those core (indiscernible) can occur in a lot of different populations.

The one I put it here because it haunts me, this phrase, I've been doing this work for 25 years, clients during this whole time, this is over two decades come up with these same words, I feel like damaged goods. It captures this essence. A lot of the guys who say this are not only experiencing addictive problems but they're living with HIV and they have a spoiled identity. They can't -- they see themselves in terms of their illnesses and diseases and it really takes a lot of work to move past that.

And this need for intensity. This need for stimulation to kind of break away from boredom or this inability to tolerate low energy mood situations.

Search for connection. I think when I talk to meth clients, often they'll say, boy, it gave me -- I feel connected, and I always kind of -- I'm a sex therapist so I use connection in air quotes. It's a chemical connection. But it's not the kind of connection you would see where you're emotionally connected to the other person and you respond to the other person. With chemsex, the other person is highly objectified. Guys describe it as having sex with a body but the body is almost like a prop for the sexual fantasy, the porn tape rolling in their head. They're totally dissociated in the fantasy. And so it's a whole different thing that requires some work in healing.

And finally it disinhibits people enough that they're very inhibited about sex, they feel they can kind of get out and really own their sexuality for the first time.

And so the therapeutic task there is to help them feel that to whatever extent without mood altering substances on board obviously.

So a lot of the compliance that we see turning to chemsex have a whole bunch what I call stigmatized identities. So they may be a racial or ethnic minority or a sexual minority, they may have a mental health diagnosis or other substance use disorders, they may have a disability, they may be doing sex work, they may be experiencing rejection or discrimination. You get the idea. You can read the list. They're really complex clients and I think it's much more than a drug addiction. It's behavioral addictions as well and there are a lot of life issues that are tremendously powerful and problematic sometimes. So just to kind of be aware of the complexity of some of the folks that you may see who experience chemsex.

Probably most people are familiar with the ACE study now, but I always have to talk about it because it's so important to help us frame with the clients that we see. So ACES are adverse childhood experiences. It's a longitudinal study that's been going on for decades. I think 30,000 people maybe now, about half gay, half straight, what they did was monitor events that happened to kids when they were young, and saw what happened when they grew up.

So some of the things they monitored, the abuse, the physical, sexual, emotional, intellectual, spiritual abuse. They may have

witnessed domestic, there may have been substance abuse in the home, mental illness in the home, divorce, a sibling with a chronic illness, an incarcerated patient. Anything like that could make the home situation (indiscernible) and also that neglect that I talked about before, whether it was emotional or physical, has really significant impairment.

And so what do we see? First of all, one in eight of Americans have four or more ACES, and some of the effects of four or more ACES you see there, three times the amount of lung disease. 14 percent suicide attempts, and so on. And even a shorter life span.

So these things really impact people, and I think again we have a bigger picture than just the present issues that we see, 'cause there's a lot of issues that are complicating these and really I think can lead to relapse and this need to find emotional pain or disconnect from (audio difficulties), so just to be aware of and to include them in your conception of these cases.

Underlying core beliefs. We mentioned a couple of these before. I feel like damaged goods. There's some -- if you're not familiar with sex addiction per se, there's ones that are very common and we see these showing up in chemsex as well and I'm a bad or unworthy person. No one would love me as I am. My needs are never going to be met if I have to depend on others, and this lack of trust, lack of vulnerability, and usually as a result of situations, and for sex addicts, sex is my most important need. A lot of sex addicts just describe themselves just incredibly, highly sexual people, but sex addiction remember is not about sex. Sex addiction is about disconnecting from feelings, and so a lot of these men and women are very sexualized from an early age they start to see their own worth in terms of sex. They see sex as very transactional and it has what gives them value. They may be feeling depressed and they suddenly feel highly sexual. They may have a bad phone call. A fight with their boyfriend or girlfriend, and immediately after that, want to turn to sex so sex becomes a way to soothe. It's not about the sex. So really to start to work on those two, challenge those core beliefs that we see.

Okay. So let me jump into the intensity piece here that we're talking about today. Trauma has a couple of different reactions, right? Fight, flight, freeze. In terms of how we respond, that sympathetic arousal pattern is more the fight or flight. People -- their eyes get wide and they kind of flush and they get red. Their blood flow, everything goes to the (indiscernible) to run or to fight, and we find that people that have traditionally experienced that are wired for that kind of reaction often tend to gravitate toward drugs or behaviors that provide this intensity and I'll talk more about those in a second.

But just that that's a general statement. And combining stimulants and sex really dissociates in a powerful way that provides that intensity but it really kind of disconnects the person from low self-worth, shame, and other inhibitions. I have a

lot of men I work with who classic example would be a gay man in his 50s, who feels he's getting older. He's not getting noticed in the street anymore. He's really invisible in the community. Nobody even looks at him. He has no identity, feeling increasingly disconnected, and methamphetamine, just kind of erases that. It wipes it all away, he feels great, he feels sexual. He feels he looks sexual. He doesn't care. He feels hot.

Especially people that are at risk and I'm thinking here in the gay population, guys that are starting to age and wonder kind of where their identity is in the community, this is a really powerful seductive drug so be alert to that.

Boredom, if we're talking about intensity, boredom, talk about the polar opposite. So boredom is a real relapse risk. Low intensity emotional states. Even relaxation. Pleasant emotional states can be triggering for people. So structure is really important. Having plans, having a date plan is really important as people get into recovery.

And so, yeah, and we know that basically individuals largely medicate their feelings through a lot of these (indiscernible) behaviors.

So intensity provided by these substance abuse behaviors is associated with trauma and trauma exposes individuals to use meth. What we found is that people who use meth and who also are diagnosed with PTSD were more like -- or more likely to be diagnosed with than other individuals who just had experienced trauma, so it's really more a complex reaction to the trauma itself. Meth users have experienced longer than a lot of other folks. And we also know that they also have greater functional impairment and experience poorer treatment outcomes.

I don't know if I have it on the slide. I do. I want to talk about the PTSD clusters because there's a little bit of a distinction. So there are three distinct clusters of PTSD as you probably know. Reexperiencing a traumatic event through such phenomenon (indiscernible) there's also hyper arousal, that hyper vigilance that we see.

People who tend to use stimulants in an addictive way and especially those who combine with it with sex, basically fall into this statistic really, fall more into the two and three. They tend not to have that first cluster. So the reexperience and the dreams, the flashbacks are not so much of their experience. We don't know what it means. We're starting to get more granular summaries of what's going on with these people.

So again this may be a little bit of a reward, I want to lay the groundwork for what we're going to talk about here. The limbic system, the reward circuitry of the brain, so our brain has several sections, right? In the midbrain, is an older section of the brain that has this reward circuitry, and it's actually neuroconnections that go between several different structures in the brain, but the idea is that our reward center gives us little bursts of dopamine

which makes us feel good. So if we share good food, if we cooperate, if we have an exciting time, if we feel really connected, like we belong, if we (indiscernible) nurturing or comforting and most of all if we have an orgasm, we get dopamine, and it makes us want to do it again, and it's a nice little system that has kept the human species progressing forward over eons, right?

Addiction just takes this and hijacks that circuitry in a very, very effective way, and nothing is more effective than the combination of amphetamines and sex to hijack this reward circuitry in a profound way, and a way that unfortunately never totally recovers from. It does to a great extent, but we'll talk about some of those complications.

So what does dopamine do? Quick review. Remember our neurons in our brain are hard wired. They talk to each other with chemical messengers, all those neurotransmitters. Dome mean, norepinephrine, serotonin and a bunch of others, so they act as a messenger, shooting from one side to the other from the (indiscernible) so dopamine has a couple of functions. It glues things together. It associates stuff.

So if you teach your dog to do a trick, your dog will associate that behavior and end up getting that treat. What makes the connection? Dopamine. Dopamine fuses those two things together.

So if I use cocaine and I go out and look at porn, after a while, my brain is going to associate those two things very efficiently. It's doing what it's supposed to do and it's wiring those two things together in a very strong bond, which is a hard thing to break apart in recovery.

So it creates these connections. It heightens desire. Dopamine is all about anticipation and so you think about the preoccupation phase of addiction. It's all about like stoking it up and when you talk to a porn addict who says to themselves, you know, I'm going to look at a little bit of porn before I go to sleep, just to make me tired, and suddenly it's 5:00 o'clock in the morning and they're still looking at it, they have lost a whole night's sleep, it's dopamine that kept them going. Looking for the next high. It's all about that anticipation. So it fuels the preoccupation. It creates tolerance and it quickly needs behaviors and drug use starts to escalate quite quickly and it uses behaviors. So it's -- it fuses behaviors so it's a powerful neurotransmitter.

So there's a couple of different directions this reward (indiscernible) can go. There's a brake pedal and gas pedal. The excited side what we see there, these are stimulating different positive potential in terms of the neurochemical release. Dopamine is the star player here. But also glutamate, epinephrine, adrenaline, norepinephrine, a lot of adrenaline. A lot of fight or flight stuff going on. In fact somebody described methamphetamine as a chemsex run (indiscernible) fight or flight the whole time, and you start to do cardiac damage and a lot of stress hormone

overflow and that kind of thing going on with this.

So what we see also is that we get pleasure on this side, this excitatory side. We see pleasure from imagining something we desire and pornography really heightens that appetite and it's largely dopamine driven.

The other side it more the inhibitory side, kind of slowing things down. The braking side. A lot of the neurochemicals on this side kind of turn off things. They decrease the potential. They slow it down. And dopamine actually plays a role here too but not as much on the other side. Serotonin, GABA (indiscernible) the roles we see over here. Generally this side produces a calming kind of fulfilling sensation. This occurs after sex or with a good meal and it's based on more endorphins, that feeling of satiation, like feeling satisfied and happy.

Opioids would be on this side as well, at its best it's a peaceful kind of euphoric bliss. At it's worse it can drop into depression and anhedonia.

So this is that limbic system, and these two sides. The arousal side and the satiation side. Over on the left you see that inhibitory. We see it's fueled by GABA and endorphins and if we take it to its logical conclusion, we're down at depression or and don't I can't, which is -- anhedonia, it's the inability to experience pleasure and it's something that happens with arousal junkies, chemsex addicts. As their brains are starting to rewire and come back down-to-earth, the basis line (indiscernible) they're so hijacked and reset so high that when they stop those behaviors, and they get into recovery, there's a period of several months when nothing they're experiencing meets that standard of arousal to feel good, and so they don't, and they kind of -- everything's blah and gray, there's a lot of relapse, a lot of impulsivity, so it's a problem in early recovery.

How do we get there? Food, alcohol, sedatives, opioids. Sex is on both sides here. Sex on the satiation side is more security sex. Sex and love and romance. It's like sitting with your honey on the couch, watching Netflix with your dogs during the pandemic, just kind of that comfort stuff. Relationships, shopping, binge watching TV.

On the other side, it's more this arousal side, adrenaline, dopamine, if we kind of fall off the edge of arousal, we're off in a true manic state and some psychosis as well. There it's mostly amphetamines, meth, diet pills, MDMA, and I didn't put on the slide, Adderall. I worry a lot of about Adderall. I've seen a lot of guys move to Adderall. When the body when it takes Adderall. It doesn't know the difference, it reacts the same way.

Behaviorally, gambling, that's a perfect corollary to this kind of process. Very intense, very exciting, very risk oriented. Sex involving power, risk, anything that gives that edge. So high risk sex becomes public sex, taboo sex, rough sex, it kind of escalates, and I'll come back to crisis in a minute. Shoplifting

(indiscernible) on the satiation side is more spending too much time on Amazon during the pandemic and shopping feels good.

Shoplifting is more about the risk, the danger, gets the adrenaline going, am I going to get caught.

Work. We see a lot of guys in high finance jobs, really powerful jobs or a lot of ER docs all kind of get addicted to that adrenaline thing and they easily fall into this kind of drug sex cavern.

And crisis, which is not a DSM diagnosis, but I do think that a lot of in need for intensity and when life gets too good and this is a danger, I've (indiscernible) recovery sometimes, things that are kind of shifting from sprint to marathon in their recovery strategies, and things are getting too good and I think sometimes people shake it up unfortunately.

Okay. So that's this limbic system that we see.

I'll skip ahead. You see on the left, right, and up, down, so I'm doing up, down. The up down bringing in the neocortex, which is our frontal cortex, our smarter selves that came later evolutionary, so there's more of a thoughtful element here if you will. So this is this work (indiscernible) so on the one side, leaning towards mania, is the super reality, and super reality would require intense (indiscernible) being alert. But it also is very exciting and triggering, so things like sky diving, rock climbing, being a pilot. All kinds of stuff. That I tend not to do myself would be there. Things that increase kind of adrenaline.

Then on the flip side of that, going down, dropping into a fantasy world, which is the third kind of addictive state that people sometimes kind of drop into. These drugs however are not nearly as addictive as other things. It's hard to have an addictive (indiscernible) we see certification sometimes playing a role here. Kind of mystical stuff. There are other neurotransmitters that are at work here, but these kind of people can get lost if they drop off the edge there and they (indiscernible) and other kind of psychoses.

So if you put that all together. So we have the arousal, and on the right-hand side, the super reality, the satiation on the left, the fantasy on the bottom and these kind of behaviors that overlap in here, just to put perspective on it. So risk taking behaviors really are a combination of this arousal and the super reality. You kind of want to have a clear head if you're walking a tightrope or rappelling down a cliff and not be in the mood, although I've had that (indiscernible) high risk dangerous (indiscernible) while they're impaired.

Down below also arousal, but dropping to fantasy, the mystical state. And then this very contented, blissful emotional state with super reality. The high consciousness. So a way to put it together but graphically to show you the different directions that we get pulled in by different drugs and behaviors.

So I want to change gears just a minute. Work a different part

of our brains. I had a client, young guy came in a couple years ago and he said Dr. Fawcett, I just discovered this brand-new drug, methamphetamine. No, it's not so new. Methamphetamine was first synthesized in the late 1800s and then crystallized in Japan and came of age in the 20s with like cocaine with Benzedrine inhalers and over-the-counter. People could use it for anything and everything, but it really came of age in World War II. The -- everybody used methamphetamine. I have a picture of a kamikaze pilot because we know those pilots were using methamphetamine. We think about the job description of the kamikaze pilot, it's high risk. Pretty fearless. Impulsive, compulsive I guess. So anyway they were using it. This fascinating book called blitzed came out, and we are researched Hitler's physician's diaries and apparently Hitler's physician was injecting him with methamphetamines several a day, so Hitler was using -- he injected amphetamine, and methamphetamine, also interestingly a lot of the population in Germany, during the 30s, in the buildup to the war, a significant number of the German population was using methamphetamine. It was a prescription drug called Provintin and it was very common. It led to -- buried some emotional pain of some of the economic arrangements after World War I and that kind of backfired.

The allies often used (lost audio) from a medical journal in the 50s and you can see for men in combat, when the going gets tough, (indiscernible) methamphetamine, another ad, this is my favorite. You probably can't read it but I'll read it to you, it has a picture of a housewife kind of looking -- a 1950s housewife looking very worried with her little gloves, carrying two bags of groceries and it says to help the depressed and anxiety ridden housewife (reading). What could be better than a bump of meth. If you're feeling overwhelmed by all that stuff.

So we like the opioid crisis, I think the medical community assisted us in (indiscernible) they really pushed a lot of amphetamines over the years.

So here it is. It's here and engrained in our culture.

I want to talk a little bit how do people come across these drugs. Most people don't use meth or GHB or even cocaine. So there's interesting work, people basically start with alcohol, marijuana, nicotine, and then move to other stuff, but these kind of club drugs and they're all analyzed in that table, which I always joke if you can read code, that's great, but if you can't, I've summarized it over on the right for you. The first one people go to is cocaine. And then ecstasy, and then ketamine, then methamphetamine and G. So it's a sequence. It's by the time we see people encountering methamphetamine, it's (indiscernible) seven year old meth client, gay guy, for the reasons I mentioned earlier, got involved with he's courts and got introduce -- escorts and got introduced to methamphetamine and chemsex through them and he went downhill very fast. So it does happen.

So there's been a lot of fascinating work about who and what. A

lot of the substance abuse research is done in college labs or (indiscernible) bars so they were finding a lot of alcoholics because the research was done in a bar setting, so I thought it was great study protocol. They thought what if we go to a place where guys really care about their bodies, they're interested in their health, and they're not kind of down and out. So they went to a equinox gym which has an expensive membership and they interviewed guys who were taking care of themselves and took care of themselves. They had (indiscernible) Viagra. Inhalers, that's the poppers, and cocaine and meth. These were the guys who were sort of health conscious, a high use of these drugs going on.

This is a client statement of mine. Remember when we only had black and white television and then came color TV. It's the same with methamphetamine and sex. Just gives you an idea of the power of the drug.

So I have this slide, not to get too detailed into the chemistry of it, but just to note that methamphetamine is the core molecule of a whole bunch of other drugs and a very slight alteration of one of the elements of that molecule, you can create a totally different drug. So we see on the left there, Mollys, that's ecstasy, virtually the same molecule except for one tiny element. Down at the bottom, Flakka, that's like meth on steroids. And terrible, terrible drug. It was available to homeless people for really cheap about ten years ago. Also anyway close cousin to methamphetamine. Mollys, again ecstasy and then bath salts, another kind of drug on steroids that's related. So my point here is that with a little bit of tinkering, we can get very different drugs from these.

So where does meth come from? Meth is a synthetic as I mentioned. The base compound of meth is sued fed. It takes a whole bunch to make methamphetamine but we have to add stuff from Home Depot (indiscernible) cooked and boiled and baked and you eventually add up with a bunch of methamphetamine.

To make a batch, it requires thousands and thousands of Sudafed tablets, more than anybody could buy. So people employ runners to go around and buy Sudafed, every package in the state. They would get a piece of the action when the meth is done.

We had a plan in 2005 to combat methamphetamine act and this epidemic was catching fire. It was a smart idea. It had unanticipated consequences. The smart idea was to limit how much Sudafed anybody could buy. So if you want to buy Sudafed, you have to go behind the counter, you have to show your driver's license, so almost overnight, they knocked out mom and pop labs, they knocked out the home meth industry because they eliminated the core component.

However, they didn't do anything about the (indiscernible), so there was this human demand for meth that continued (audio difficulties) methamphetamine by the ton. That's an actual DEA photograph down there (indiscernible) that was seized. This is a

map of some of these meth super factories that are on the border. They basically smuggle meth into the country as a liquid, it's recrystallized and distributed by FedEx of all things. So it's a huge problem still, and what's worse is the purity is getting up and the price is going down.

So this is the brown line here is the purity. The turquoise and the blue line is the price, and you can see from 2005, it was kind of this jittery point where suddenly the price went up because people couldn't get it and then all of a sudden the cartels started kicking in, the price gets low, and there's been some DEA seizures of a hundred percent purity. That's pharmaceutical grade on the street. So it's incredibly addictive, incredibly powerful and bad.

How do we ingest meth? Pretty much any way you want. People smoke it, swallow it, they do hot rail, just snorting through a little hot glass tube. They snort it. They booty bump it, which is (indiscernible) and shooting up the rectum. They inject it. So there's general escalation towards injecting during the course of one's career.

This again is probably a review. I'll go quickly. But these are two nerve cells. Remember dopamine is our star here and when a message comes across, the dopamine is released from the upper side and goes down (indiscernible).

Cocaine for example will come around, plop down (indiscernible) there's a mood elevation after about ten minutes, the cocaine molecule goes away and the high ends.

Methamphetamine remember is not natural, it's not from any plant, it's synthetic and (audio difficulties) plops down in that same receptor, but it's will there for eight or nine or ten hours which means the meth high is longer. Meth will take the dopamine in that -- in the whole system. It's like bringing a sponge, all the dopamine gets flushed out of those inner cells and even more tragically, meth is neurotoxic, meaning is destroys the receptor it's sitting on. So the more you're using methamphetamine, the more your striving -- you're destroying your own reward circuitry, those dopamine receptors are getting kicked out and it's compounded by the fact that when there's high levels of stimulation, the brain is trying to adapt, and the best move it has is to knock off those receptors itself, and so the receptors are constantly being pulled off and that's a problem in recovery again because suddenly the volume is turned down and you get into recovery you stop the behaviors and stop the drugs, but our brains have been wired to have a high level of intensity, and so this period of depression and impulsivity. So it's -- the good news is those things come back. The bad news is it's about 24 months.

This is a chart of dopamine release. You can see the baseline is about a hundred. That's normal. Walking around, getting a hug, acting cooperatively, food is a little more, if you have comfort food, ice cream, whatever it is. Especially now in the pandemic, we see this (indiscernible) one and a half times as normal. Orgasm

is the most (indiscernible) without taking a drug.

You can see here though the difference. Cocaine, up to 300 times normal and methamphetamine is almost off the chart with about 13 times (indiscernible) into the synapses and out of the body.

I didn't mention by the way too, when we have dopamine, there's a bunch of reactions. But one is a mood -- low mood, right? So we -- people become (audio difficulties) meth addict who parties over the weekend, they'll start partying Thursday, Friday, Saturday, they put on the brakes Sunday, but they call Tuesday suicide Tuesdays. The dopamine is gone.

Dopamine is so interesting. It's all about the anticipation. So if you look at A there, when you first experience -- our very first orgasm, we've never had that before, so when we got it, we got this big burst of dopamine that felt really good, and I think all of us -- we need to do that again. But immediately, and this is true with a drug experience or behavioral experience, once our bodies learn that's coming, we start to get the dopamine release before the actual event and that's where B comes in. So we're training our bodies to kind of react in anticipation of it, and that's why people get stuck looking at porn all night long or get caught up in sex addiction and the ritual and preoccupation and so on.

After we train our brains, number C, and we don't get the reward, our dopamine levels go down, so we're actually feeling worse than normal. And then as we become really addicted to the stuff, it's all over the place. We're highly sensitized. Further rewards (indiscernible) and that kind of intermittent reward is the key to addiction. It's the kind of thing that the Vegas slot machines are designed to do. Give a reward once in a while, but it's unpredictable and for the way human beings are wired, that irregularity keeps us going for more.

(Indiscernible) on the slide on the left, you see it's nice bright orange and red colors. In the middle, there's not so much, right? And that's after a meth user has been clean for one month. If you work with meth, you know that one month clean time is a lot of work. And a lot of pain. And I think for people who experience that for a month or two months or six months, and not be feeling much better is really challenging. It's one of the factors that leads us to relapse so much with these drugs.

And then after 24 months, you see the reward circuitry has been reestablished. Those pathways are there and it's back to levels of dopamine that are orange and red. Does it go back to baseline or as it was? We don't know. It's hard to measure that. We know basically from a functional point of view, those things do come back and do start to repair themselves.

A sip of water here.

So the effects of meth, in terms the short term acute -- as I mentioned, it's like putting your foot to the gas pedal and holding it down. So you're basically forcing your body into fight or

flight. So your heart rate goes up. Blood pressure goes up, pupil size gets big. Respirations speed up. Your sensory acuity gets big, a lot of more energy to your limbs, and blood flow actually drops away from your stomach so you're not thinking about digestion, which is why methamphetamine is a great diet drug. Amphetamines are in general because they kill appetite and you see it decreases appetite, decreases sleep, decreases your reaction time. What's interesting about that last one, if you talk to a meth user, their perception, their subjective experience is that they are on top of their game, they're seeing everything, they have these great insights, they're connecting the dots but actually they're really disorganized so their reaction time isn't as good as they think.

Chronically a lot of bad things. A lot of tremor. Remember dopamine is the key player with Parkinson's, there's a lot of Parkinson's symptoms. A lot of dry mouth. If you think of taking 40 Sudafed, what's going to happen to your nose and mouth? It's going to get really dry. A lot of dry mouth. A lot of weight loss, cough, sinus infection. People don't do very well. Sweating, these (indiscernible) like meth and some other, Flakka, some of the other more extreme amphetamines actually raise your core body temperature, and so methamphetamine will raise it to the point where you start to cook from the inside and people will start getting sweaty skin. With Flakka, that drug that I mentioned that we had here in South Florida (indiscernible) medical emergency. It's not sustainable and it was an immediate medical emergency.

A lot of sore nose, oily skin and so on. In addition to this there's a lot of cardiac complications. People get pulmonary (indiscernible) heart attacks, strokes. When you think about the high risk populations, these guys in their 50s, 60s, 70s, there's a lot of cardiac events.

Most acutely, by the way, for people that relapse. After somehow after a period of time, clean, when they go back and (indiscernible) levels of use they had prior to getting clean, the stress in their body is such that they're much more prone to have a heart attack or stroke to relapses can be dangerous for a meth user.

The short term psychological effects, increasing confidence, alertness, mood, sex drive, energy, talkativeness. All the things that these guys are looking for in they're kind of caught up in that depression or trying to dissociate from feeling bad. So it decreases boredom, decreases loneliness, decreases timidity, so think about this guys who are feeling less than like damaged goods, unlovable, unworthy, and this drug comes along and just kind of reverses all that. It's tremendously appealing to certain people so just kind of be aware of that as well.

Let's see for a second. I want to talk -- I don't think I mentioned -- I'm not sure if it'll come up on a slide or not. But

let me say it here. Sex drive. Remember dopamine associates whatever you do together. So if you're using cocaine and looking at porn, it's going to kind of wire those two things together. If I'm using methamphetamine and acting out, hooking up with people, that's going to kind of get triggered together. But methamphetamine doesn't inevitably lead to a sex drive. It does heighten sexual awareness if you're sensitive to it but many, many people who take meth never have any sexual effects whatever. Meth is used by migrant farm workers for energy. Meth is used by moms who are driving their kids around to endless appointments after school for energy. In South Florida we have a lot of domestic help who come up with their families from South America. They live and work 24 hours a day. A lot of them are using meth. So there's a lot of people that can use meth without experiencing the sexual effects. In fact a friend of mine in Los Angeles was a bulimic and he was using meth and weight control. He walk into a (indiscernible) he felt rather ripped off that he hadn't had that. He just had lost some weight.

So it's not inevitable. But when it's paired, it becomes a very powerful pair.

The chronic psychological effects of meth, a lot of confusion, a lot of concentration issues. A lot of psychosis, a lot of psychotic features. The hallmark feature would be paranoia, and the paranoia can be sometimes long lasting unfortunately. I've had clients three months or four months clean come into my office and still check out the air conditioning vents for cameras and microphones and those kind of things. It can last. If people have premorbid depression or anxieties issues, those can get aggravated and not go back to baseline. A lot of people I see in recovery because of the ongoing voices in paranoia well into their clean time do maybe low doses of (indiscernible) which is an antipsychotic to control it and it does well. But it's disappointing they have to remain on a drug like that for a while. A lot of the depression I mentioned because of the dopamine being flushed out. A lot of anger issues. And this formication, that really disturbing graphic I have there of somebody with an ants on their arms, formication is a psychosis or psychotic feature. It's hallucination that you have bugs under your screen and people try to scratch at them. And so a lot of times if people have less than optimal health care, people who are homeless for example, they'll have this formication, and they have that really dry skin and they start getting staff infections, we see blotches of staph infections, it compounds quickly. So there's a lot of psychological effects that are somewhat lasting and pretty disturbing and pretty extreme.

The psychosis that you see from meth is indistinguishable from that you see with bipolar or schizophrenia or any other psychotic disorder, it works the same, and basically we treat it the same (indiscernible) low lighting, controlled setting. All that.

We're just starting to learn about this, but this is really fascinating to me. Over the last ten years, we've discovered the empathy circuit. Circuitry of the brain that wires together (indiscernible) and other sections of the brain that really create our ability to have empathy, to experience what they're feeling, and it helps us connect as a human being.

With this objective fix between sex and porn addiction and the chemical effects of (indiscernible) it starts to impair that and we start to see people being highly objectified. Objectified, often (indiscernible) breasts or a penis or muscles or, you know, just that body part. It's really sort of people are reduced to that.

This is a fascinating experiment also done (indiscernible) where they showed chronic meth users these slides of a guy making different facial emotions that conveyed an emotion. And chronic meth users were unable to distinguish was emotion was being conveyed here and they almost always assumed the message underneath, no matter what the expression was, as hostility. (Indiscernible) the paranoia I spoke of, but if somebody can be smiling at them and they would misread and assume that person had evil intents. So there's this chronic misreading of social cues that can persist for a while in recovery, and I think it's a really -- it makes it a little dangerous, because methamphetamine users can be aggressive. They can be psychotic, they can be paranoid and they're not properly interpreting what's going on around them so it's a problematic situation but if you're dealing with meth users who are not dangerous per se, but just be aware that they may be misreading what you're trying to say or convey. Just to kind of be (indiscernible) and correct for it in your therapeutic setting.

So I want to talk about the fusion of drugs and sex. There's this great expression in neurology that what fires together wires together and that basically summarizes this concept I spoke of where if I do methamphetamine and I act out sexually, over and over again, my brain is basically going to make those one behavior and they're going to have the same triggers and cues and they're going to have the same thought patterns, the same rituals and so on. So untangling that is a good piece. (Indiscernible) I went to treatment, and they took care of my alcohol and my cocaine, my methamphetamine, my Xanax or whatever it was, and basically the message was, well, your sex will take care of itself, if you just get clean and sober, and in my experience with these things -- I'm so sorry.

If these things are combined, they don't take care of themselves. Sex will lie dormant. Sex will still be impaired to some extent. So you have to treat the whole addiction and help people untangle from this sex and (indiscernible).

So again when these things happen due to dopamine, sexual desire becomes highly focused drug dependent. They have their sort of favorite sexual fantasies or scripts that play in their heads,

scenes, and those become go to places for them when they get aroused. And those places become deeply grooved and they become almost automatic, and their mind just kind of goes there. So that's also a problem in recovery because people automatically go to that place instead of kind of dropping away from that, and we'll talk more about that in a second with the (indiscernible) but again it's highly focused.

These complex network of triggers and cues, where one triggers the other and vice versa.

So I want to talk now about what happens in the arousal template. Arousal template is basically this map of who and what we find sexually appealing in our lives, and it's fascinating. We're learning about these to some extent. We don't know a lot about them but basically we know that the raw template of it is in place long before we (indiscernible), ages five, five, six. Kids who shouldn't be sexual. Arousal template includes physical aspects, emotional aspects. We can basically add anything to an arousal template, places, people, things, all that stuff can be kind of associated through dopamine with our sexual desires and they can be combined and fused and the interesting thing about templates is we can through the rest of our life, because of neuroplasticity and this ability of our brain to constantly rewire, we can expand our templates. We can bring stuff in all the time, so in my 40s I discovered I had this, you know, passion for stiletto heels, I can add that to my template. The problem with arousal template is we can bring them in but we can't get them out. Once they're in there, they're in there. In the life of a chemsex addict, because of tolerance, they get pretty extreme. Where these (indiscernible) get rougher, more taboo, get darker and they become fantasies in one's sexual template and that's -- and they're in there. It's actually traumatic I think for a lot of people. Though I've had a lot of clients, once they came out of the trance of the drug state and got into recovery, they couldn't really (indiscernible) the kind of situations and scenarios that were actually repulsive to them when they were sober. But they had those, and they're in their heads and they couldn't (indiscernible) you can't unsee it, you can't forget it. So that could be a real land mine in recovery as well, because a lot of times people -- sex is hard to get back. People get frustrated, they masturbate or have sex with someone and they can't have an erection or an orgasm or they can't get aroused (indiscernible) they'll go to that drug related fantasy in their head. Or they'll look at drug related porn and all that does is keeps that fantasy alive. We can't get rid of it, but we can kind of let it go dormant and overgrown and dusty and the task is to find other things that can kind of distract us but we can find sexually appealing that aren't related to our drug use and sometimes that's hard because sometimes people can't even think of anything short of those wild chemsex fantasies that are slightly appealing.

We have a lot of clients who in the beginning of recovery accusing me of (indiscernible) or no sex. And it does feel that way. The reality is people can get into recovery and work on their issues, they can learn to look at their attachment style and they can learn to develop intimacy skills and they can use to involve and trust and the connections they have are so much more gratifying, many clients tell me that, they get past that phase and let go of the fantasy of all the hot stuff that happened with chemsex. So it's difficult to get rid of these elements, and that's a problem.

So this hijacking arousal template happens and as I mentioned these fantasies become deeply grooved, automatic. The thing about dopamine, it requires novelty, as I mentioned earlier what was exciting yesterday or what's exciting today in terms of a type of sexual act or a sexual fantasy or a type of person or whatever is going on in my arousal template, that's not going to do it anymore. I need something more exciting, and so in the worlds of sex addiction, talk about escalation and escalation in terms of (indiscernible) and this is where we see porn addicts really getting in trouble, because they'll start out with kind of every day important but in the -- they're looking at so many thousands of images, eventually you're going to find something you never thought of before and it became a fetish, a position, whatever, that is going to be very arousing. Wow, that's hot and it works right into your arousal template, so people are constantly enlarging it and increasing it, in this search for novelty. This also interferes with the ability to maintain intimacy with their partners or wives or husbands when they get into recovery because the novelty that this teaches, whether it's through a series of hookups, and some of these folks have hundreds or thousands of sex partners, or hundreds if not thousands of pornographic images that it's one thing after another and they wire their brains and not be able to get aroused for anything more than a few seconds of an image and they need something new. We see this (indiscernible) among young 20 something men who have grown up on pornography who (indiscernible) are having erectile difficulties because of pornography and we ask them as a sex therapist, they come in complaining they can't get an erection with their girlfriend or boyfriend. But as soon as they see porn, it's no problem. And so it's that distinction that also needs to be addressed in recovery. So I really think (indiscernible) sex addiction therapist or sex therapist is part of a team here because there's a lot of issues that may be beyond the scope of traditional addictive training.

It requires a reset. We talk about 90 days of being sex free, which is hard for some people, and not for others. But many people struggle with that, and there's no rule -- there's no rule of thumb. There's no hard number for that, but I think generally because the brain is so kind of heated up and hijacked, if they can just take sex off the table for a while, the brain does start to

readapt and they do get back to the point where they can start to (indiscernible) that were previously arousing, arousing once again. So that reset is really important, and I mentioned a couple of times that anhedonia, that inability to get excited about anything in early recovery, because the dopamine has been so hijacked.

So the last section here in our closing time, (indiscernible) recovery. We see the road. I'm an addictions guy, I'm in recovery myself, but early that road was more straight. I learned with amphetamines, relapse is almost inevitable. Hopefully they get briefer, they last a shorter time. They get less frequent and eventually it stops, but it's a rough road, and I think it's important to realize that and kind of be aware of that and adopt a style that doesn't shame the client, but (indiscernible) and we're kind of walking this line, I don't want to encourage relapse or give kind of permission for relapse, (indiscernible) shame when it happens. Because (indiscernible) in a meeting, it's really shameful and humbling experience for a lot of people. There's a sensitivity there.

What do we know that's important? Connection, connection, connection. Social connection. Most of these folks coming out of real isolation. The idea of being connected with other people, connected with their own feelings, connected to a supportive network is huge. And we encourage that in every way they can.

The sense of belonging. A lot of these people based maybe on their history or their own styles or their own traumas have a lot of -- a hard time feeling like they belong, feeling like they fit in. And so I think if we can get that sense, give people a home, in whatever fellowship or fellowships and places they go. I think that's really important.

And finally retention. Keep them coming back. It's a hard thing, and people face many, many walls, and they have to really kind of get over each one in a way that is hard sometimes. So I think, you know, more than any other drug, I think people that are meth users particularly have burned so many bridges, they don't have many people. I often deal with, for other drugs or other behaviors, usually involving families and spouses, most of these men and women have lost everything and everybody. And so in many cases, you, the provider, the clinician, may be. Only person in their lives right now. Certainly a person that's talking to them and listening to them. I often am asked what kind of modes of therapy work best for chemsex. I think just kind of being a human being and creating a connection. I just always start just with that therapeutic alliance and that bond, just being there and listening and being supportive and acknowledging them. And then work from there works.

Trauma informed care as I mentioned early on is really important.

Programs, 12 step programs. I'll say a few words about CMA, crystal meth anonymous. At first I didn't understand the need for

it, I do now more. CMA was founded because it's a little more tolerance for discussing not just the drug behavior but the sexual behavior that goes with it. And if I go to an NA or AA meeting and start to talk about my sexual acting out and I'm freaking (indiscernible) as something not to talk about. But in CMA there's a little more leeway about that and I think it's important as a place where people can talk about it. I created a -- the platform called in the rooms that has online recovery. I have a chemsex recovery support group there on Tuesday nights. Just a place. Because there's still very few places where people can safely talk about these issues and people don't know thousand react. CMS an important addition. It's a young fellowship. The recovery depth is not as great as an NA or AA, so I often recommend a combination of programs or I may not recommend CMA at all if it's going to be very trigger. So I've had clients walk into a meeting, a CMA meeting, it's overwhelming, but first of all there's a lot of very attractive people there which can be very triggering. They may have had sex with half the room which is also triggering, so sometimes having N A or AA and not bringing that up is useful. Also sometimes a CMA is not well run. You remember my waterfall picture at the beginning. If it's not well run, people can get graphic with their sexual language. I've will people walk out because it was so trigger and it wasn't controlled (indiscernible).

Smart recovery I think is a great adaptation. It can be used with a 12 step program in my opinion or not. It's more kind of a (indiscernible) kind of stuff, which is useful. If anything I really like the DBT sets of programs and skills, mindfulness that go with that.

And then there's alternate programs, refugee Dharma recovery, depending on which coast you're on. I think we have to aim at the long term. This is a long term recovery process. And I think it really works. If you can have access to a support group, I think it's really important. I have found that gender based groups work the best, because there's so many sexual issues. I think men working with men is ideal. Women working with women (indiscernible) not necessarily a therapist is really ideal, because there's issues of safety, not being triggered and so on.

So the more groups, the better is I guess the bottom line.

Some of the implications for treatment to take into account. A couple of things. These largely stem from our friend dopamine and that reward circuitry I spoke of. One is decreased verbal memory. So one of the impacts of this dopamine damage is a decrease in verbal memory which is our ability for abstract thinking so people get really muddled and there's interesting work being done on ADHD as a precursor to stimulant use disorder, but certainly when you give up the stimulants, if you become addicted to them, the effect is very much like ADHD in this kind of fuzziness, if I send somebody too soon through a 12 step meeting and they'll look (indiscernible) if I give a reading assignment, it's really hard

for them, they don't usually complete it. If I work with CBT too soon, which actually requires some mental gymnastics in a way, that can be very frustrating for everybody. So we talk about CBT light, jokingly, but I tend to appeal to that next thing, an increase in visual memory in my work. So what that is, again dopamine related, is people get really heightened sensitivity to visual triggering. And that can -- so you can see porn, might be a problem. They can get triggered by somebody, an attractive person on the street, by seeing drug paraphernalia. By going down a street where their dealer lived, by going past a hotel where they had a hookup and every place can be a trigger and that has to be undone. This heightened visual acuity, instead of going to the abstract cognitive work, I do some of that, but I try to do handouts, I try to speak in graphic terms. I have flow charts to make it try to appeal to that visual thing that's going on.

There is prolonged cognitive impairment. We see some problems with the neuroconnections between the midbrain where this limbic system is and the forebrain or the neocortex. And where our smarter -- our smarter abilities are. Also by the way impulse control. So if you think about reward circuitry is putting the go pedal down for this impulse, yeah, that's good, that's hot, let's go there. That's do that, no matter what the risk, they're basically the brakes are off line. The neocortex, the prefrontal cortex, which normally would say, whoa, that's not a good idea, let's think about this, let's say let's count to ten, anything to kind of control the impulse, all that is pretty much off line and so people are very much affected by impulses as they come out, especially in early recovery.

Impulsivity as I mentioned, and that damage reward circuitry, the effect it has on moods, affective regulation is compromised for a while, impulse control is compromised for a while. (Indiscernible) pleasure. So just to kind of hold these things in your consciousness as you're working with people is going to be really important.

So clinical approaches, I found best -- be aware of the best practices. You know, ideally outpatient works best. There's the matrix model you're probably familiar with is a model, an outpatient model that was approved for cocaine, then replicated and validated for methamphetamine. It's an outpatient model. Groups (indiscernible) once a day for a very long time. That works very effectively for meth users.

I think in many cases a brief in patient stay is useful, (indiscernible) and that's all because these folks are suicidal, they're extremely depressed, they're unorganized, they kind of can't -- they're not getting (indiscernible) they can't quite get it done, and so I think a container where they can kind of have an intensive experience for a few weeks is really important.

Especially if there's some psychotic stuff or obviously psychological concerns. I think a brief stay in an inpatient basis

can be really important.

Trauma informed approach as I mentioned. Be aware of the timing. If you dig into it too soon before the clients have the ability to regulate the feelings that come out, we're asking for trouble.

Be alert to poor insight and poor judgment. Oftentimes just kind of fuzzy. People don't know what they're feeling or thinking. The impulsivity is high. Again I work in addictions a lot of years, and denial was something to be really to be confronted -- I learned it in kind of an aggressive way. I don't subscribe to that anymore. But with these guys, and gals, with chemsex users, I always have to double-check because denial or not getting it, not getting something, not falling through on something -- not falling through on something may not be resistance. It may be not connecting the dots, and so I found therapeutically what I might have considered a kind of therapeutic issue. I asked you to read this chapter or make this call or attend this group and you didn't do it, what's going on with that? In many cases I have found it useful to let's make the call from my office. Let's set this appointment up now. Let's put this in the book. Helping them follow through in whatever way I can. That little extra follow through that I think is important just to recognize to kind of help people. Really a lot of work needs to be done early on and it's really almost more of a crisis counseling approach in the early days but to diffuse the triggers, help them get some skills to manage those triggers, and this -- some approaches that utilize the brain's reward system. There's a thing called contingency management which is giving gift cards for clean urine tests and so on. You get a $10 Target card for a week of clean urine, and $15 for two weeks or something. Those have been shown to be very effective in research. The problem with research is that it often isn't replicable -- replicated easily in real life. So I don't know many agencies or places that can figure out how to do a reward card with money to a client. That's just not done very well. And so I don't see it as much done in the real world.

(Indiscernible) get a physical workup. It's really important. Remember the HIV rate here. So it may not have been adhered to their highly (indiscernible) which are the HIV medications. They may have had meth related complications. Complications, pulmonary hypertension, stroke and so on. They may need a psychiatric workup because they may have disturbances, chronic depression or ongoing psychotic stuff that should be addressed, and risk of suicide based on that dopamine inadequacy (indiscernible) of that.

And check the status of their support. As I mentioned these people are really isolated. They may not have support, they may not have resources in place. So really do a kind of safety check in a way on that.

So our role, I think I mentioned the matrix model. That's the amphetamine model. The need for crisis stabilization. The need

for a thorough biopsychosocial assessment and I think a lot of addiction providers aren't necessarily comfortable doing a thorough sexual history. I think one important element that we need to address as a field is to (indiscernible) sexual training we provide, so people do get comfortable. I've had so many clients come to me from other therapists who either didn't know what they were talking about when they're describing sexual things or their therapist actually registered disgust or shame. This horror which if you're hypersensitive and feeling shame anyway, having a therapist make a face, a kind of micro aggression isn't so good, so I think we really have to train and provide supervision, help people talk about sex. Unless you're a sex therapist and you have that training, it just doesn't come naturally. So you get the idea.

Treat the sequence. I think we have to treat both of them together. If you have somebody who has a sexual behaviors that are addictive and drug addiction, as I mentioned, if we don't treat them both at the same time, it's going to be really problematic and they're going to really not do well.

We need that drug relapse prevention plan. But we need a different sexual boundary plan. I think I have a slide -- I guess I don't.

If you don't know it, just very quickly, I'm almost done, in the sex addiction programs, the S programs, SAA, SOAA, SA, SCA, there's a number of them, unlike drugs where we can say, I can be abstinent, abstinence is my goal. With sex or food we have to figure out how to incorporate it in a healthy way so most of those programs have circles plan. It's three concentric circles, the inner circle represents the bottom line behaviors which represent the things that are my addiction. (Indiscernible) behaviors. So that can be looking at porn, having an escort, having an affair. Masturbating for some people. But it can vary.

The middle circle would be kind of risky behaviors. So that might be -- it might be looking at porn. The beauty of this as you see, the behavior is individual. So I might have a problem -- so if you take pornography, that may be something that an addict can't do, so for that person it would go in the very middle circle. For somebody else maybe porn isn't an identified problem but it's a slippery slope and that might go in the middle circle (indiscernible) it's dangerous signs that may not mean I have a relapse yet but I have to look at this and take some action.

The outer circle are basically the behaviors that kind of feed us that are healthy and good. Being connected, playing softball, spending time with my husband or my wife, you know, cooking good food, playing with my dog, listening to great music, whatever all that stuff is that also by the way gives us dopamine. Remember fornication and concertos, all that stuff, we need to find other ways of getting dopamine than sexual acting out. So (indiscernible) my chemsex clients have two recovery plans, one for

drugs and one for sex, and the sexual boundary plan by the way may change. Somebody may start out saying, okay, I can't masturbate because every time I masturbate I go to meth related memories and then I want to go out and hook up. So masturbation might be in that inner circle until maybe 90 days or six months and then with their sponsor and a therapist, they might decide, well, maybe I can move masturbation into the middle circle now. Because it doesn't represent that threat. So it's somewhat fluid.

Okay. And then with underlying issues, the shame, universally there's trauma, almost universal their anxiety and depression and so on. Beware of modalities, that (indiscernible) that reward circuitry (indiscernible) not so much -- I haven't really seen that implement the in many agencies or private practices honestly and of course group. I talked already about CMA. But the role of (indiscernible) that's the magic component in the recovery process here.

And then in closing, there's a -- one of the things (indiscernible) they have this black and white thinking which says, okay, I can either use meth and chemsex and cocaine and sexual acting out and hookers and have a fantastic sex life or I can be in recovery and have no sex life or have a really boring sex life or never having enjoyed sex. It's this artificial black and white thinking. And so one of the tasks that I think is to help our clients understand they can be sober and clean and not acting out and have a fantastic sex and intimacy life as well and they can, but it's just sometimes that's hard to believe at first. They think it's our job to figure that out.

And then finally in concluding, some elements we need and they need, patience, you know, letting it go, a lot of gratitude, a lot of self-love and a lot of healthy connection.

And I believe that is it. And we have some times for questions.

>> JESSICA O'BRIEN: We do. I have a lot. So are you ready?

>> DAVID FAWCETT: Yes, I am.

>> JESSICA O'BRIEN: Okay. So the first -- actually there was a couple of people that asked about medications. One said are there medications to help with meth withdrawal or the impact of dopamine depletion and another person asked what is your opinion of the use of antidepressants during post acute recovery period when dopamine levels are so low.

>> DAVID FAWCETT: Great question. There's a mad dash right now to find a medication that will help with amphetamine cravings and withdrawal, like we have for opioids. So far we don't have anything definitive. However there's some really interesting things going on. There's been a lot of research done on say like Wellbutrin, which works with dopamine as a way to replenish dopamine levels faster and it didn't really have much effect. Remeron, an atypical antidepressant showed it had some effect. The one that has the most potential is Naltrexone, it does seem to be quite effective at reducing meth cravings. When combined with

therapy and the research -- this is anecdotal and based on research that's going on. We don't have reports yet. But I think there's actually a couple of research studies out now that show some partial data analysis of Naltrexone, but anyway, I think we're looking there for something that will be really effective in helping restore some of that balance quicker.

The other thing that they're looking at are a lot of infusions, different chemical compounds, proteins and that kind of thing that will help restore and rebuild the neurocircuitry quicker. There's been I think be cautious, there's been a lot of stuff on the market. People really trying to make money. They were treatments a couple of years ago for 10 or $15,000, basically just taking a couple other drugs on the market and using them off label in this unique combination which didn't do anything. So there's a lot of charlatans out there. The one thing that we do know helps restore the neurocircuitry quicker is exercise. Exercise releases different kinds of amino compounds -- I want to make sure I stop on time.

It releases certain proteins that help rebuild those things quicker.

Now I will say remember with these folks, they're very prone to cross addiction, and so I think -- I always have to give a warning about exercise, that they will embrace it to the point where they're hurting their knees and hips and getting in trouble. So be careful with exercise, but it's a really good thing.

In terms of antidepressants. I think it's very useful. It's a chemical thing. The dopamine is depleted, the circuitry to replace it is damaged, their moods are messed up and very often they find some relief for a while during that post acute phrase during antidepressants. It's very common, it's very valuable and sometimes also like a low antipsychotic as well.

>> JESSICA O'BRIEN: Great. Thank you.

Robert from New Jersey asks what are your views on harm reduction strategies for these patients?

>> DAVID FAWCETT: Great, great question.

Yeah. So, you know, harm reduction I think is a little tricky, and I'm biased because the people I have seen my whole career is people who have sought treatment who identify as having a problem and needed help and I think for those folks and for meth in general, I think it's hard to say I'm a social meth user. Meth is so addictive, and I'm not hyperbolic that you use it once and you're addicted. But it's so dangerous. The cases I've seen where guys can get away with it, they're very prescribed I guess is the word I'm looking for. They said they might go to a circuit or dance party once a year and only there in a different city, at that place do they use drugs and they partied and then they come home to their life and they're (indiscernible) so if it's totally separate like that, it's somewhat manageable. Okay. Other things I think it's tricky.

Harm reduction come in, I think it's a very valuable role because many guys aren't ready to give it up, even when it's really causing damage to their lives and I do a lot of harm reduction initially. On the road to abstinence. If they want to go there and usually they do after a while, but harm reduction, cutting down on the use, cutting down on the mode of ingestion, doing some safety checks, that kind of thing. So I think it's use of the. I worked with New York City. They have a program called the recharge program that actually was kind of a response to that statistic I had about 160 percent increase in overdoses in one year. They quickly put a meth program in place, and overlaid it on the HIV infrastructure, really cleverly done, but it's a harm reduction program and the reason for that is they get people not just interested in going to treatment or not just interested in quitting or not even thinking they have a problem, but they get people across the board. So if you're thinking about (indiscernible) to change, the pre contemplation crowd is probably not going to be receptive and you walk in with some information about meth and you say you got to give it up and maybe go to treatment, they're going to walk out the door so I think we lose people unless we have that more comprehensive open approach for harm reduction and allowing them to come in and taking them where they're at. I have run in years past here in Fort Lauderdale a kind of no stupid questions group, everybody welcome, whatever you want, but just get information, no judgment, no shame, no trying to convince you that you need to do this or that. I think that approach is really useful.

But there is a point where I think people can start to fool themselves where they think it's not a problem and it probably has crossed the line.

>> JESSICA O'BRIEN: Great. Thank you.

Drew from Seattle asks where do poppers fit into the mix? Used to be amyl nitrate. I know they're much more short term in effect but I've seen a rise in their use with masturbation and sex.

>> DAVID FAWCETT: Right. Poppers have never really gone away. They're kind of reformulated, they're rebranded. Poppers for the people that don't know used to be -- 'cause they can't sell them as what they are, so the last thing successful marketing thing was to call them video head cleaners and I challenge anybody to find somebody who has a videotape deck. They're still there. They're dangerous. They fit right into the head stage (indiscernible) masturbation and porn but you see them in sexual situations. They become part of that ritual and integrated into the scene.

I've had guys in recovery who really question poppers. It's not really my problem, but poppers are really are a problem if it's been part of their addictive ritual. It's very much a mood changing element. And poppers are not benign. They cause a drop in blood pressure as does methamphetamine and a lot of daily drugs they take. So people can get in trouble with that. We also know

from one of the studies that was a long term, it's called a multi city AIDS cohort study that looked at HIV over like 30 years, that the use of poppers was I think the second strongest predictor of (indiscernible) HIV. So it's very much part of this ritual. I think it's sometimes minimized. In fact (indiscernible) program in recovery I think there's a lot of gay guys who are using poppers and not talking about it. From an integrity point of view (indiscernible) yeah, I think they're a problem.

>> JESSICA O'BRIEN: All right. Thank you.

Ann from Washington asks what is the average length of time for recovering from various chronic psychological effects, for example confusion (indiscernible) or maybe libido within 12. Also she asks does physiological recovery timelines, do they change with age? So does it take longer for someone who is older to improve.

>> DAVID FAWCETT: Yeah. Great, great question. And yes, age impacts. Age impacts psychological ability as well. Kind of the restoration of the healthy arousal template will take time and will take longer the older you are. And so that gets slowed down to kind of come back and readjust where you can find pleasure in things that used to give you pleasure, like your wife or your husband or ice cream or whatever it is. So, yeah, so psychologically generally with age, it takes a longer time.

With premorbid conditions, it can take longer. So with meth, chemsex in general, meth particularly, it's a real kind of wild card. If you're prone to depression or anxiety before, you're not really sure what you're going to get when you get clean because oftentimes you I've seen those depressive (indiscernible) in general I would say by 90 days, the paranoia should have pretty much abated. The mood stabilization can take longer. And I think also it starts not to be so much related to the drugs at that point but the other feelings from all the stuff that's been disconnected all those years from trauma or other life experiences, the anxiety, the depression, the trauma, the grief, all that starts to bubble up and that starts to impact moods as well. So you start to get other issues starting to have an impact on mood.

The longest I've heard of, I had a client who was an executive in a big company, who was a meth user, and I remember him on the second anniversary, he came in, had a session, and I said I could finally read a book this week and understand it and (indiscernible) so for him, and he was in his late 50s, so I think it just took that much longer for him to be able to kind of organize the data and have his verbal memory come back. But it varies by individual, but generally I think in that reward circuitry, the slides, the 24 months, I really have -- I rarely have anybody after a year who was conscious of an impaired dopamine system, right? I think if we were testing him or her, they probably would show it wasn't quite normal but I think from a subjective point of view, from the person's point of view, they were back to normal.

>> JESSICA O'BRIEN: Great. Thank you.

Great answers.

We actually are out of time, so thank you, Dr. Fawcett for the wonderful presentation and wealth of knowledge on this.

For more resources, guys, if you want more information, you can check out Dr. Fawcett's website as well as his books, crystal city, and lust, men, and meth. He also hosts a podcast called sex, love and addiction, and actually I think crystal city you said was that a movie, a documentary?

>> DAVID FAWCETT: It's a documentary, yes.

>> JESSICA O'BRIEN: Apologies, great. Addition great resources there.

Just a reminder that all the information you need from this particular webinar is on the same web page where you registered. So for the CE tests, at the end of this, you can go right back to the web page and it will be there for you.

Just a note of some wonderful upcoming webinars that we have. Tune in you can on November 18, we're having adolescents with co-occurring disorders already in our care, by Michael Fox. On November 20, always daring distraction, ADHD and substance use disorders, with Cheri DeMoss, so if you can get yourself signed up for those.

A reminder if you're not aware of it, we have our cultural humility series. Check it out so you can stay up-to-date on the latest news on the series. They're all free and we'll have more to come.

So as an additional resource, NAADAC, the association for addiction professionals, has provided a COVID-19 resource page. Definitely applicable now. As it has been. And it has six excellent free webinars covering top concerns in the addiction profession and presented by leading experts in the field.

We also offer two specialty online training series, the first is the (indiscernible) website at the bottom of the slide. It complements our newest workbook on clinical supervision.

Our second series is addiction treatment in military and veteran culture, which you can find out more information there. The bottom of the slide. It's a really great series, so please check that out as well.

Just a reminder as a NAADAC member, a quick review of the benefits, by joining you're going to have immediate access to over 145 CEs which are included as an exclusive NAADAC member benefit. NAADAC members also receive immediate free access to our quarterly advances in addiction and recovery magazine, which is also eligible for CEs and become a part of our national initiative.

A short survey, remember, guys, we like your feedback. It's going to pop up at the end. Just take a few minutes to fill it out and give us your feeds back, it informs webinars to come.

So thank you again for participating. Thank you, Dr. Fawcett. It's really wonderful having you here, for your valuable expertise and knowledge for being here.

I encourage you to take some time to browse our website. Learn how NAADAC (indiscernible) take care, everybody and enjoy your weekends.

>> DAVID FAWCETT: Thank you.

(End of webinar.)

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