SOMETHING FOR THE PAIN

EPISODE 26: Surveying Substance Use Disorder: Kratom

(30 mins)

(0:00)

[cue guitar music]

[Sam Steffen]

This is *Something for the Pain*, a podcast produced by Project ECHO Idaho, made for Idaho's healthcare professionals working to prevent, treat, and facilitate recovery from opioid and substance use disorders throughout the Gem State. I'm your host, Sam Steffen.

[theme song]

Today we're continuing our theme of 'Surveying Substance Use Disorders' and are going to be talking about Kratom. This episode features a presentation by Anushka Burde, HIV and Ambulatory Care Pharmacist, Idaho State University in Pocatello, titled "Kratom: What Clinicians Need to Know." This lecture was recorded on Dec. 7, 2022 as a part of ECHO Idaho's Behavioral Health in Primary Care series. Here to introduce today's presenter is ECHO Idaho Program Manager, Shannon McDowell.

[Shannon McDowell]

Hi everyone! Welcome to ECHO. My name is Shannon McDowell, I'm a program manager here at ECHO. We appreciate all of you who called in. Our topic today is really another interesting topic. It is on Kratom: What Clinicians Need to Know. Anushka Burde is going to be presenting for us today, so Anushka, I will let you introduce yourself for today.

[Anushka Burde]

Thank you, Shannon. Good afternoon, everyone, my name is Anushka Burde, I'm a licensed pharmacist in Idaho and I'm also a faculty member at the Idaho State University College of Pharmacy. My area of practice is basically HIV, Hepatitis C and community pharmacy, and I also teach in the pharmacy curriculum in the PharmD program at ISU.

Today's topic is basically 'Kratom: What Clinicians Need to Know.' Hopefully at the end of this presentation you will be able to describe the origins and potential uses of kratom. We will also discuss a little bit about the physiologic effects of kratom on the human body, recognize some of the adverse effects associated with its use, then I will go over some of the CDC data on Poison Controls presented by the Poison Control Center on overdose and deaths related to kratom use. I will also discuss a little bit of the legality of kratom use in the United States and then we will go over some of the clinical presentation and physical findings which you will probably see when somebody is withdrawing from kratom. And then the last one is to be able to discuss treatment options to treat kratom use disorder and be able to treat acute overdose.

So let's go over what is kratom: kratom is basically known as *mitragyna speciosa*. It is derived from the leaves of a tree and this tree is indigenous to tropical and subtropical regions of southeast Asian countries such as the Philippines, Thailand, Malaysia and Myanmar. It is also known by different names such as 'thang,' 'kakuam,' 'thom,' 'ketum,' and 'biak.' So historically a lot of field workers in these southeast Asian countries who worked in the rubber plantations would use kratom to help with energy and fight off fatigue so that they could work pretty long hours in the fields. Those natives in those countries would also use it for a variety of other reasons such as pain, cough, fatigue, diabetes, diarrhea, fever and to help improve libido. And now kratom actually has more than 50 different alkaloids, or 50 different active chemical compounds, of which two of the most studied and pharmacologically active compounds are known as mitragynine and 7-hydroxymitragynine. Now there are no really nationally projected surveys which can accurately tell us really exactly the number of people might be using kratom in the United States, however it is plausible that there are about 10-15 million people in the United States who may be using kratom.

Now in a lot of other countries, kratom really is orally ingested and the way people use kratom is, they will either chew the leaves of this plant or they will actually grind up the leaves and make it into a powder form which they can probably mix in any kind of a beverage, or they will actually boil the leaves in water to make a decoction, or basically a tea, and then they will mix it with cough syrup to get rid of the bitter taste of the kratom leaf. In the United States, the powdered form is processed in form of a capsule, tablet, sometimes people will actually mix the powdered form in a beverage and drink it, and there is actually liquid formulations also present which you can use in electronic drug delivery device such as e-cigarettes.

Now there are three different main types of kratom and the color of the vein of the leaf and the maturity stage actually determines what specific unique effect the leaves will have on the human body. So let's start with the first one. So red-vein leaf is basically picked when it's fully mature and it is supposed to be of maximum potency. Apparently it is thought that red-vein is the most commonly sold type of kratom in the United States. So this one is actually used more for its calming, relaxing and stress-relieving effects, and it also helps to improve sleep, reduce pain and help with muscle tension.

Now on the other hand white-vein leaf is picked when it is at its earliest stage of maturity, so don't let that make you think that this type of kratom is less effective. It just has a separate or a different set of effects on the body. For example it is used more for its energizing and mood-enhancing effect or maybe used more for mental alertness and sharpness. I kind of think of this type of kratom almost as something like amphetamine or dextro-amphetamine or methylphenidate which we use for ADHD focus and concentration, and the interesting thing about white-vein kratom is that it actually can sometimes cause insomnia, just like stimulants, especially if administered during the later half of the day. And then one more thing about white-vein kratom is that it's actually really more expensive compared to red-vein and green-vein because it is picked at a particular stage of maturity and so it's just hard to get which is why it's a little bit more expensive.

And then green-vein on the other hand is considered a mix between red-vein and white-vein. The leaves are usually of medium-level maturity, but don't, again, let that make you think that it is medium potency or medium quality, it's just that it is has more of an effect in terms of it acts like a mild energy-amplifier or it basically helps to improve alertness and focus. It is thought that the effects of green-vein are long-lasting but kind of subtle, and I guess one of the advantages that people think of green-vein is that it

actually helps with pain, but it doesn't have the drowsiness or the lethargy which the red-vein kratom is potentially thought to have.

Now because of the opioid epidemic a lot of providers are pretty conservative in terms of opioid-prescribing, and so a lot of people who are basically dependent on opioids are kind of resorting to alternatives in order to support their habits, and because of the scarcity of opioids. So kratom really is used for a lot of reasons. It's used for treating chronic pain in terms of helps with relaxation and pain relief. It also helps with mental health, alertness and to help improve anxiety and depression. Sometimes people use kratom also as a substitute for other substances such as alcohol, cocaine and amphetamines. Apart from these traditional uses, kratom also is thought to have other benefits such as antipyretic effects, it helps boost the immune system, it has also been used as an anti-hypertensive, anti-viral medication, anti-diabetic agent. It also has some stimulant-like properties which also results in making it an appetite-suppressing agent to probably help with weight-loss to some extent. It has also been used as an antitussive agent or an anti-diarrheal agent.

So much is still unknown about kratom, however there are a few interesting facts about kratom. The effects are dose-dependent. What I mean by that is lower doses of about 1-5 grams per day has more of a stimulant effect. Doses between 5-15 grams per day are thought to have more opioid-like or analgesic effects on the body. And then doses greater than 15 grams per are thought to have more sedative effects on the body.

The interesting thing about the mitragynine which is the most commonly found alkaloid in kratom is that it's actually broken down in the liver into its metabolite called a 7-hydroxymitragynine. Now 7-hydroxymitragynine is actually more potent in terms of binding to the receptors, however the percentage of 7-hydroxymitragynine is actually pretty low, which is why it is thought that it is not as risky in terms of respiratory depression and things like that, as compared to opioids. Now both of these alkaloids or compounds—active chemical compounds—activate the mu-, delta- and kappa-opioid receptors which is why it is thought that kratom has analgesic effects like opioids. Interesting thing is that kratom actually also is thought to bind to other receptors such as the adrenergic, serotonergic, and dopamine-receptors which is why it is used for other reasons such as anxiety and depression and mood problems as well.

The onset of action of kratom is about 10-15 minutes after the ingestion of the dose and the effects are thought to last for about 4-6 hours after the ingestion of the dose. Kratom is metabolized by the liver and so as providers we need to think about drug-drug interactions and we also need to think about people who may be ingesting kratom and who also may be having liver diseases or chronic liver diseases should be counselled on the side-effects of kratom and the adverse effects of kratom.

Now most of the people who experience adverse effects report that they're pretty mild and are kind of self-limiting and resolve on their own. The adverse effects of kratom can mimic opioid side-effects as well as stimulant side-effects, again, dependent on the dose of kratom that people are ingesting. So people who may be ingesting higher doses, between 5-15 grams per day may have opioid-like side effects such as nausea, vomiting, constipation, dry-mouth, dizziness, drowsiness, and people who may be taking lower doses of kratom, between 1-5 grams, may experience some stimulant-like side-effects such as weight-loss, tachycardia, anxiety, agitation and loss of appetite. Doses probably greater than 15 grams per day could also have potentially pretty serious side-effects such as confusion, tremors,

seizures, hallucinations, blood pressure issues, lung problems such as slow breathing, hepato-toxicity, anorexia, thyroid injury, coma and/or death.

Adverse effects have been noted usually when people take about 5 grams of kratom 3 times a day, so about 22 times per week, that is when people have noticed some of the side-effects of kratom, so this was found in a study I was looking at. People think kratom may not be as habit-forming as opioids, but actually that's not true. To some extent there is risk of dependence, tolerance and addiction to kratom as well. And people also maybe do not think about the potential drug-drug interactions that kratom could potentially have with other medications, so for example kratom actually inhibits the CYP450 enzyme, which means that medications which are substrates of let's say CYP2C9 like Warfarin or CYP3A4 which benzodiazepines actually are substrates of CYP3A4, and then dextromethorphan, for example, is CYP2D6 substrate—so if kratom inhibits the CYP enzymes, that means that the metabolism of other drugs that I just listed like Warfarin, dextromethorphan or benzos, will be reduced, which means that the level of those drugs will be pretty high, which can again result in overdose or even death, for example. Kratom also stimulates alpha-2 adrenergic receptors which means that it can potentially interact with medications such as stimulants or hypnotics or analgesics, and especially when kratom is combined with other substances such as alcohol or benzos or opioids, there is again pretty high risk of respiratory depression and death. Kratom also inhibits the p-glycoprotein system which means medications such as HIV anti-viral medications such as proteus inhibitors which are substrates of the p-glycoprotein or maybe antibiotics such as clarithromycin or erythromycin which are substrates of the p-glycoprotein could potentially increase in concentrations in the body if inhibited by kratom.

Now kratom products also contain a lot of heavy metals or harmful contaminants, and just an interesting fact—between January of 2017 and May 2018, the CDC basically declared that there were about 199 people from 41 states who suffered from Salmonella contamination or outbreak. And 10 of those people were actually from Idaho. And this Salmonella contamination was actually linked to kratom consumption. So I think about 74% of those people actually reported to consume kratom in forms of pills and powders and liquids which had contamination of Salmonella. The reason I think this is a huge issue is because kratom is really not regulated by the FDA and is really—so nobody has idea what kratom products may actually contain.

So this is just the Poison Center data from 2011 to 2017 that the CDC posted. This data was collected from the National Poison Data System. So the National Poison Data System basically gets data from all the Poison Centers in the United States. This was a 7 year study period and the CDC reported that the highest kratom exposures were reported between 2016 and 2017. So I think about 65% of kratom exposures were reported between 2016 and 2017, however the data I'm presenting is between 2011 through 2017. So there were about 1,807 kratom exposures reported between 2011 through 2017, and a lot of those were reported by adults who were between 31-50 years of age. Now these adults reported to use kratom for a variety of reasons, such as acute and chronic pain, mood conditions and to decrease or abstain from non-prescription opioids. Now more than 1/3 which is about 31.8% of the exposures resulted in healthcare facilities admissions. And then more than half, so about 51.9% exposures resulted in serious medical outcomes. 9 out of the 11 deaths involved other substances as well, and those substances were basically like diphenhydramine, cocaine, fentanyl, alcohol and benzodiazepines. 7 neonatal exposures were also reported, of which 5 actually presented with kratom withdrawal. So just an interesting fact, the CDC said that kratom exposures were highest in Idaho and Oregon, and the lowest in Delaware and Wisconsin.

Now let's look at the legality of kratom. So use or sale of kratom is banned in a lot of countries, however in the United States, kratom is actually pretty legal in a lot of states—not all, but a lot of States. Kratom is actually easily accessible in stores and online, so anybody could buy kratom. Kratom is not currently listed as a controlled substance by the DEA, so one interesting fact is that the DEA made a proposal actually in I believe August of 2016 to propose that kratom should be made a controlled substance, actually a schedule-I substance, because they felt like really there was no much use of this substance and it actually led to misuse. However, two big organizations had a lot of protest and there was a lot of protest at the White House and the policy makers basically did not pay attention to it, which is why it is currently still not listed as a controlled substance, however the DEA does say that it is a drug of chemical concern. Again, kratom is not approved by the FDA and it is illegal in six states of the United States as of mid-2021.

I just wanted to highlight where kratom is legal and where it is not. In a lot of states, kratom is legal, however there is the Kratom Consumer Protection Act in these states…

[Sam Steffen]

The states Anushka is referring to here where kratom is technically legal according to stipulations provided by the Kratom Consumer Protection Act are: Oregon, Nevada, Utah, Arizona, Oklahoma and Georgia.

[Anushka Burde]

…and what I mean by Kratom Consumer Protection Act is that there are strict guidelines in terms of manufacturing, distribution, possession, sale, fines and penalties in terms of kratom use, so you cannot dispense kratom to minors or there are strict labeling requirements in terms of what quantity of 7-hydroxymitragynine or mitragynine is present in those products. And so there are strict rules in those states.

In a lot of states kratom is pretty much legal, there is no restriction in terms of kratom use.

[Sam Steffen]

For reference, most of the states on this map appear in green. They include: Idaho, Washington, Montana, Wyoming, New Mexico, North and South Dakota, Nebraska, Kansas, Texas, Minnesota, Iowa, Missouri, Louisiana, Michigan, Ohio, Kentucky, West Virginia, Virginia, South Carolina, Maryland, Pennsylvania, New Jersey, Delaware, New York, Connecticut, Massachusetts, Maine, Alaska and Hawaii.

[Anushka Burde]

And then there are some where there are local bans.

[Sam Steffen]

The yellow states are: California, Colorado, Illinois, Mississippi, Tennessee, North Carolina, Florida and New Hampshire.

[Anushka Burde]

And then the six states where kratom is actually illegal is Wisconsin, Indiana, Arkansas, Alabama, Vermont and Rhode Island.

Now just an interesting fact: the Idaho house bill 567 was proposed I think in 2020 but they tried to put some regulation and restrictions in terms of kratom use, registration to provide for labeling, to provide for penalties and prohibit sale of kratom to minors, however really nothing much has been done and the bill is I think still pending.

So now let's look at what a kratom withdrawal looks like. It pretty much mimics opioid withdrawal. People who withdraw from kratom could present with signs and symptoms very similar to opioid withdrawal such as nausea, vomiting, chills, diarrhea, runny nose, body aches, restlessness, irritability, agitation and headache. You can also find physical findings such as madarosis, hypothermia, tremors, diaphoresis, and psychiatric symptom such as nervousness, anxiety and depression. Usually kratom withdrawal happens 12-24 hours after the last dose of kratom, and the withdrawal effects can last for about 4-5 days after the last dose of kratom.

So treatment and management: kratom use disorder is pretty much really treated just like opioid use disorder, especially if people are taking really high doses of kratom and if they want to get off of kratom, you might want to have them slowly taper off the kratom. You can also try to use medications such as buprenorphine-naloxone or buprenorphine-methadone which we also use to treat opioid use disorder. You can also use medications such as Clonidine, hydroxyzine, gabapentin which are used for withdrawal symptoms as well. And again counseling is also always important.

Now if there is an acute overdose, usually the treatment is largely supportive, and it is very organ-specific. So if a specific organ needs attention, then it needs to be treated appropriately. For example if there is acute hepatitis or severe liver injury, then you can use an acetylcysteine; if the patient is experiencing neurological symptoms such as seizures, you can use anti-epileptics. If there is kidney or cardiovascular injury then appropriate measures have to be taken. I believe there are some cases where naloxone can also be used if there is specifically opioid-like withdrawals or side effects noted in the patient.

So just a few clinical and counseling pearls. It is important that we as clinicians and providers provide always non-stigmatizing care to our patients and there's always respectful assessment of kratom use whenever we ask questions to our patient. Always try to ask open-ended questions, maybe talk a little bit about why or how they ended up using kratom, or what do they want to get out of this visit? Do they want to completely abstain from kratom or do they want to reduce the use? And maybe try to talk to them about tapering kratom. You can also talk to them about medications such as buprenorphine, naloxone or methadone which are used for opioid use disorder and maybe they could potentially maybe benefit from those medications so that they can get off of that kratom. As providers you can tell them that the FDA does not really regulate this product and so as a clinician you are unable to recommend its use, however you can give them a little bit of education about the dose-dependent side-effects and what standard doses usually people take of kratom. Again it is important to tell your patients that there is no organization which regulates these products and so we are basically unable to assess its quality, purity, potency and safety. Maybe they could possible choose products which follow good manufacturing practices, but again that is something that is up to the patient. Again it is important to let them know that kratom is illegal in certain states and the risk for arrest is dependent on the state. Again, as I talked about the different potential drug-drug interactions, avoid combining kratom with other medications such as alcohol, fentanyl and other opioids which can result in respiratory depression. It is important to discuss side-effects of kratom and the different treatment options such as buprenorphine,

naloxone or methadone for its chronic use, and then risk of kratom use during pregnancy because withdrawals have been noted in babies as well, after delivery.

So, conclusion is that current trends in kratom use are pretty concerning and this is a consequence of the opioid crisis, so until and unless we actually address the opioid crisis, kratom use will still continue to grow and will result in a public health issue; it is important to promote awareness among healthcare providers; and then extensive and high-quality studies are needed in order to understand the mechanism of toxicity of kratom so that we can come up with standard guidelines to treat our patients. And then patients should be educated on potential harm, dependence, toxicity, product quality and contamination.

So the key points of this presentation is that kratom is derived from the leaves of a tree which is native to southeast Asian countries; it is used for a variety of reasons such as opioid withdrawal, dependence, cravings, chronic pain, and also as a stimulant. It acts more like a stimulant at lower doses and has opioid-like or analgesic properties at higher doses, between 5-15 grams. Kratom has a variety of adverse effects and the long-term effects are still unknown. There are potential drug-drug interactions that we need to think about and a lot of these kratom products are not regulated which means that they could potentially contain a lot of harmful contaminants such as heavy metals and possibility of infections. It is illegal in certain states in the United States. Kratom use disorder can be managed by standard treatments which are used to treat opioid use disorder as well. And then overdose cases are largely managed by supportive treatment.

So with that let's start with a patient case.

[Sam Steffen]

Just a word here about this patient case. Anushka is presenting a hypothetical case here, but it's typical during ECHO sessions to hear real de-identified patient case presentations, delivered from practicing Idaho clinicians, physicians, social workers and other members of patient care teams. If you're a practicing clinician or physician, you can present your de-identified case to an interdisciplinary expert panel to help others learn and to receive free expert feedback from an interdisciplinary panel. Check out ECHO Idaho's website for more details. www.uidaho.edu/ECHO

[Anushka Burde]

So a 45 year old Caucasian male with a history of opioid use disorder, chronic hepatitis C and depressive disorder comes to your clinic seeking treatment for hepatitis C. He reports using kratom. He seems a bit restless and keeps pacing back and forth as you are trying to get his medical history. What are some questions you should be asking him regarding his kratom use?

Musical interlude

[Anushka Burde]

So a few questions that we want to ask our patient would be: What are you using this for? What dose of kratom do you consume? How much do you use in a day? How long have you been using kratom? What formulations do you use? What are some side effects that you experiences? What other substances do you consume?—and this is important because you also want to talk to your patients about drug-drug interactions and the potential risks of adverse effects. How much does it cost you? And maybe you can

actually say, “Okay, well, if you’re paying that much for maybe a small bottle of kratom and if you have let’s say an insurance that would cover something like buprenorphine, naloxone or methadone then you may not even have to pay anything, and so what do you think of maybe switching to something like FDA approved medications instead of paying out-of-pocket for kratom?” And then, what motivates them to use? What are some concerns that they may have? What are your thought on quitting and cutting down on use of kratom? What are your thoughts on switching to FDA approved medications? And then what do you know about FDA approved medications for treating some of your symptoms. So those are some of the questions that I came up with. So with that, that is the end of my presentation. Any questions?

[Neil Ragan]

Anushka, one important point…

[Sam Steffen]

Speaking here is Dr. Neil Ragan, family medicine physician at Health West in Pocatello, and a regular ECHO Idaho participant.

[Neil Ragan]

I’m not aware of any of the standard urine drug screen bottles that show kratom and so it’s possible that some of our patients are using kratom and we don’t know it, so it is important to ask them because they may not tell us. The patients I have who are or have been kratom users were using kratom as an effort to stay away from other drugs like alcohol and opiates and so forth and they moved over to kratom because in Idaho it’s not illegal, it’s plant based, they think it’s safe and so they thought that it was preferable than some other course of action and they didn’t realize what a rabbit-hole they were falling down until they were already in it and then dependent on kratom and then had a really tough time switching to a more appropriate medication.

[Anushka Burde]

Yeah, absolutely, Dr. Ragan. And I actually forgot to mention that. So yeah, a lot of people think of kratom as almost like a natural alternative to FDA approved medication, so they think of it like natural remedy. They also think of it like, it’s legal, and it’s inexpensive compared to some of the opioids, but they don’t realize some of the adverse effects or things that go along with kratom use, so.

[Neil Ragan]

The other thing that I’ve found in talking with my kratom patients, it’s very very difficult for me to determine how many quote unquote grams of kratom they’re using in a day, I just don’t have any idea. I have to kind of base it more on the effect that they’re getting, whether it’s more of a stimulant effect or an opioid effect, and I think that the patient, they can tell me how many capsules they’re taking, but they don’t really have any idea how much they’re using either, in terms of grams.

[Anushka Burde]

Absolutely.

[Brian Crownover]

If you take the kratom at the higher dosages…

[Sam Steffen]

Speaking here is Brian Crownover, an Idaho physician and an ECHO Idaho participant.

[Brian Crownover]

if you were going to tell a patient, you know, what percent is this really a legal opiate? Is this like 80% similar to an opiate? 50% similar to an opiate? 95%? Estimates?

[Anushka Burde]

So in terms of like how similar it is to opioids, I think there was like some percentage of the 7-hydroxymitragynine, which is the active chemical compound. I think it's like 13 times more potent compared to morphine, is what I found in the literature.

Benson Blair's question is: can you touch a little bit more on the dangers of mixing kratom with other drugs, especially barbiturates?

So I think kratom has not been studied very well and so it's really hard to specifically say what exactly could potentially happen, but again when co-ingested with other medications such as benzos or alcohol or cocaine or fentanyl or barbiturates or whatever it is, it actually increases the risk of CNS depression and respiratory depression.

[Neil Ragan]

My experience in transitioning people from kratom to for example suboxone or buprenorphine has been that it's not quite as smooth as a typical standard short-acting opioid transition to suboxone, it takes a little bit longer, the patient has a few more side effects, so it's a little bit more difficult I think for the patient and for the provider to try to ride this out until their side-effects have subsided to the point that they can be more tolerable. And the patients who I have who have been the most successful have actually started suboxone and they have continued using kratom in a steadily declining amount over a few weeks before they're able to completely stop using the kratom. And that's based on a small n, so I don't know what other people's experiences have been, if it fits what mine has been or not.

[Anushka Burde]

So, Dr. Ragan, maybe I can quickly comment on that. So I was looking at the literature and it says that the mitragynine which is the active compound in kratom apparently is thought to have about 23 hours of half-life which means that you would maybe multiply it by 5 so about 100 hours for it to completely be eliminated from the human body after the last dose. And it says that the withdrawal effects usually start between 12 and 24 hours after the last dose basically and can last for about five days.

[Shannon McDowell]

Coire, I know you had a question. Did you want to ask that?

[Coire Weathers]

Yeah, thank you this is very helpful.

[Sam Steffen]

Speaking here is Dr. Coire Weathers, psychiatrist at Lost River Wellness in Boise and panelist for ECHO Idaho's Behavioral Health in Primary Care Series.

[Coire Weathers]

I have so many folks who use kratom and I can tell you I've been guilty of not asking before and then finding out weeks or months later that one of my patients with chronic depression, that I think is depression, is using a ton of kratom. You mentioned interactions—and that's usually my question. You mentioned you know alcohol and opiates, I tell them the CNS depression stuff, and we talk about that. I certainly don't recommend kratom, watching folks come off of that stuff is awful. What—specifically though, antidepressants—is there a specific concern about serotonergic agents and kratom? I know it hits a ton of receptors...

[Anushka Burde]

Yeah, so I can think of like, let's say medications such as like Paroxetine for example, which I think is metabolized—or it's a substrate of sep-2D6, and so if you are using kratom which actually inhibits the sep system, then that means that the Paroxetine levels for example are going to go up and the patients are probably going to experience more side-effects. I also looked at one study which talked about potentially increased levels of quetiapine, so now actually risk of increased levels of anti-psychotics depending on how they might be metabolized.

Music

[Sam Steffen]

That again was Anushka Burde, HIV and Ambulatory Care Pharmacist, Idaho State University in Pocatello presenting "Kratom: What Clinicians Need to Know." That lecture was recorded live on Dec. 7, 2022 as a part of ECHO Idaho's Behavioral Health in Primary Care series.

If you'd like to watch the Zoom recording of that presentation, that video is currently available on the ECHO Idaho YouTube channel, which you can access through our website. The Powerpoint slide deck as well as information about how to contact some of the organizations and services mentioned in that talk, are available in our podcast show notes, on our podcast webpage: www.uidaho.edu/echo-podcast

Banjo music

If you're interested in joining our free, live ECHO sessions to receive Continuing Education credit, learn best practices, ask a question or grow your community—please visit our website at www.uidaho.edu/ECHO where you can register to attend, sign-up to receive announcements, donate, and find out more information about our programs.

[Fade out banjo music]

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[cue guitar strum and guitar theme w/ lyrics in background]

We here at ECHO also want to hear your feedback. We welcome your questions, comments and suggestions and invite you to email us at echoidaho@uidaho.edu. And don't forget to subscribe to Something for the Pain using your podcast app. And if you have a moment, write us a review!

[bring up theme song lyrics and chorus until first "echo Idaho", then drop volume and continue playing]

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The contributing voices on today's episode were those of: [Anushka Burde, Shannon McDowell, Neil Ragan, Brian Crownover and Coire Weathers].

We'd also like to thank all of our listeners, without whom none of this would be possible. Without you, we'd just be talking to ourselves.

[Continue to theme chorus, fade]