It’s Not All In Their Head: Psychosocial Factors Associated With Disorders of Gut-Brain Interaction

00:00:07 Claire Davidson: All right, so we’ll get started here. Welcome to The Mindset Health Clinical Webinar Series. We are very lucky to have Dr. Christina Jagielski with us presenting on psychosocial factors associated with disorders of gut-brain interaction. Couple of housekeeping notes before we get started. This is going to be recorded so everyone who registered and signed up will also get a recording at the end of it, and that'll be sent out about an hour or so after the end of the recording. There is going to be a Q & A session at the end as well. So there's a Q & A box at the bottom of the Zoom and you are more than welcome to submit questions in the Q & A box throughout the course of Dr. Jagielski’s talk and she will get to them. I'll also -- I'll read them to her and we'll get to those Q & A questions at the end. So without further ado, I'm just going to do a brief introduction, and then we'll get started.

Dr. Christina Jagielski is a clinical health psychologist in the Division of Gastroenterology and Hepatology at Michigan Medicine. Dr. Jagielski utilizes evidence-based treatment approaches for a range of gastrointestinal conditions including cognitive behavioral therapy, acceptance and commitment therapy, relaxation training, and gut-directed hypnosis. The focuses of treatment include decreasing the intensity and frequency of GI symptoms, adjustment to living with chronic medical condition, and health behavior change, including behavioral changes for sleep and improving quality of life. Dr. Jagielski’s clinical and research interests include the role of trauma in GI conditions. And so with that, I will hand it over to you

00:01:53 Christina Jagielski: Thank you so much Claire for the introduction and thank you to Mindset Health for the invitation to speak today. Today, **[inaudible 00:02:03].** Today I'm going to be speaking about psychosocial factors associated with disorders of gut-brain interaction. So as a brief kind of outline -- so it's going to be kind of a full talk so I'm going to try and cover this as comprehensively as I can in about 30 minutes, but some of this I will certainly be touching on lightly. So I'm gonna do just a brief overview of what DGBIs are, in case you're not familiar with that term. We'll do a session on the gut-brain-microbiota axis. We'll discuss the psychosocial factors that can contribute to DGBIs. Also, talk about communication strategies for discussing DGBIs with your patients, that certainly is an important area. And then we'll end the talk talking about -- with a brief overview of evidenced-based gut-brain psychotherapies and then some resources at the end.

So what are Disorders of Gut-Brain Interaction? So if this is a term that is not familiar to you, DGBIs are replacing the term functional GI disorder. So, there certainly has been controversy and questions over the usage of, or the kind of binary of functional versus structural GI disorders and so this is kind of a change to that term. So -- and it's reflecting on the complex relationship between brain-gut communication, as well as the role of psychosocial factors. And IBS would be kind of the most prevalent of the DGBIs, but other diagnoses that are involved include functional diarrhea and constipation, bloating and distension, heartburn, and dyspepsia. This is probably the most complex-looking slide of the ones in my talk, and there's a good reason for that. And one of the reasons why I find this slide so helpful, and it's also very useful for patients, is to really understand that the gut-brain-microbiota axis is quite complex, it’s very involved, and we'll talk a little bit more about why that can be helpful for patients in just a moment. But as an overview of the gut-brain-microbiota axis is a bidirectional pathway between the brain and the digestive tract, and it involves communication between the central nervous system and the enteric nervous system. And the enteric nervous system is a self-regulating system that resides in the walls of the digestive tract and it can function independently of central nervous system input which is part of what gives it its nickname of the body's second brain. So very important part of our nervous system. And the brain-gut-microbiota axis also involves a number of other systems, including the endocrine system via the HPA axis, the immune system, and the microbiome as well. And so this gut-brain-microbiota axis plays a critical role in the regulation of digestive processes as well as modulation of the immune system, and coordination of physical and emotional states as well. So now let's get into some of the primary psychosocial factors that are involved in the **[inaudible 00:06:11]** of DGBIs. I'm gonna go into more detail about each of these. So the first is sleep, the next one is early life stress, symptom hypervigilance, visceral hypersensitivity, and coping strategy or maladaptive coping strategies.

00:06:37 Christina Jagielski: So patients, actually --

So the first one that we will discuss this evening is early life stress from trauma and there's been about 30 years' worth of research into the trauma as a contributing factor to the development of DGBIs as well as an exacerbating factor. So -- and a lot of this research has been done in patients with IBS, so that's what you're seeing on the slide, and that's primarily because that is again the most prevalent population of the DGBI population. So the research shows that patients with IBS are more likely to report a history of early life stress or trauma compared to patients with other GI conditions, and primarily we're thinking about things like in comparison to patients with inflammatory bowel disease, as well as healthy controls. Early adverse life events or EALs are associated with lower levels of resilience in patients with IBS. That is patients with a history of early life stress or have a harder time or tend to have a hard time bouncing back from the negative impacts of IBS than patients who did not have a history of early life events. We've also seen studies that show directly the post-traumatic stress disorder was a significant risk factor for the development of IBS and there's been a number of studies looking into various ways that exposure to early life stress can contribute to physiological changes including an impact on the HPA axis. Finally, patients with a history of trauma or abuse are more likely to experience comorbid psychiatric conditions such as panic, depression, sleep disturbances, and somatic complaints. And these conditions also all independently can contribute to the development and exacerbation of IBS and DGBIs as well. So it's kind of multiple ways that trauma and early life stress can impact patients with DGBIs.

00:09:09 Christina Jagielski: Next topic is sleep. So we know that sleep can both contribute to the impact of our development of DGBIs and it also -- we also know that GI conditions can also negatively impact sleep so works in both directions. So in a study of patients in a tertiary GI clinic 72 patients with a history, with IBS, reported poor sleep and 51% had clinical insomnia. Sleep awakenings were significantly associated with increased abdominal pain and GI distress. Sleep awakenings and of course the quality are associated with non-GI pain such as headache and back pain, as well as somatoform complaints. In addition depression, anxiety, and GI-specific anxiety all correlated with waking episodes. And then finally looking at shift work in a study of nurses, those with rotating shift work has significantly higher prevalence of abdominal pain compared to those with a daytime or consistent nighttime shifts. So disruptions in hygiene and being able to have a consistent sleep schedule also can directly impact DGBIs as well.

00:10:45 Christina Jagielski: So maladaptive coping responses and ineffective use of coping strategies are some of the primary targets of what we do in GI behavioral health. So this is kind of broken down into two main areas here. So the first is a very commonly seen coping response called catastrophizing. So if you're not familiar, catastrophizing is an exaggerated set of negative thoughts or responses to experiences and this can be both -- to actual lived experiences as well as worries about hypothetical experiences as well, as well as the underestimation of one's ability to cope with those experiences. So for example, for a patient with IBS, for example, a commonly expressed or catastrophic type thought will be something like, 'If I had a bowel accident in public' or 'If I had if I dealt with abdominal pain in the middle of my talk, then I will be so embarrassed and I just wouldn't be able to live it down'. So it's both that the worst-case scenario might happen and also I couldn't survive that that would be too much for me. And so other studies have shown that catastrophizing partially mediated the relationship between depression and abdominal pain severity in patients with IBS and the connection between both anxiety and depression and pediatric abdominal pain. And then, another area of interest and one that comes up quite often in my clinic is the use of or ineffective use of certain types of coping strategies,

And so there's kind of three categories of coping strategies. So those are problem-focused coping strategies, which you often might think of as problem-solving strategies. So active coping, planning, selecting an action, taking action, the ability to kind of look at what happened and then come up with a better plan next time. The -- there is emotion-focused coping strategies, which involve things such as acceptance, constructive self-talk, relaxation, even the use of healthy distraction, we could fit into that category. And then we have avoidant coping strategies. So things such as behavioral disengagement, self-blame, denial, substance abuse. And so one of the interesting findings is that patients with DGBIs tend to be very good users of problem-focused coping strategies and in many other situations, this can be a great thing and so I will often see that many of my patients have been very successful in navigating various hurdles and problems and being very successful in their careers through the use of these problem-focused coping strategies. Where this becomes a problem is when they try to apply those problem-focused coping strategies to IBS and other DGBIs and the reason for that is that problem-focus coping strategies are not effective with uncontrollable situations and as we know IBS and other DGBIs tend to be unpredictable. We don't always know they're going to come on, don't always know exactly what might be causing it in the moment especially because it's so multifactorial, and so it is not a controllable situation, in many conditions. And so what we see is patients using a tool that has worked for them in other context and trying to apply it on another contact where it has shown to be less effective. So it's kind of like using a hammer when a screwdriver might be more effective in that situation. And so I often work

with patients on how to identify which situations, problem-solving can be really helpful, and which situations emotion focus coping strategies might be helpful. And then on the avoidant coping side we certainly see this in a number of different ways and the most common one would be avoidance of social situations, avoidance of going out to dinner, avoidance of things like dating. Feeling like I can't go to work because I might have problems or my symptoms might get in the way. But all of these are things that we can target in GI psychology.

00:15:40 Christina Jagielski: And then another component is symptom hypervigilance and attentional bias. So patients with IBS report increased attention to physical symptoms, as well as more difficulty tuning out unpleasant sensations, and so -- We know that if I were to ask you to do a body scan right now and have you really pay attention to how you're feeling, what you're feeling in your body and go through each region of the body, you're going to be more likely to become aware of various sensations. Maybe tensions, fitness[?], pain in certain areas, that you would have five minutes ago before I ever brought into your attention. And for patients with IBS and other DGBIs, this is -- you can multiply this like 100 fold and the brain can become both consciously but also unconsciously, just programmed to pay attention to that stimuli and it would start to notice anytime there is some abdominal discomfort in a way that maybe someone that did not have IBS would not notice those sensations, but they would kind of tune them out as over severities. So this can lead patients to become more worried about sensations and then they become more anxious, concerned about what that means, is this going to get -- this is going to get worse, and then that, due to the impact of the GI stress cycle that we'll talk about in a minute, that could then actually make the symptoms worse. So it becomes kind of a self-fulfilling **[inaudible 00:17:12]** there. There is studies that have shown that patients with IBS do report higher rates of hyper-vigilance compared to those with **[inaudible 00:17:22]** as inflammatory bowel disease.

00:17:28 Christina Jagielski: And then the last factor that we'll discuss is visceral hypersensitivity or the tendency to experience discomfort or pain in response to normal bowel functions. So we talked about the enteric nervous system before and research has shown the enteric nervous system nerves send stronger pain signals to the brain and response to normal activity in the GI tract, including typically undetectable muscle contractions moving through the GI tract, as well as normal gas patterns, which are then experienced as pain or discomfort. And a lot of this research was done using balloon distension where they shown that patients with IBS have lower pain tolerance to the balloon inflation compared with healthy controls.

So those are the main factors that can contribute to the onset of and the exacerbation of DGBIs. So the next thing I wanted to discuss was communication strategies for helping patients to understand how these factors might play a role. Because as you will see, there are some good ways and helpful ways and then there's some not so helpful ways. So let's start with the not so helpful ways. So, you may have seen some of these messages before. You may have used them yourself and so it's not meant to imply any judgment. I just do think it is very important that we are aware of the role of messaging here. So some of the most common messages that patients complain about that they have received from their doctors when they get a diagnosis of, for example, irritable bowel syndrome, would be you know, ‘Good news, your tests are negatives. There's nothing wrong with you.’ Essentially, good luck. There's nothing else I can do for you. ‘It's probably just stress.’ ‘Maybe you should try some relaxation.’ ‘Maybe use meditation,’ and then -- But the most upsetting message from a patient perspective is the message that ‘It's all in your head.’ I can probably talk for 30 minutes about this particular topic, but I won't and so we can kind of break down the issues with this into two main categories there.

First, as we discussed earlier, when we were reviewing the gut-brain axis, it's just not true. Especially when we think about things like ‘It's all in your head.’ This is a much more complex network that is involved and there can be multiple factors that are playing a role in the development of DGBIs. And so, when we minimize that down to is probably just stress, even if the majority of this message is true. Right we've done all the tests that are needed and those were all negative and that's great. There's no emergencies, nothing that needs medical intervention, which is great, and maybe there is a role of stress. Maybe I am experiencing more stress here. We know that there's much more involved there and being able to explain that to a patient really helps them to feel like they have a better understanding of what is going on. And the other important aspect of this is that when we use messages such as ‘It's all in your head’, that is perceived as very dismissive. It can also be perceived as blaming the patient like you're doing this to yourself, and patients will often interpret this as my doctor believes that my symptoms aren't real, but I am making this up. And so this can lead to, unfortunately, a lot of unnecessary additional workup, additional medical test in search of proof of what is going on.

So we talked about some of the unhelpful messages. Now let's talk about what are some constructive ways to discuss DGBIs. So this comes from Laurie Keefer’s Clinical Practice Update in Gastroenterology **[inaudible 00:22:04]** and I won't read over this but the main highlights here is that these are just -- We want to start by providing a brief overview of the brain-gut axis and the complexity of that. That really helps a patient to understand that ‘Oh, my doctor actually does know what is going on with me.’ Because sometimes when a patient gets the response that there's nothing wrong but they are still

very much experiencing pain, it sends the message ‘Oh, my doctor doesn't know what's going on.’ And so this really helps me to chant ‘Oh, okay. I do have a better understanding of what's going on here’ and then being able to explain there are a number of different factors that can contribute to DGBIs, and then that then helps to lay a framework for why perhaps working with someone like me might be useful to them. How this could actually help with their symptoms, not just with anxiety about symptoms or distress related to the symptoms. And that really makes the patients much more likely to actually **[inaudible 00:23:18].**

00:23:24 Christina Jagielski: So I'm going to conclude the talk by talking about what are some of the specific things that AGI psychologists [?] or GI mental health providers can provide in order to help their patients. So the majority of the talk is going to focus on the first two. It’s CBT and the Gut-Directed Hypnosis. That is because those have the highest evidence base. Acceptance and Commitment Therapy is really getting a lot of increasing attention. I suspect that we will see a rate increase in publications on this in the future as it relates to the GI specifically. It already has a wealth of evidence in other areas as well. Since I'm not going to have slides on that I will just mention that that is a mindfulness-based treatment that is values-focused. So is looking at changing our relationship with our symptoms as opposed to changing the presence of the symptoms. So that’s where the acceptance comes in and then also keeping the focus on what is it that the patient values? What is it that the patient wants to be doing? So is it ‘I want to be able to go back to work.’ ‘I really want to be able to take that job but I don't know how my symptoms are going to affect me.’ ‘I would like to start dating.’ ‘I would like to have a better relationship with my family.’ So we keep that value at the forefront and then we work on what do we need to do to get there and so that's what acceptance and commitment is in short.

So I'm going to touch base on GI-CBT. So one of the first things that I will do with any patient that walks through my door is to go over what is known as the GI-CBT Model you see here. So it -- and this both helps to provide more nuance around what we mean when we say that stress can impact our symptoms and it also lays the rationale very nicely for how these different treatments help to improve the cycle. So typically starts in that top right-hand corner with the onset of GI symptoms that can then lead to unhelpful thought patterns such as ‘Oh no, symptoms are flaring up again. There's no way that I can go **[inaudible 00:25:49]**.’ That can then lead to the development of negative emotions such as anxiety, frustration, and disappointment that can then contribute to some medical arousal. And we mentioned very briefly earlier, the impact of the central nervous system and the autonomic nervous system. So we know that in sympathetic arousal can lead to impaired functioning of the GI tract and contribute to worsening GI symptoms. And so, a further explanation of that to patients really, really helps in that very first session that I have with them to understand that oh this is what we mean when we say that stress can directly impact GI symptoms. And then that can then lead to, those worsening symptoms can then lead to changes in behavior, including avoidance. So maybe I have to stay at home and then maybe I stay at home I catastrophize or ruminate on how much my symptoms are really interfering with my life. And then that leads to more anxiety and depression, which just makes the cycle **[inaudible 00:27:00].** So our goal is to introduce techniques to intervene in these different links in the chain to hopefully help to both improve symptoms and also to the quality **[inaudible 00:27:13].**

So some of the main GI-CBT Targets include modification of arousal, attention to obsessive and catastrophic thoughts related to GI symptoms, learned fear responses, increased vigilance and sensitivity to symptoms, avoidance behaviors, and inflexible coping. And I don't believe that I have a slide for the inflexible coping due to time, but that does have to do with helping the patients select those more effective coping strategies. So being able to figure out when to utilize problem for focus versus those coping strategies I was talking about earlier. So diaphragmatic kind of breathing I teach to almost every patient that I encounter, and I provide quite a bit of psychoeducation on diaphragmatic breathing. We talk about how it can impact the activation of that parasympathetic or rest and digest process and all benefits as you see here, as well as understanding the impact of breathing on the GI symptoms themselves. So the main takeaway there is that we're thinking that nice deep breath and inflating the abdomen like a balloon. That movement actually serves as a massage for the intestines. So that can be helpful for reducing bloating. That can help with reducing abdominal pain. It can also be used to calm sensations of urgency. And then when used on the toilet it can actually be used to help a patient have a more complete bowel movement when they're dealing with more constipation-predominant symptoms as well. So let's take a time -- we won't go into that any further but I will let you know that there is a diaphragmatic breathing demonstration that my colleague, Megan Riehl, developed and that's available on YouTube and includes both a discussion about why we use diaphragmatic breathing and a demonstration with a patient in that video. So please feel free to share that with any of your patients. I will say that I find that patients get much more benefit out of using this technique when they have learned the rationale, but don't recommend just recommending that they do deep breathing. I recommend providing them a couple minutes worth of explanation of why this can be so helpful. Because otherwise, people have a tendency to hear breathing and think ‘Oh well, I don't need to learn how to do breathing’ and they just tend to not use it as well. So just a couple minutes can really help.

00:30:00 Christina Jagielski: And just a couple more things on CBT here. So this is one of the most commonly used tools in CBT. It's not as a thought record or thought launching form. And this is used to help with recognizing a patient's certain negative thought patterns. So negative thought patterns tend to fall in certain categories. There's about 16 of them, three that are really common in GI patients. And so we start by just helping them to understand 'Oh, okay, these different thoughts fall into these different categories.' Catastrophizing is one of those. Negative predictions is another one, and so that they can start to recognize it in the moment that 'Oh, my mind starting to jump to that catastrophic thought again' or 'Oh, I've seen this stuff before. What's a more helpful way to deal with this.' So we start to really kind of get a little meta with our own thoughts which really helps us to respond better to them. And then on the right-hand side with the counter thoughts, we work with the patients to come up with constructive responses to each type of thoughts. What's really tailored to each type of thought. And the idea here is, sif it's a thought pattern, that is most likely going to happen again and so if I can learn how to effectively respond to that thought in a way that reduces my stress, that helps me to get a better perspective. That can also help to interrupt that cycle that leads from worry to increased sympathetic arousal to worsen GI symptoms. This can actually help to not only improve anxiety and improve depression but also to help improve the GI symptom.

We will also do behavioral experiments, and so one common one is for patients that maybe feel like they have to run to the bathroom every time they have the urge. We'll have them in the privacy of their own home and a place that's first, you know, less risky. Try waiting 10 to 15 minutes and use diaphragmatic breathing to see if that can help to calm the symptoms down and then that helps them to develop or acquire new knowledge that 'Oh, you know what? I don't have to always run to the bathroom. I have another option that works for me.' So by doing they actually learn how to manage their symptoms. And then -- So a quick overview of the efficacies. So this is the most heavily research behavioral treatment for DGBIs. There's over 20 randomized control trials. So there's a number of settings. It's been shown to be quite effective as a number needs to treat a four, so that's the best of all of our treatments so far. And it has been shown to be durable. So one of the reasons for that is that when we introduce CBT, so we're really introducing a skill. So this is not talk therapy. This is really learning how to be your own therapist. That's really what CBT is all about and so the patient really learns and practices the skill and down the road, they can not only use this for working with GI symptoms strapped[?] the rest of their life, but they also can use it to apply to any other number of negative thoughts or feelings in various situations as well.

00:33:27 Christina Jagielski: The next topic is Gut-Directed Hypnosis. So this is often the one that kind of gets the most intrigue from patients and providers alike. So this is a therapeutic technique that cultivates a state of enhanced receptivity to suggestion to support therapeutic change and utilize this GI-specific hypnotic suggestions. You'll see examples of that in just a moment. And the two most common protocols are between seven to 12 sessions and currently, we have scripted protocols for IBS, irritable bowel disease, heartburn, dysphasia, and globus sensation. And Sarah Kinsinger[?] just presented some new research on the development of a protocol for functional dyspepsia at DDW[?] this year. So in a brief nutshell, gut-directed hypnosis involves what's known as an induction technique, which is where we just have a patient kind of, in our case, we use something called eye fixation, which just means that we have a patient kind of look at a spot on the wall or the ceiling. This helps to cultivate a narrowed focus. And then we -- the patient will eventually close their eyes. You will then shift into physical relaxation through the use of a technique called passive muscle relaxation, which is where the patient learns to relax just by thinking of how relaxing. It's a deepening technique where we count from one to 20 and patient gets more and more relaxed with each number. Then we will shift into guided imagery. That is utilizing different types of pleasant scenarios to focus on. So for example, second session takes place at a beach. The second, or third session takes place up in a log cabin, and fourth one takes place walking through a beautiful garden. And the idea there is that we are giving the patient lots of different pleasant stimuli to focus on. Sights, sounds, textures, things like that, that really creates an immersive experience that really helps to deepen the relaxation, and then that tends to help the last part, which is the real medicinal part that gut-directed suggestions to **[inaudible 00:35:44]**.

So gut-directed suggestions are really tailored to different conditions. So what you're seeing on the screen here is some examples from the IBS protocol and I won't read over this I know that we're running out of time. But you see that there's, you know, a couple of different samples, for example, reduced attention to bowel symptoms. So you pay less and less attention to unpleasant feelings inside you every day, as your sensitivity to bowel pain and discomfort steadily fades away and disappears. So this is -- each session is different and gets at a different aspect of the GI experience. So there have been over 15 randomized control trials and over 30 studies since the 1980s that have also shown hypnosis to be effective. It has a number NNT[?] five so very close to the GI-CBT and patients -- But their studies have found that even after the end, in our case what we use as a seven-session protocol that even, you know, three, six months down the road patients are getting more and more benefit from the hypnosis. We also provide patients with recordings and so I will do that in my own voice that they're getting the same voice throughout the whole course of treatment and patients have this forever. And so that can -- that also adds to the efficacy of the treatment. So just a quick look at what's happening with hypnosis. So in many ways, we still are not 100% certain what is happening there, but these are some of the things that have been found in different studies.

So improving psychological factors such as decreased somatization, decreased general stress. I'll also add I see a number of patients report improved sleep through using this technique. Changes in cognition or beliefs of symptoms, normalizing central processing of visceral signals, and there's also been evidence in changes in autonomic nervous system activity, improved motility, and reduced visceral pain.

00:38:11 Christina Jagielski: Last couple of slides here. These are just some additional resources if you're interested in learning more. So that first book in blue is a really helpful handbook. It's designed for mental health professionals, but it could be very helpful for medical professionals and allied health professionals as well. I believe we have some of them on the call as well. Really goes into more detail about everything that I just discussed. The Mind-Gut Connection was written by Emeran Mayer. This is a very well-loved book on behavior [?] of patients as well. Gut is a new book that just came out. Probably one of the newer ones that came out. I definitely want to highlight the Nerva app which is a great resource, especially for anyone that doesn't have access to being able to make their way to GI psychologist and it's been shown to be very effective. I'll highlight again The Best Practice Updates from Laurie Keefer. That includes the language on how to discuss this topic with your patients. It also includes information on questions to ask your patients to get an idea about psychosocial factors, measures that you can use, how to connect with a GI psychologist, we'll talk about that in just a minute. So they're really useful **[inaudible 00:39:37]**. And then IBShypnosis.com as well. And I will also mention, I know I think on some of the earlier slides that there would be slides that I developed I realize that there weren't references on there. You can find all of those in the manuscript that I highlighted on the Psychosocial Factors slide. That is one of my manuscripts. So all of those references are **[inaudible 00:40:02]**.

And then lastly, many people will often ask, how do you go about finding a GI psychologist in order to utilize these different techniques? So the first place I would look is the Rome Psycho Gastro directory, and you can find that at the website above. And you can search by location, search by area of focus. I believe that currently there is over 300 providers internationally. The majority of them are in the States but then we -- it is growing in terms of the international group as well. You can also look into joining that group if you specialize in GI conditions as well. And then if you do not have access to a GI psychologist in your area another option is to utilize Psychology Today, which is something that we as providers often use. And if you're specifically looking for someone that does something similar to what we do -- And the two main things I would look for are providers who specialize in chronic illness, that is a search option on the website, as well as someone who specializes in kind of behavioral therapy. You can reach out to them, see if they might be interested in **[inaudible 00:41:27]**. So it's my last slide. So I want to thank everyone for attending this evening. This is my contact information. Questions. They also included a link to our website as well.

00:41:45 Claire Davidson: Thank you so much. That was awesome. We do have some questions and so to be mindful of time, I will just jump right in. We did have a question about early life trauma and knowing that there's different types of early life trauma. Do you have an understanding of the different types of abuse and how they have different impacts in terms of DGBIs?

00:42:11 Christina Jagielski: So there's been a number of different studies on that topic and so -- and they kind of differ but so I know that Dr. Bradford did a study a few years ago that showed that all of the kind of primary forms of trauma. So she looked at both physical, emotional, and sexual trauma as well as general traumas, which can include things like car accidents and other things like that, and all of those, I believe, were associated with higher risk of developing IBS. That study actually found that emotional trauma which is often one that I think those -- it's a less attention and a lot of times patients don't even realize unless they're directly asked about it if they've experienced that before. But that actually was shown to be one of the higher risk factors for the development of IBS, but there's also been significant work looking at physical and sexual abuse as well.

00:43:17 Claire Davidson: How do you help patients overcome problem-focused coping strategies in dealing with DGBIs without taking away from the times and work in life where those strategies might have become helpful?

00:42:11 Christina Jagielski: Absolutely, absolutely. So we actually have -- I wish that I would have included that. I have an algorithm that I will provide for them and it's very simple. It ask the question, is this situation -- is there anything I can do about this situation right now? So that helps us know is this controllable or uncontrollable? If the answer is yes, then we look

at the problem-focused coping strategies and think about okay, well, what would be a useful, helpful **[inaudible 00:43:57]**? Is it helpful? Is it actually getting us where we want to be? If the answer is no. So for example, is this a situation where I'm waiting on a test result or I'm waiting for my doctor good to get back to me about that interpretation of what that means or what the next steps are going to be? Then we want to get into how to weather the storm. That is what emotional coping strategies are about. And so we'll talk about what that might look like and then we talk about -- Okay, so then, once you have gotten some feedback from your doctor, then we can jump back into problem-focused coping strategy. So it's a, you know, it's really designed to be used back and forth. It's not like it's just say an emotion focus coping strategies for a long period of time. We want to get you back into using this act of coping strategies when it's actually helpful and not leading you just down this need to like do something that so many people struggle. I think everybody probably can relate to that at some point and some aspect of life.

00:44:57 Claire Davidson: Definitely. How do you decide which psychotherapy is best for which patient and do you ever combine or use one specifically and don't combine?

00:45:09 Christina Jagielski: Great question. So for many patients, I might use all of the above, everything that we talked about. For the reasons why I might not use hypnosis. So number one would be if the patient is resistant to it, nervous about it. I have on occasion, not too often, but I have had patients with religious resistance to it or have been told that you shouldn't use it before, and certainly, I will try to provide any education I can about it. I'll try to address any myths about the stigma. You know, but I am not going to press that. Hypnosis is not going to be effective if you feel pressured into it. If you don't consent to do that. I would just have no interest in doing that if that's not something they are comfortable with. There are a couple of contraindications for hypnosis that I look for. And the first one would be patients with untreated trauma, particularly untreated PTSD with dissociation. So dissociation is something that can be a helpful coping strategy that has -- anybody can experience that in some contexts to help us get through a difficult situation but for patients with a history of trauma that can be provoked in the course of hypnosis because hypnosis is designed to activate a healthy state of dissociation, which is where the pain control comes in. But we can't, I can't control whether or not I activate healthy forms of dissociation or traumatic memories and things like that. And then the other would be untreated bipolar disorder, particularly with mania. So that's a risk factor there. Other than that, it really has to do with patient interest and openness to relaxation, because sometimes people are very resistant to the idea of relaxation, so really needs to be kind of -- sometimes just put on hold for a while and they might come back to that later. With CBT. So insight plays a big role there, the ability to kind of do that metacognitive work of observing their thoughts is important. So certainly, cognitive impairment would be a place where a patient may not benefit with CBT. Patients who have no insight, there's not, they're not going to be able to do the activities. They're not, it's not going to be helpful. It'll be frustrating to them. I have found that there are some patients who really like to intellectualize and they really like to also like challenge me on challenging the source[?]. And so if I pick up on that, if someone really wants to be -- to prove that their negative thought is true, then I just kind of wrap the resistance, and I'm not going to challenge them on that and then we might shift into an act-based strategy. And that's often very revealing to them. When you drop that resistance and you don't try to challenge them. That often actually tends to get their attention quite a bit. I hope I answered that.

00:48:25 Claire Davidson: Yes. No, you did. That was great. So the next question, you sort of touched on this a little bit, but I still think it's relevant. How do you talk about hypnotherapy with those patients who might be a little bit hesitant, and not patients who you'd have to pressure and obviously, but patients who are just on the fence? Or unaware of what it is?

00:48:45 Christina Jagielski: So, my kind of general spiel that I intend to give. It will first acknowledge that, you know, this is very different than anything you may have seen on TV or on stage hypnosis. There's no mind control. There's no getting you to cluck like a chicken or bark like a dog. You were literally just laying there and listening, relaxing. And there's no we're having you recall past memories. So this is a present focus and GI focus form of deep relaxation. So that's kind of the way that I typically explain that to them. And then we also just send to discuss any concerns that they have, or if they -- Sometimes people think, you know, I get questions about, you know, I have ADHD. I don't know that I can focus and I will often say, well, actually, I found that AD -- patients with ADHD tend to do much better with -- This is just my experience with a guided form of deep relaxation as opposed to maybe trying to do mindfulness on their own because you're getting something your specific details to focus on. If sometimes people are worried about letting go of control, and hypnosis can be stressful in that way. Because it's encouraging them with that, but if they're interested, then, you know, we'll just talk about, you know, well, let's come up with an action plan for if this becomes uncomfortable to you. If this is so uncomfortable and

miserable to you it's not going to be effective, there's no reason to use, you don't need to force yourself to do it. And we'll just come up with, you know, cues or what do you, what's your -- how are you going to let me know if you're uncomfortable and you want to stop, and then we'll talk through it. And I had a couple situations like that where we were able to work through it and the patient wanted to and by the end, they actually were able to relax. So those are some strategies that I use.

00:50:43 Claire Davidson: Yes. And so we had a question about how the interventions you talked about can be modified for the use in young people or if they need to be modified at all? Can you speak a little bit about that?

00:50:56 Christina Jagielski: So these strategies certainly are used in pediatric populations and there are a pediatric hypnosis protocols as well. **[inaudible 00:51:09]** abdominal pain and so there are specific scripts for that. And then CBT is used. It kind of depends on age range, and so for adolescents, it can look pretty similar. Insight varies, the younger a person gets and so they might get more into things like play therapy or using other techniques that are just more common in certain age groups. But this definitely is being applied by pediatric psychologists as well.

00:51:49 Claire Davidson: Yes. So I'm talking against time so we'll do one more question. And this is more about Gut-directed hypnotherapy and how you as a provider are trained and certified to be providing it. Can you speak a little bit about that process?

00:52:06 Christina Jagielski: Absolutely. So I was personally trained through the American Society for Clinical Hypnosis or ASCH. I am going blank. There is another association that you can also get your basic level of hypnosis training. I think mine was a two to three-day course that was really helpful where you get to practice the techniques, you get them practiced. You both practice doing them and you also get to experience it on your end which I think is really important to understand what that feels like. And then we use the North Carolina Protocol at Michigan, and so after you get your certification, I reached out to Dr. Paulson, who has those protocols and I was able to get access to all of that. So we start with basics. You really understand what it's about. You understand the science, they go into those details, ASCH provides all of that, and then you get into the GI-specific part after that.

00:53:11 Claire Davidson: Awesome. That sort of is all the questions. There was one question about a source, which I'm happy to send afterwards. But apart from that, thank you so much for your time, and thank you everyone for joining and listening. Yes. Awesome. Thank you so much.

00:53:41 Christina Jagielski: Thank you everyone for being here. Wish I could see your faces. But thank you for making time on an evening to be here.