ACEs and the Body: How Adverse Childhood Experiences Impact Occupational Therapy

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Presenter: Alison D. Peak, LCSW, IMH-E

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- [Fawn] Today's course is ACEs and the Body: How Adverse Childhood Experiences Impact Occupational Therapy. Our presenter today is Alison Peak. She received her Master's in Social Work from the University of Michigan with an emphasis in interpersonal practice with children and youth and infant mental health. She is the executive director of Allied Behavioral Health Solutions located in Nashville. ABHS works to improve access to behavioral health services towards a goal of better outcomes for all. She's the co-chair of the Association of Infant Mental Health in Tennessee, Endorsement Committee and Leadership Cohort. In these positions, Allison assists in leading efforts to bring professionalism oh, I'm sorry, professionalization to Tennessee's workforce that serves young children and families. She also has two postgraduate degrees, Integrated Behavioral Health and Primary Care and Pediatric Integrated Health Services. Allison is passionate about working with children with histories of early trauma, families with adopted children and youth in DCS custody. Allison also believes that these populations are often best served where they are most often present for assistance, their physician's office and then in collaborating with primary care providers, its possibilities to optimize services for children and families. Welcome to Alison, so glad to have you.

- Good afternoon, everybody. I'm very excited to be with you all. I'm very grateful to Continued for having me. I always enjoy getting these opportunities and getting to talk just generally about ACEs and infant mental health, but also, I'm really grateful to this platform and really enjoy these audiences. So I'm also duly excited 'cause we're live today, and so that means good questions and I'm hopeful for good engagement. So know that that makes me feel a little bit less alone in this conversation. So Fawn was so lovely in introducing me, but a few things just to know. Again, my disclosure's there if you have any questions about them. Again, Fawn read my bio. The only other disclosure that really should be known is that I'm aware I have an accent. I know it's thick. After all of my years and many efforts, it's just not gonna go anywhere. And we also just know that on recordings and microphones, things are a little more intense. So

if you have any questions, or there's something that I say that we don't quite understand, don't hesitate to ask, I'm accustomed to it.

So in our time together today, our hope is that as you all leave, you will have learned about the development of Adverse Childhood Experiences, which we term as ACEs as a research topic and as a method of assessing early experiences of children, that you will be able to identify how ACEs manifest in occupations and can be assisted through occupational therapy, and also that you'll learn the connection between chronic trauma in early childhood and typical issues for referral that are usually seen within occupational therapy practices and kind of daily OT services. So what are ACEs? What does that mean in thinking through that acronym? So for some of you, this may be new information, others may have really learned and heard this term numerous times. But ACEs refer to what are called Adverse Childhood Experiences, and so that is a list of 10 items that through multiple research studies have been found to be directly link to trajectory of childhood development, brain architecture and neurological development in children, academic success across the lifespan. Primarily, the research has been around long-term health outcomes, which we'll talk a lot about and is where one of the places that we see OT really integrate and interface with people who have experienced ACEs. Job satisfaction is a huge correlation to these Adverse Childhood Experiences as does divorce rates and life expectancy. So they are these 10 factors, but really have a large impact on many domains within our general well-being and functioning.

So how did we come to find these 10 things, and what do they mean? So in the mid to late 1990s, Kaiser Permanente, which is a private insurance provider in California, realized that they had a number of individuals on their member role, who were consuming a vast amount of the money within the insurance pot, but were really a tiny percentage. And so generally in insurance terms, these individuals are known as super users. So there are a few of them, but they use generally the majority of the actual resources. And so Kaiser Permanente in an effort to try to get their arms around what

this was sent out a massive survey to all of its members and said, "Tell us about yourself." So, at that point, they sent hundreds of questions about everything, how old were you the first time you drank alcohol or smoke cigarettes? How many moves across the country did you have? Were your parents divorced, single, remarried? How many times? Just really thorough questions. And in that, they were able to identify 10 factors that they found that if they occurred prior to an individual's 18th birthday, that there were long-term impacts on that person's health and well-being as an adult. So those 10 key factors really break down to this graphic.

And before we move forward in dissecting this graphic, I want to pause for a minute and acknowledge that generally when I have this conversation, or I engage in talking about ACEs, the first thing that happens is that we all immediately think about ourselves and we begin to think through how we were as children, what our own families of origin were, and what this means as it applies to us. Now, that's a very natural process because inevitably as human beings, we all see the world through our own eyes. And so recognize that that's likely as we talk about many things today. The other thing that makes it so likely to think about these things for us as an individual, is that many of the things that we all encounter in a professional world day-to-day, so in my world, psychosis, schizophrenia, manic episodes, alcoholism. Those are things not everybody on this training have ever experienced. We haven't all experienced what it is to break a bone or have some type of surgery, but we have all been three, and we all know what it is to be a young child who tries very hard to get a point across, and even in the best of circumstances, sometimes struggles. And that even with the most attentive of caregivers, sometimes we're not heard. And so that universality of experience of all of us being children at one point makes this topic that much more evocative, and brings it back to who we are as people a lot more intently. So we'll be mindful today about our own experiences, and our own sense of being in this time. And I'm also gonna invite that whatever comes up for you, we lay aside and think about this as it applies to those we work with on a daily basis.

So the 10 factors that Kaiser Permanente identified, really we're broken down into kind of two categories. The first five have to do with abuse and neglect. So that's physical, emotional or sexual abuse, and then physical or emotional neglect. And then the other five really kind of stemmed around what we termed was household dysfunction. So the questions are, before the age of 18, did you reside in a house in which someone else was diagnosed with a mental health concern? Prior to the age of 18, did you reside in a house with a caregiver who was incarcerated? Again prior to 18, did you reside in a house where a caregiver battled with substance abuse? Were your parents divorced prior to your 18th birthday? And the original study question is, prior to your 18th birthday, did you see your mother treated violently? There are some caveats within the ACEs research that we're gonna talk quite a bit about, one of them being that the research was originally done in the '90s. So what we know about intimate partner violence now and how we recognize it and its general play within families systems is much different than we did in 1994. And so again, the original question really was, was your mother treated violently? The question in any current research projects is, were either of your caregivers ever treated violently by another romantic partner? So the question is a bit more all encompassing of what a child may have seen or experienced, and isn't quite so narrowing in its definition.

So how common are ACEs? One of the things that we see through the research is that about 36% of the population, generally about a third have no ACEs, they didn't experience any of those 10 things prior to their 18th birthday, which means that the other two thirds of their population had some variation of those events. About 12 and a half percent, well, let me back up, about 26% of individuals have one ACE, and then we see that kind of increase beyond that. So about 10% have three ACEs, and then we see about 12 and a half percent of the population that was originally tested have four or more ACEs. I'll talk numerous times throughout our time together, but four is really considered to be a cut off point within the ACEs research that things really begin to

shift when we think about long-term health outcomes, impact on socio-economic status, and some of those general social determinants of health at the point that a child has four or more ACEs. Now there's definitely accumulating factor across ACEs.

Now, people who have two ACEs, the research demonstrates greater impact than those who have one. Likewise, three ACEs have a greater impact than two, but we see a substantial shift in those long-term health outcomes once an individual has four or more ACEs. Again, we talked about this place of the research was originally done in the 1990s. There are some caveats to that, given that it was done by a private health insurance company in the middle of Silicon Valley in the '90s. The original study data was normed on a primarily middle class, primarily graduate level educated white population. There was also a lot of, again, the data came out in the '90s, but it really kind of laid dormant until about 2010. There was a TED Talk at that time by Nadine Burke Harris, who's the surgeon general for the State of California, who came out and talked about what this meant and what ACEs looks like in providing medical care and as a physician. And so we saw a lot of shift nationally around understanding ACEs in that general time frame. So there was about a 20 year gap where ACEs existed, but really didn't get talked about. Again, we know that there were some real limitations on the original study like population, and so since the original study, the only other two factors that have been normed to again, impact long-term health outcomes are extreme poverty, and incidents of racism. Generally speaking for you all to kind of hold in your mind, extreme poverty is defined as anybody who's on some level of state Medicaid. So if you're seeing children who receive state Medicaid or their family is on state Medicaid, then that would meet those qualifications for the research definition of extreme poverty. So in that place, being able to think through the lived experience of your clients, and what that means for them as they walk through your doors.

The other piece about the research that again, I'll repeat numerous times today is that we always hold that all ACEs are trauma, but all trauma is not an ACE. And that doesn't

mean that individuals traumas are somehow more or less important. It is to say that ACEs are a research study, and that they have sufficient prevalence in the greater population that we can norm them and get statistical response from them. So within that, again, as mentioned, I'm from Tennessee, and so Nashville at the beginning of March experienced two considerably devastating tornadoes. Those are traumas. Our community is traumatized. We have families who were deeply traumatized. We will all hold some trauma, and it is not an ACE. There is not sufficient evidence that people who experience singular natural disasters will have long-term health outcomes as a result. Again, there are differences between populations. That's not to say somebody may not experience that, but it is to say, as an overall population, it doesn't show up to statistical significance. So again, we'll talk through that multiple times 'cause it does come up frequently. But these are really things to think about as we start to dive a little bit deeper into the research of statistics in that original study by Kaiser Permanente.

So ACEs research has been duplicated numerous times at this point. The graph on the top really does demonstrate all of the states that have duplicated that information. Tennessee is a state that has duplicated ACEs, I think five times at this point. Most of the states in the US at this point have completed their own ACE study. So they took the original set of data, and then they looked at people across their insurance panels to be able to compare what the outcomes of that are. And what we know is that even though the original study was normed on this kind of upper middle class, well educated employed population, that even when looking at cross sectors of the population, those values kind of come true that that place of about 12, 13% of the population come up with about four or more ACEs, and we see that about two thirds of the population at whole have experienced some level of an ACE. So again, you can check within your own state, but there are lots of states who have done like numerous incidents, which is where those two additional ACEs that we talked about around poverty and incidents of racism were also normed 'cause once we opened up that

criteria, really we're able to get a wider range of individuals involved in research studies, we saw some additional things come out.

So ACEs are in part so impactful because they are considered chronic trauma, not single incident trauma. So chronic trauma, meaning that if we conceptualize this place of what it would be to be a child in a home with a family where there was substance abuse, those are events that occur over time, numerous times, often unpredictably. And when we think about, again, my example of a tornado, like that happened once. Has only happened once in Nashville in like 30 some years. And it was done. It didn't last for days or weeks. There wasn't this extended period of years of living with a battle of mental health, or a parent who was incarcerated for years on end. That these are chronic stress and trauma, because there's no clear beginning or end. There's a lot of conversation with the community about what the coronavirus and COVID will mean for our young children, and we don't know that. It is definitely different than a car crash. It's not over and done. It's here, and it's been here for a minute, it's probably gonna be here for a little while longer. And so we know that that chronic nature of any type of stress and anxiety generally has a result, and so we will all wait to see what that means.

Chronic stress is so damaging because it's characterized by bathing the brain and cortisol. So cortisol is the hormone that the brain produces in states of stress, and really is the place to be able to activate for fight, flight or freeze. And so it is there as a survival mechanism. We're supposed to have that hormone. It's supposed to tell us that we have to respond and it's not great to stay there for months and years on end. What we know is that we really need that hormone to be able to activate in the moment, but then we also need to be able to settle back to baseline. And so when we have children who have been in places of multiple ACEs and exposed to real incidents of chronic stress and trauma, that level of hypervigilance and survival need is really elevated. And so in that place of like bathing the brain in this cortisol production, your

brain will essentially shut down pieces of itself in order to ensure survival. So I teach this trick to all my kids, and my students when I adjunct and people I train in things like this.

So this is your brain. This is your brainstem, sits at the base of your head and connects to your spine. This is your frontal cortex, which is the part that lets us be human and we have impulse control and ability to connect cause and effect and if you put your thumb underneath that X is a really good amygdala to show off there. And then you've got your limbic system which sits in the mid part of your brain. And so when cortisol bathes your brain, starts at the front, and most of the back because your most vital regions are located in your brainstem, your ability to control your heart rate, blood pressure and your body temperature. And so even though it's a really good idea that we can connect cause and effect, or be able to remember and give words to our experiences, they're not vital for our survival, and so our brain really will shut them down and move all of its efforts down and back. It's a long-term when that occurs, and we don't have the practice of being in the front parts of our brain, then we're not really good at impulse control, or connecting cause and effect. Most of us as adults, who by virtue of being on this training, have some level of secondary education don't make great choices when we're under stress. So when we think about the needs of young children, or families from places where there have been chronic stress and trauma, the likelihood that they're going to think through choices, and have great impulse control is minimal. Same thing when we're thinking about like memory and access to words. Again, like that goes, the more that we are stressed and heartened.

We know the positive development and neurological formation and early childhood really use relationships as their foundation. That in this place of bathing the brain and cortisol, the counterpoint to that is positive, consistent relationships with adults. And that may or may not be a parent. Sometimes it is, sometimes it's what we refer to as a psychological parent, somebody who's there and emotionally available, but might not

actually be the person in charge of caring day-to-day for that child. And so in that place when relationships can be dependable and predictable and consistent, then it allows for that hormone production to decrease just enough to move forward in growth and development. We talked about that place where chronic stress really does damage long-term, and we can see that through PET scans and MRIs, the brain's ability to access impulse control, and analytical thinking and cause and effect. And really does kind of underscore this idea that we talk about that feelings fuel behavior when it comes to young children. That this place of acting out of emotion and perceived threat to our survival really does stimulate the way that we respond and engage in our general interactions as young children. And those safe, predictable relationships then anchor us back and they allow us to begin to identify and decipher between what is safe and what is dangerous. And this is one of the places where we really see long-term impact with chronic stress and trauma is that when we don't have the ability for that predictable relationship to anchor to, children don't learn the difference between what is safe, and what is dangerous.

So in this place, we often think about the executive functioning section of the brain, those places that control impulse and analytical thinking, and cause and effect really is an air traffic control system, and that those executive functions are supposed to land all of the many things that we're juggling all day. So they're really directing information around emotions, and responses in order to land multiple things that young children are navigating safely. But what we know is that for children with numerous ACEs and chronic stress and trauma, because of that increased level of cortisol, their general emotional systems are so overwhelmed that it becomes really difficult to navigate additional things. So we'll often see children in places where the response is quite large to whatever the stimuli is. So as a result, you may have a child in a childcare classroom who wasn't what we expected it to be, and we have a really big meltdown because this child is also navigating, like nap is coming and I don't enjoy nap, and I punched my friend on the playground and got fussed at. And one of my teeth is hurting

and mom's expecting a new baby, and we haven't seen dad in six weeks. And so all of those planes that we are trying to figure out, then kind of all fall apart 'cause we've just had the last straw and so our systems in this place of increased exposure to chronic trauma really do get overwhelmed so much easier, and then as a result, we really do see that play out in behavioral episodes and also kind of an emotional difficulties.

We also know and frequently talk about that ACEs are intergenerational, and they generally repeat themselves pretty closely. So we'll see that families where there have been histories of incarceration, that that will go through generations, and parents who have experienced abuse and neglect are at an increased likelihood statistically of having children who will also be abused and neglected. A lot of that comes from this place of we often parent as we were parented or we parent in direct contrast to how we were parented. When we think about the idea, maybe even an exaggerated idea in our head of what unhealthy parenting looks like, and we take the opposite of that, the opposite of unhealthy is not healthy. It's just a different kind of unhealthy. And so healthy lies really in the middle of structure and freedom. And so when we go from extremes to another extreme, we generally find ourselves repeating the same events inadvertently, because it's not healthy, it's just different.

So we also know that in places of experiencing chronic stress and trauma, that they're like changes to our hardwired DNA and they're real impacts to sections of our DNA that are in places where we discussed earlier. There is a considerable amount of data that for individuals who have six or more ACEs, that their life expectancy is on average 20 years younger than that of other people their age who have fewer Adverse Childhood Experiences. And so that chronic stress and exposure to cortisol and many other like damaging effects of malnutrition and poor relational health, and again, then impacted stress of academic stress difficulties in social situations, poor support systems really do result in internal changes in our DNA, which we then pass on to another generation that then often inherently repeat that.

I have a small fascination with a whole lot of like super geeky research around mice, so if you have questions about that, I would love to talk through it with you, but I will save some of you from all the details. But one of those stories is we know that kind of in this epigenetic change, that there was a research study where they took a group of mice and they put the mice in a cage, and they elicited this really great mice friendly smell. And when the mice would go near the smell, they would shock them with an electric shock. Not crazy electrical shock, just enough. And they did it sufficiently that the mice were then afraid whenever the smell occurred. So they took semen from the first generation of mice, made a second generation of mice, they put the second generation of mice in a cage, and they elicited that smell. And all the mice became afraid, though they were never shocked, had never seen the other mice shocked, never been in a circumstance where they were exposed to it, but their bodies inherently knew that this was a thing to be afraid of. So they took semen from the second generation of mice, made a third generation of mice and at the same outcome. It was not until the fourth generation of mice without an actual event that they started to see shift away from fear of the stimuli. And so when we have been in family systems, in communities where there has been ongoing violence where we have not been heard where we have been afraid for years on end, like that lives within our DNA, and then gets transmitted through the next generations.

And so, intervention around Adverse Childhood Experiences always take some multi generational approach, and can take several generations to get to a point where the impact of those original events really can be mitigated. In the late 1970s, there was a researcher at the University of Michigan by the name of Selma Fraiberg who was doing work at that point around childhood development with Jean Piaget, specifically on children born with visual impairments, and opportunities to work with them so that they could be developmentally on track, despite being born with visual impairment. And so, Selma and her team were doing a controlled trial study at the University of Michigan

with a family that was sent over from the hospital. Mom was 19, which was young, but now shockingly so in the 1970s. And this was her first baby. And so they're in the two-way observation room, and Selma and her team are watching, and mom's in the room with the baby, and the baby starts to cry, and mom doesn't move. She doesn't get up, she doesn't speak, she doesn't offer to go to the baby. Again, this is the 1970s there is no Candy Crush, there's no Seventeen Magazines, mom doesn't have a thing to do with her hands and just sits in an observation room with a baby who cries and cries for 20 minutes, and mom never moves. And so Selma and her team really wondered about what it was in this mother's own experience that made it so difficult to hear the cries of her own baby. And so in that work, Selma and her team really coined this as ghosts in the nursery. The idea that there are often subconscious, unseen, untalked about factors in our early development that deeply impact the way that we parent and engage emotionally with young children.

Now, this is my favorite slide always in talking about ACEs. 'Cause most of the time, I have generally stressed everyone out by this point. We're all feeling really overwhelmed that things that happen to such small children have such a big impact for their lives when they have so little control in the beginning. And so what we know also, is that ACEs are fact and not fate. They're research study. It's a really thorough, highly valid research study, and that does not mean this is 100% the case for every single person. It means statistically we know this is what is likely. And in being fact and not fate, we also know that this is how they progress when there has been minimal to no intervention in the time in which the chronic stress and trauma occurs. But we know that collaborative research shows that when we are engaged in a two generation model, when we're able to work with a parent and caregiver and a child, when we're able to provide education around ACEs, that there is room for repair, and that the single largest mitigating factor and driver for what we often call resiliency is that there is a safe, predictable relationship with an adult. Maybe a parent, maybe a

psychological parent, but that there is someone who is emotionally available and attuned to the needs of that child.

So in 2005, a researcher from University of California, San Francisco named Alicia Lieberman was engaged in talks with a funder, and was discussing all of the things that they knew at that point about ghosts in the nursery and intergenerational trauma and the impact of early childhood trauma on DNA and telomeres. And in this conversation, the funder looked at Alicia and said, "But if there are ghosts, there must also surely be angels." And so we know that also in this place of relationship, that sometimes the stability and predictability of our very presence can be the single largest mitigating factor in the lives of many of the children that we work with. And likewise, we know that for those who serve adults and geriatric population, that this also holds true, that a singular relationship in which there is an alternative experience. Somebody hears me, somebody respects me, somebody listens to my words and gives them value, someone is excited to see me can make substantial shift in the physical outcomes of a patient, and also in their long-term emotional well-being.

So how do ACEs shift with occupational therapy? So when I was asked to do this conversation, I was really excited because social work and occupational therapy hold a lot of really similar grounding and framework in our conceptualization of how we approach a problem. Social work really holds to the idea of a person and environment perspective, and OT really expands upon that and the idea of person and environment in occupation perspective. And so one of the places that we know long-term that ACEs show up generally is in difficulty in navigating somebody's environment that these people we talked about earlier who become eventual super users have real difficulty in navigating relationships, which is why they have a higher divorce rate in navigating academic settings, which is why they are less likely to graduate from a four year institution, and less likely to experience school as a place where they're enjoyed, even prior to high school graduation. That their difficulty to engage socially then results in

difficulties with bullying and poor peer choice and all of the associated negative consequences that come with that. And so we really do see that these social determinants of health really start in the beginning as poor match in our occupational settings.

We also know that children who experienced physical abuse and neglect are much more likely to experience reduced sensory sensitivity than their same age peers. As somebody who really focuses on providing services to children who've experienced early trauma, we talk a lot about this, especially with our adoptive and foster families, that children who are in child welfare often present with sensory issues, that we're gonna see lots of jumping on things and bouncing on things and walking on our toes and all kinds of like, have lots of kids rub stuff on their face, and lots of sensory seeking behaviors. And a lot of that has to do with the lack of touch in early days, but it also has to do that, again, like when our brain is bathed in that level of cortisol, it delays development. Our brain is so busy thinking through, "Am I going to live today," that it doesn't quite pay attention to whether or not velvet is a safe texture or trying to decipher whether or not our body and proprioceptive system is getting enough input to stay grounded. We're just trying so hard to regulate our general world that we often have to seek additional input in order to know where we are in time and space.

We do really see that children who have experienced, especially again, at four or more category of ACEs, that development is delayed. Much as we talked about that research shows that for individuals who have six or more ACEs, that their life expectancy on average is 20 years younger. What we also see in research is that for people who have experienced 10 ACEs a hundred percent of the time and research, they are profoundly developmentally delayed. A hundred percent of the time. Is a really heavy statistic. But when our brain in our body has worked so hard to try to just live through today and to navigate all of those planes that we have talked about, and to try to just find a way through, our brain does not have the capacity to focus on gross motor skills, fine motor

skills, general social skills, speech development, any kind of like math or literacy concepts. They all quickly go by the wayside because our sole goal when our brain is functioning deep in its brainstem, it's just to live, not to learn, not to be engaged in yeah, stimulating conversation, just that we made it through. And so we will often see that then those children are showing up in numerous settings, that they've got OT, PT speech, ABA, and that there is a background under this developmental delay of pretty profound trauma in recognition of that because we know there is such a level of comorbidity between developmental delays and early trauma, IDEA which is the Individuals with Disabilities Educational Act, the original one, which was passed in '94, but has numerous reiteration since then. But part C, which is the carve out for early intervention services across the US, requires that all children under the age of three who are removed from a family by a child welfare agency must, not an option, not a suggestion, are federally required to get an early intervention assessment because we know that in situations where, like, again, abuse and neglect, neglect especially are profound in the first three years, that there is a high likelihood for developmental delays and long-term academic difficulties.

So what does that look like for intervention? Children with high ACE scores often experience difficulty with so regulation. And we've talked about that place of kind of sensory integration concerns. The other thing that we know about early exposure to trauma and childhood is that it will create this sense of what we refer to Is like danger seeking behaviors. Or, yeah, I'm trying to think of other words that we call that by, very much like pervasive high intensity effect. So I have tons of kids who will climb the top of chain-link fences and jump off of them at three years old, or will stand on window seals. That happens often, or climbing on top of like playhouses in a foster parents yard and running along the roof, 'cause there is a stimulation of adrenaline that occurs in that, that very much mirrors that exposure of cortisol and very much normalizes that internal sense of anxiety that those children feel. And so in that place of like, I already from kind of sensory mismatched, I already have difficulty identifying what's safe and

dangerous. My relational cues have not really told me what's safe and dangerous, and there's this part that engaging in like these pervasively dangerous seeking behaviors kind of makes my body feel like my effect matches the situation. And so we will also see that kids with, again, high ACE scores and real experiences of early childhood trauma can have more medical issues, like they break more bones, they tend to be more like clumsy and kind of accident prone, again, in part because they're pushing boundaries in ways that lots of other kids aren't. We also see real difficulties in fine motor development. That is one of those like higher analytical thinking pieces, that again, if your body's really worried about just being able to fight, flight or flee, the finer nuances of coordination get really tricky.

Children from early histories of trauma and who've experienced numerous ACEs also have a real difficulty identifying their role within social situations, and in creating imaginative play. When we think about social situations in early childhood, a lot of it is really being able to take cues from adults around us, and to recognize that adults have our best interest at heart, and that those adults will show up for us if something happens. So I can cue that this person is in charge, and I trust them to take the lead, because I know they've got it under control. And when my world experience has been that adults are not predictable, and they are not safe, and they do not have my best interests at heart, then I'm not gonna take cues from adults, and I will often challenge them. And lots of children with early trauma really see the world as flat rather than hierarchal, and so we will often see that them insert themselves in places of parenting other children, challenging teachers, really not understanding that getting sent to a principal's office is somehow like a negative consequence, that they really do see themselves as having as much control and dominion over the greater world as all of the adults around them. Again, when you think about that, the idea that a three year old feels that they can be as in charge as a 35-year-old, like there is great responsibility in that. Imaginative plays, also this place where we know that the brain heals, that it allows itself to relax enough to say, "I'm safe, and I can not be hypervigilant in this

moment, "I can drop my guard and engage in play and what ifs and mastery and thinking through things. "I mean, really trying on in problem solving." And so when we've spent so much of our time in the kind of down and back portions of our brain, we really don't do as well being able to settle and engage in those kind of creative play. And we know that those creative play skills are really foundational for being able to put together comprehension on early literacy skills or being able to think through cause and effect. If I do this, then what will happen? And in play, we kind of try it on, we see what's gonna happen and we can still take it back. So when we don't allow ourselves to do that as children, and we don't have an experience of that, we don't try it on till it's real life, and then you can't take it back.

So occupational therapy also really holds this lens of a recovery model, which blends really well with what we know about ACEs and Adverse Childhood Experiences. ACEs really are similar in that it will always be a long-term process in order to get to a place of prevention and mitigation. And so engaging in that long-term process really can result in successful participation and activities of daily living. Holding a job, being able to engage in healthy relationships, being able to parent in a way that is in that middle ground, that is healthy, and not really living in either of those extremes. And so with that, though we know, again, much like a recovery model that it's going to take time, and it's going to take effort. There is hope, and there is this understanding that ACEs are fact and not fate.

Occupational therapy is also really wonderful about engaging children in activities where they have the opportunity to feel successful, that they get to say like, "I did it, "I conquered a thing that was hard. "I managed frustration in a way that was appropriate "and got to the other side." And when we've lived in environments where that happens so rarely, again, we're planting seeds in this place of having a predictable, stable adult relationship, that this sense of success is really powerful. And it also opens up the beginning of allowing for problem solving, like, how did I get there? What did I do that

allowed me to tolerate being frustrated about it, and also succeed and to be able to participate in predictable routines. This is huge for children from trauma. Predictability cannot be overstated to the point that we often talk about with families, this place of like, almost being hyper-predictable, like we eat at the exact same time, we go to bed at the exact same time because when we go back to that original 10 factors and we think about the chronic trauma of domestic violence, or substance abuse, even days that feel really calm and happy might end in a really big negative event. And so we want that place of really engaging in highly predictable routines in order to help children know that there's not a next big scary thing around the corner, that there's not another incident coming.

So these characteristics of occupational therapy, that ability to engage in a relationship, regardless of what the treatment goal is, are supportive for children with histories and contexts of chronic stress and trauma. The other pieces that OT's got a real opportunity to engage in that two generational dyadic intervention, like I was talking about, the ability for families to co-regulate together again then promotes that shift in our DNA, and we see long-term repair faster. When families are able to utilize regulation skills together, then the interventions that we provide as clinicians also lasts longer. I'm with families, at most two hours a week. I'm not with them all day every day. And so how do I best equip those psychological caregivers, those biological caregivers, to feel competent to help co-regulate, to help settle that brain system, to be able to give words to the experience, so that not only are adults in a better situation to manage their own experiences of trauma, but they also are better holders in navigating the experiences of those young children. In Bessel Van de Kolk book "The Body Keeps the Score," he talks a lot about how, again, these ideas around trauma and exposure of trauma really shift DNA and make considerable changes in the way that our bodies respond and move. And then we see that so much in early childhood trauma, that again, we talked about kind of the mice and the mice smell, that there is this piece that sometimes our bodies respond to a thing we can't give words to, that we don't

completely understand ourselves. And so Van de Kolk's work really talks about that sense of our body holding on to that stored experience of trauma, even if it is preverbal.
And in that, he also talks about that families who are in tune with each other, often have some level of physical rhythm. Just this really beautiful idea. I got to hear him speak one time at a conference and he showed this video clip where, like this family who's just the occupational therapist was trying to get them to roll a ball back and forth to each other like you would do with a two year old like, push it and the child pushes it back. And this child was probably eight or nine, but every time that the child would throw it, like well not throw it, but roll it to the mom, who I assume was the mom, this caregiver would pick it up and throw it across the room. And so the clinician would go and get the ball and say, "Let's try again," and bring it back and hand it to mom, and mom would roll it to the child, and the child would roll it to the opposite side of the room, that it was very clear that even in their rhythm, we were disconnected, that just getting us on the same page to move in some level of attunement is huge to allow our bodies to autocorrect to those experiences. I mean, again, an OT so much of that can be body based work to begin to help people really find a rhythm that works for their family and their story.

So I'm very eager to hear questions from you all. Before we do that, I do kind of wanna pause for 30 seconds and just acknowledge references for everything are on here, and also you guys have my contact information. I really love getting questions after presentations. I enjoy hearing from people later down the road, so if you've got anything at all, please don't hesitate to reach out and contact me. But I'm very eager to hear you guys at this point.

- [Fawn] Let's see, we have some questions coming in. By the way, thank you for that great talk. The first is do you see the opposite as well? My kids are experiencing,

"Normal levels of stimulation, "perceive themselves as depressed. "They seem to need the intensity to feel normal."

- Absolutely, again, that goes to kind of this like, pervasive dangerous seeking. We can often see this also in children where they've been in utero exposure to substances, even if they've been removed at birth and have no actual lived experience of trauma. Their body system just is used to a higher level of input, and so they will often read what we all kind of see as typical as too far down. And so we'll often find ways of trying to elevate that, or they will report frequently, like, I'm bored, I'm sleepy, again, some of those real depressive symptoms that you're talking about.

- [Fawn] The next question is, is it possible that doctors can be misdiagnosing children with ACE for ADHD? And how can you distinguish between the two? A lot of abuses are covered up in the home and they sound very similar.

- We see lots of things misdiagnosed. Yeah, we will often see again, children who've had some level of in utero exposure to substances will end up with an ADHD diagnosis, and that may be because a parent has admitted to it. Sometimes it's also 'cause the diagnosis gets us access to medications that we really need to have in order to be in a place where we are calm enough to make some healthy, safe choices. But yeah, we will see that happen. We also can see again, we talked about that place where those children who've experienced 10 ACEs a hundred percent of the time, statistically speaking, are developmentally delayed. And so we will see individuals who are diagnosed with autism, that when we start to kind of go back and pull things out, there is a lot of early childhood trauma, and some of their symptoms don't feel quite autism spectrum. And so we can see lots of overlap in those places.

- [Fawn] All right, can you explain some of the main assessments you use for evaluation of children with adverse experiences?

- So social workers are a big believer in what we call a bio psycho social which is just a really thorough questioning of everything. There are some actual screeners that you can use. There's a UCLA PTSD index. There's also the Trauma Event Screening Inventory. And there are two of those, there's a parent report version and a child report version. The TESI is public domain. I'm not sure about the UCLA, but both are really good screening tools for trauma.

- [Fawn] Someone is asking you made a statement about all ACEs are... trauma is and then all ACEs are, do you know what that statement would be?

- All ACEs are trauma, but not all trauma is an ACE.

- [Fawn] Thank you. Another one is, who completes evaluations for ACEs? What kind of assessments do you use in OT? So that's one of the places where we see some back and forth kind of in the greater literature. So ACEs are a research questionnaire. They're not really a thorough trauma screening. Again, and kind of talking through like the UCLA or the TESI, those are really thorough trauma screenings. So there are situations where like, even pediatric practices will give an ACEs screener, but they are not all encompassing of what a child might have experienced. But we also really aren't seeing them as documentation for court cases. It really is a good place of kind of informal evaluation, and being able to conceptualize the experience of a child.

- [Fawn] Emily asks, "Do you have any ideas "on how to support our students with ACE "during this time "when they don't have access to electronics? "I have so many students in this situation, "I know the lack of predictability "is greatly impacting them right now."

- Yep, I think there's a lot of truth to that. And we've seen such varying responses to kind of quarantine children place orders. One thing that we are aware of is that we anticipate because there are fewer providers seeing children, that we're gonna have lots of kids who experience chronic trauma who maybe have not previously, because so much in their world has shifted. And so I think for those of us kind of in the mental health world, we're really preparing to see that happen when children are back in our midst. I have been privileged of seeing some programs do some really innovative things. We have a rural program here in Tennessee that's been sending things in the mail, because they couldn't get electronic access to families. And so they just timed it so that they sent things so that it would arrive like every couple of days, and there would be a packet or a note or a card and those are all things that really we can begin to plant seeds and say, "I'm still here. "Here's an activity "that you guys might think through together."

- [Fawn] Is reactive attachment disorder associated with these kiddos?

- So there again, you're really talking about it, that depends. RAD, when we think about it from a diagnosis standpoint, if you test for it in the larger population, it generally won't show up. It doesn't have enough statistical significance. However, when you isolate a population, and look at children who've been in child welfare, or international children who were in some form of like child welfare custodial state, reactive attachment disorder shows up, it's about 39% prevalence, which is pretty substantial. So we know that early childhood trauma really drives difficulties in attachment. We also know that ACEs and attachment literature really line up together. I talked about earlier that quote from Selma Fraiberg around ghosts in the nursery. In the 1970s, we were functioning a hundred percent from attachment, there was no concept at that time of ACEs. So they really are incredibly complimentary. I don't know there's been any research or data around how many ACEs links to an increased likelihood of an attachment disorder, but it would be an interesting question.

- [Fawn] Someone is asking back on that mice research, where if you knew if the next generations of mice had any exposure to previous generations, or were their reactions only due to DNA?

- Totally DNA base, they were completely isolated. I don't remember who did the mice study, but the mice study is closely linked to some research out of Colorado, and that citation is on my list around kind of impact of cortisol exposure on telomere length in chromosomes and those are all very similar studies and kind of all interwoven together. But nope, mice were totally isolated. That was completely an epigenetic change.

- [Fawn] Someone is asking, and I think you touched on this. They're curious where there are other traumas or research elsewhere outside of ACE research, examples are natural disasters that cause continuing displacement like Hurricane Katrina, death of a parent and incidents of other discrimination, such as against LBGTQ parents, et cetera.

- This is where you get into that place of like, all ACEs are trauma and not all trauma is an ACE. When we think about like, havens, my apologies. When we think about specifically, like Hurricane Katrina, there is a considerable amount of information around kind of the long-term impact of that on families. But the long-term impact of that generally then related to an increase in substance abuse, an increase in homelessness, an increase in domestic violence, those sorts of things that then link back to ACEs. But much like my example of the tornado, it's not that single incident traumas don't have impact on people, it's that we do not see them linked to like cardiovascular disease. Or again, I mean, ACEs at the point you hit four ACEs, you're in a like 500% increase likelihood of having COPD, so we don't see those things kind of highlight and connect quite at the same level.

- [Fawn] Are there any strategies for working with families that aren't as receptive to your concepts? Is there any hostility or defensiveness that you see?

- When we start to talk about trauma, again, we talk about ourselves. And so when we start to offer that an experience might be hard for a child, then I have to offer that that experience was also hard for an adult. And sometimes one of the ways that we have navigated those conversations is by saying it wasn't a big deal. And beginning to open the door to say it was a big deal that your parents also drink, it was a big deal that your parents also left when you were four can take a lot of work. And most of the time we get there, and sometimes I tell them like, "Yeah, it's my crazy white lady stuff, "and that's okay, too." But in infant mental health, we're big on the idea of speaking the unspeakable and having a hard conversation and being willing to hold uncomfortable effect. That happens a lot, but that's okay.

- [Fawn] Okay, I'm gonna take a few more and then I'm gonna have everyone reach out to her on her email because we have them just coming in non-stop and we just can't keep everyone here all day. I'm gonna take two more. Would being the child born of a young mother 15 to 27 fit into the ACE criteria?

- Nope, it's not an ACE. Again, it might have been an environment that potentially was unpredictable and created its own situations, but having parents who are young doesn't again equate to long-term health outcomes, so it doesn't put you at an increased risk for like a heart attack.

- [Fawn] And then the last question we'll take today, what types of family engagement do you find most effective when helping children with ACEs?

- I spend a lot of time in the floor. Play is always the language of children. And sometimes it is static parallel play until we get to a place we can play together, and that's okay. But yeah, play is always the language of children.

- [Fawn] Okay, we have a lot of great other questions here. Please reach out to her on her email. She graciously gave that to us so that we could pass that along, so please reach out to her. Lots of great questions. Thanks for all the great Q&A session just now. Thanks, Alison for all your great answers.

- Thank you.

- [Fawn] I hope you have a great rest of the day. You join us again on Continued and occupationaltherapy.com. Thanks everyone.