

# Transcript: Research behind disparities in mental health and impacts on learning

Perfect. Well, thank you, Deena, for hosting me. And thanks everyone else for having me today. I'm really excited to be here at this group. I know it's a fantastic group of educators on the call, speaking of folks who are doing purposeful work and supporting students each day and every day. So I'm really, really grateful to be here and to be sharing some of my research in this talk, which is called "Mental health and academic performance in post-secondary education: Socio demographic risk factors and links to childhood adversity".

And I suppose some of this connects to some of my introductory remarks. So of you know, like, what, why this work and what's led me down this road, and I suppose, a key motivator, and I think take home message that I want to leave folks with after this talk is an acknowledgement that people are navigating different challenges as they walk through our doors in post-secondary education. And many students who, you know, are navigating systems of oppression that the stressors that come with oppressive systems, and those who might have experienced developmental vulnerabilities as a result of childhood adversity, are really entering our doors, from a developmental perspective, navigating stuff that that many don't have to, right? And that we have this opportunity as post-secondary education institutions to think about the conditions we create in our classrooms, in our spaces, in our communities, to realize that we can meet different learners where they're at and to acknowledge that, you know, some learners are navigating things that others don't have to. So, it's really important that we're mindful of that. And Deena already shared a very beautiful land acknowledgement. And I want to acknowledge some of the spaces that this work has been done with it. And so as we know, I'm conducting this presentation, virtually with you all, but I'm here in Toronto, which is in the traditional territory of the Mississaugas of the Credit First Nation. And the research that I'm going to share with you today was conducted both in Toronto as well as London, Ontario in the traditional territory of the Haudenosaunee, Lūnaapé, Anishinaabe and Attawandaron people.

I present this work with the immense recognition of the role colonization has played in establishing systems of marginalization and oppression that I'm going to be talking a little bit about today. And also, with immense gratitude to the many Indigenous colleagues, friends who've been part of this research and professional journey, as well as Indigenous participants in these studies. And I think, again, in context of my own positionality important that I acknowledge my own ancestral history as a settler on these lands. And in doing so accepting my responsibility to honour relations with Indigenous people in the Dish with One Spoon treaty region, and really want to work as an ally through this work, and more generally, with Indigenous people, and folks who have other identities that I don't necessarily share.

So by way of a brief outline here today, and I'm going to start walking through with folks a little bit of introduction and background, some of some of the theoretical frameworks that I've used in my research that have really guided this work. And then I'll move into sharing results from one study that I conducted using the National College Health Assessment data in Canada

looking at flourishing within marginalized communities in post-secondary education. I'll then move on to talking about another study that really looks at stress and academic performance during students' transition into post-secondary education and looking a little bit at the role that childhood adversity or adverse childhood experiences play in stress, mental health and academic performance and post-secondary students. And then we'll walk through some conclusions and really hoping to focus the conclusions on institutional actions, what can and should we be doing, to shift our organizations, to shift our communities to be more supportive towards learners with marginalized identities, and students who might have experienced childhood adversity.

So, beginning with some introductory frameworks that really informed this work for me, I want to first start by sort of defining what I'm talking about when I talk about marginalized and disadvantaged socio demographic groups. And really what I'm getting at with the different identities who I've included in this study, or identities that I've sort of investigated in terms of mental health disparities, is looking at individuals whose identity does not align with the dominant norms of our culture, and who might experience judgment, exclusion or prejudice as a result of their identity. And individuals who are facing barriers and navigating systems and institutions that weren't necessarily designed with them in mind, and in many instances might be also navigating overt prejudice and exclusion within our organizations. So within the context of the research I'll share with you today, I've looked at looked at some of these effects that play within sexual minorities, so students who do not identify as heterosexual, students who identify as transgender or gender non-binary, female identified individuals, racial and ethnic minorities, again, students who identify as non-white, Indigenous students, students with disabilities and students with diagnosed psychiatric conditions.

And within my work, I very much take an ecological systems theory-informed understanding of humans, how they develop, the complexity of the multi-level systems that are at play in influencing human development. And I particularly like this graphic that was developed by Sidiki, Irwin and Hertzman in 2007, in a report titled Total Environment Assessment Model of Early Childhood Development, which was an evidence report for the World Health Organization's Commission on the Social Determinants of Health. And there's a quote in this article actually that, or an educational resource that references it says, that says From Neurons to Neighborhoods. And I think that's a really kind of compelling idea, from my perspective, and realizing that as humans develop, we are constantly interacting with multiple levels of the environment around us and the systems that we exist within. And from the very micro level, from the level of neurons, cells of the neurotransmitters pulsing through our body, those are constantly interacting, reacting with the environments around us at multiple different levels. So that includes, of course, our family environment as sort of the most immediate set of surroundings, the economic social systems at play, of course, our identities, gender roles, family, health status, etc., etc. And then we have our immediate residential community that the neighbourhood that we live in, we have our schools we have our institutions that surround us so that we're participating in whether that'd be hospitals, political organizations, etc., etc. And then continuing to balloon out from there we have of course, like our political environment, the legal frameworks that we're living in developing within etc., etc. And at the largest level, this largest circle, the global ecological, geopolitical, policy and social landscape that we're within.

And we humans, these little humans, I like this little graphic that shows from, you know, a baby right up to an adult, we're developing over time through all of these systems, right. So we need to have that kind of level of analysis of realizing there multiple things at play, right, that are interacting to influence human development outcomes.

Also important in understanding mental health disparities and differences within marginalized socio demographic groups is a group of or an area of study called Minority Stress Theory that was coined by Elon Meyer, who's a psychiatric epidemiologist who really started to identify that marginalized sociodemographic groups experience increased risk for distress due to experiences of discrimination, harassment, systemic oppression and barriers, stigmatization and social isolation, that there are these deleterious stressors that uniquely impact folks who hold minority identities. And I think important in sharing this and also sharing, you know why I use the term marginalized, for example, is to try to challenge the notion that there are deficits within folks who hold minority identities, and rather position a deficit within the system that's leading to this heightened level of stress, right. So, for example, when we're looking at mental health disparities, which I'll be sharing some research on today, that's not to say that that folks who pulled the marginalized identity are have a higher propensity to experience poor well-being right, that's not within them. It's the systemic stressors that are more frequent, that are more deleterious, that are causing that difference in an ultimate outcome. Similarly, when we're looking at academic performance, and the role that mental health plays in influencing learning and academic performance, that individuals who hold marginalized identities, again, are navigating additional stressors, additional cognitive load associated with navigating our institutions and our societies.

Similarly important in this work, and to all of our work is realizing that there's, of course, a relationship between stress and academic performance. So many will be familiar with the Yerkes-Dodson law, which was first developed in 1908, that looked at the overall relationship between stress and performance, and really recognized that stress can play a positive role. So when we're, you know, in a high-pressure task, when I have to compete in a run, say, or when I'm about to give a presentation, that a moderate level of stress actually is helpful, it leads to some arousal, it leads to a sort of leveraging that the resources we need through the sympathetic nervous system response to actually perform. But we sort of hit a tipping point. So, when stress is severe, when it's chronic, when it reaches those toxic levels, it actually undermines our ability to perform. And this is especially important when we're thinking about academic performance, right? So, the stress system, that that sort of fight-flight-freeze response, evolved over time, when we were in very different contexts, right, we weren't in a class, we might have been utilizing that stress response to navigate an actual risk of a predator or, you know, an actual risk to our physical safety. So that stress system does really well at performing and equipping us to respond to that immediate stressor. But when the stressor is, for example, a math test, that's a very different thing, right, and the fight, flight or freeze response is actually going to have the potential to reduce our ability to perform academically in those environments. And of course, we know that there are cognitive elements of anxiety and stress, like rumination, like worry. So, the stress response itself can actually take up and utilize some of the cognitive resources that we might otherwise need to perform academically. So just sharing that for context that stress isn't all bad, it can be performance enhancing. But what

we're talking about when we're talking about the sort of role that minority stress plays that uncontrollable deleterious significant stress, that that actually will become at a point, undermining of academic performance.

And again, so some different research out there on how stress impacts performance. And I think just as I said, one of one of those things that's at play is when our sympathetic nervous system is activated to a high degree, we're actually mobilizing resources away from sort of our higher level thinking, cognitive control, executive functions, that we need to learn and express our learning. So that we could have that fight, flight or freeze response. And then again, similarly, when we have that anxious response, the cognitive elements of the stress that we're experiencing, is going to actually utilize some of those reduced resources that we have left at our disposal. So, processing efficiency, and attentional control theories are two areas that help us understand this and where there's been a lot of research that's looked at this relationship, where we know first, that we're actually seeing that reduction in our overall ability to engage in cognitive control, working memory, executive functioning, many of the things we need to learn. And that in addition to that, that capacity is reduced, but the anxiety and stress itself is taking up or becoming a cognitive load. So it's using those reduced resources we have at our disposal to ultimately undermine and lead to reductions in academic performance.

And as I'm sharing a little bit about childhood adversity, in the talk here today, we're wanting to share a little bit of work that came out of Boyce and Ellis in 2005. And that's evolved over time. And there was originally a lot of research that talked about the idea of stress reactivity and looked at differences in stress reactivity as a function of childhood trauma or childhood adversity. And what I like about the way Boyce and Ellis evolved the conversation about stress reactivity as they started using the language, biological sensitivity to context instead of stress reactivity, because when we think of being reactive, we think that's a bad thing, generally, right? If I have high reactivity, that the automatic connotation is that that's gonna not serve me well, right in many environments. And the move to biological sensitivity to context actually acknowledges that what we see in those who might have experienced adversity in childhood is not necessarily a reactivity, that's always bad, but rather more sensitivity to the surroundings or the context around us, we're more influenced by the immediate surroundings within our environment. And they use the word Orchid Children, to talk about that idea of an orchid versus a dandelion, right? We're, if anyone's grown an orchid, I wouldn't, I couldn't, I don't have that much of a green thumb. But you'll know that orchids are much more sensitive right to the water environment, the light environment, the temperature around them. And when well cared for when in a positive context, orchids will flourish, and the outcomes will be spectacular, they'll be beautiful. When we compare that to a dandelion, a dandelion can grow out of the tiniest crack in a sidewalk, right, and might be a little bit less sensitive to those environments, their outcomes are going to be pretty consistent, regardless. And this idea of orchid children or folks who might have high sensitivity to context is that placed in a supportive and nurturing environment that the outcomes have the potential to be incredibly positive. And what we learn from this, actually, is that when we invest in efforts to create positive conditions, learning conditions for students, for example, those efforts are going to have the biggest impact on those who might have developmental vulnerabilities, for example, as a result of having experienced childhood adversity. And this is just one theoretical model that that's helped us

understand this. And this actually comes from empirical research that Obradovic and colleagues have conducted, where they looked at a number of different outcomes and the degree of sort of adaptive outcomes versus maladaptation, in people who had high biological sensitivity to context or those sort of orchid phenotypes, compared to folks who had low sensitivity to context or those sort of dandelion phenotypes.

And what they identified this was looking at developmental outcomes later in life. So for example, if we're thinking of emerging adulthood for post-secondary students, is that if there was contemporary adversity later in life, so again, picturing a university student, that maladaptation would be much higher in the high biological sensitivity to context, the straight bar here. Whereas in a highly supportive or nurturing environment, levels of maladaptation, or maladaptive outcomes were actually much lower in that high biological sensitivity to context group. Whereas folks who had that dandelion phenotype, low sensitivity to context, their outcomes were relatively flat, regardless of the contemporary conditions that they were in. So, what this is telling us is that if we create supportive environments, if we create nurturing environments, those are actually going to have really, really positive outcomes and contribute to the flourishing of high sensitivity to context folks. And that they can actually experience outcomes that are above and beyond even the outcomes that folks who might not have developmental vulnerabilities associated with childhood adversity.

So I always find this inspiring, right, this really inspires me in my work, because I think we have so much opportunity, we have opportunity to change conditions that are going to lead to more positive outcomes for those who might have a higher level of risk and be carrying a high level of risk with them into our doors, in post-secondary education as a result of their developmental experiences.

And many will be familiar with this. And this will be the last sort of piece of theoretical context. So my apologies, you see the nerdy side of me coming out that ranges from the neuroscience through to the sociocultural analysis. But, I think that it's really important to get in to look at these diverse areas of theoretical context, again, realizing that we're existing in these multiple levels of systems that are contributing to different outcomes.

But within this research and work utilized the flourishing measure of mental health and wanting to share this in the context of the dual continuum model of mental health and mental illness. We realize that humans can experience or have both the presence of mental illness, coupled with also experiencing positive well-being. So, you know, we might have a psychiatric diagnosis or a diagnosed mental illness, while also experiencing, under the right conditions, with the right supports in place, optimal mental health and flourishing. And the flourishing model of mental health recognizes this. It recognizes that our flourishing levels can change over time, that those are influenced by the conditions that we're in and that we can have both the presence of mental health with a mental illness diagnosis at the same time. And this will actually play out in some of the research that I share with you as well, where we could identify that there is a significant proportion of students who do have a diagnosed mental illness while also experiencing positive mental health. They're flourishing at the same time and similarly that level of mental health, a disparity in flourishing levels is something that influences academic performance.

So let's go into some of this research. So let's start with sharing some findings from one study that I conducted around the flourishing and academic performance within marginalized socio-demographic groups in post-secondary campuses.

So for the purposes of this study, I utilized the National College Health Assessment Canadian Reference Group data, which was data from the 2016 reference group that was conducted. It included 42,642 participants from 40 to post-secondary institutions in Canada. So on a call with a group of folks working in post-secondary education, some of your students data will likely be in the dataset that I'm sharing with you today. So there was a lot of great strength in having that large dataset available to conduct this kind of research, particularly when doing research, looking at minority communities who might make up a small proportion of our overall campuses.

So could actually kind of interrogate what was at play because of the size of the sample here. Within this study, an overall finding that I identified is that there were significant disparities in mental health among marginalized sociodemographic groups, that's... I researched within the study and overall identified that marginalized socio demographic groups were experiencing languishing mental health. At 1.6 to 3.4 times the rate of their peers who were not marginalized on the same binary. And I'll share some of these specific results with you here, starting with gender minority students or students who identified as transgender or non-binary. And what you'll see on this graph is sort of the marginalized identity or community within the Orange Cross individuals who identified with the dominant norm in this case, cisgender in the blue columns and flourishing on the left side, moderate mental health and the middle side languishing mental health on the right side using that Corky's version of scale.

So what you can see here is that transgender students, a lower proportion of transgender students were experiencing a flourishing mental health. Still, 36.2 percent were, and at a higher proportion, significantly more, we're experiencing languishing mental health within the study.

And you'll see across each of the groups that I share a very similar pattern where this is looking at racialized students, where racialized students were less often experiencing flourishing mental health, more often experiencing languishing mental health than their peers who are white. Sexual minority students, or students who did not identify as heterosexual, so they might have identified as gay, queer, bisexual, lesbian, that's non heterosexual students were less often experiencing flourishing mental health, more often experiencing languishing mental health.

Similar pattern for students with physical disabilities. Students with learning disabilities. Students who have a diagnosis of ADHD. And interestingly here, so Indigenous students were actually the one group, the one marginalized community who on this measure... that this just disparity didn't play out within indigenous communities. And I did a lot of reading, actually. It was quite curious about this because I was heavily involved at the time that I was conducting this research; I was working at Western University and working with colleagues on our Indigenous strategic plan at Western and a number of other studies to understand experiences of Indigenous students. And we knew quite clearly that Indigenous students are navigating a number of stressors and barriers as they navigate post-secondary education. And interestingly, as they dove into more research that was looking at the study of resilience within Indigenous communities. There was a lot of work that was identified in some of the unique community

factors at play within Indigenous communities, particularly around social support, around connection to culture or language existing within a supportive social community. And many of these sort of factors or facets of community resilience are actually captured within the flourishing scale, the Corky's flourishing scale.

So I think a little bit of what we're picking up on here is we, of course, know that there are more stressors and barriers at play, but that maybe some of those aspects of minority resilience or community resilience, the unique strengths of Indigenous learners and the communities that come from bring into the environment might have been at play and not leading to this measure disparity on this scale.

And then last week, these were the findings that, of course, the most significant findings among students with a psychiatric condition where you can see this was actually the most striking finding. This was the 3.4 times rate of experiencing languishing mental health compared to students who didn't have a psychiatric diagnosis. And interestingly, I think that this helps us understand that dual continuum model, right? Where students, 21.8 percent of students, got a psychiatric condition were actually identified as having flourishing mental health. So we see a high relationship between having an identified mental illness and languishing mental health insofar as 27.7 percent were experiencing languishing mental health. While also seen, and again, I think this is something that lends hope and possibility of how do we change conditions to meet the needs of students who might be navigating mental illness, where 21.8 percent of folks still were experiencing that element of flourishing mental health?

On that same note, as I just shared, a lot of sort of the challenges and the outcomes, in terms of mental health disparities, where marginalized folks were experiencing more frequently experiencing languishing mental health. I think important that we do take that kind of strength based analysis of realizing that there were a number of folks who hold a marginalized identity, whose mental health was flourishing as well. And I think, again, some of what we'll talk about later is how we shift our conditions to increase that proportion so that we don't see these disparities play out.

So coming back to that understanding of minority stress theory and realizing that really we're seeing these disparities in mental health outcomes, not because individuals with marginalized identities are more likely to experience poor mental health, but rather because of the systems and structures that the increase in deleterious and frequent stressors that individuals with marginalized identities are navigating. I did, sort of systematically, look at how many stressors were reported as traumatic or very difficult to handle among these different marginalized communities. And what you can see here, the average in the total sample of students had about 3.0 stressors listed as traumatic or very difficult to handle within the last 12 months. And that compared to within each marginalized identity I've listed here, between 3.7 and 6.4 times or number of stressors being reported as traumatic or very difficult to handle.

So students with marginalized identities were reporting that they were experiencing more and different stressors, and the pattern of these stressors was different. So, some examples of that included students with psychiatric or physical disabilities or identifying comorbid health issues as traumatic or very difficult to handle far more often than their peers who didn't have a psychiatric or physical disability. Racialized students were reporting career-related issues as

traumatic or very difficult to handle more often than their non-racialized peers. And we know from broader literatures that, of course, career and employment discrimination is a significant factor at play, a mechanism through which racism continues to influence the disparity in outcomes.

Transgender and gender nonbinary learners were identifying family problems and personal appearance as traumatic or very difficult to handle more often than their cisgender peers. And of course, we know that might be connected to coming out issues, conflict with family of origin or loss of relationship to family of origin as a result of navigating a gender transition. And then, of course, depending on the degree to which a learner might present with a sort of a physical appearance that may or may not match their gender identity. That, of course, that that element of physical appearance being at play because you're sort of constantly self-monitoring and realizing the way your professor is, your peers, etc. might be reacting to you and making assumptions about who you are and the gender that you hold.

And then for learners with ADHD and learning disabilities, we saw a notably higher frequency across all stressors listed here. So I think the overall message here is realizing that there are more frequent and different stressors at play as a result of, or connected to or holding a marginalized identity. So these students are navigating more, right? More challenge, more difficulty. And the other thing I want to speak to a little bit here is as many will have seen these results from before, and there's sort of a list of stressors that are included, which includes, you know, health issues, academics, career-related issues, etcetera, etcetera.

The other very interesting finding was that all marginalized groups clicked the other box far more often than their peers, who didn't hold a marginalized identity. And I sometimes used the language of like, sort of tyranny of the majority in, you know, being critical about quantitative research approaches because that list is sort of generated from the average or most common stressors students might experience. And that list in and of itself doesn't actually capture any unique stressors, minority stressors that might be uniquely impacting a marginalized student.

So, for example, conflict with families are listed but coming out issues are not listed, which for a transgender or sexual minority student might be a really significant stressor at play over the university or college years. Similarly, navigating or advocating against racism on campus or colonization, significant stressors that may be at play for learners who are racialized and or Indigenous, but doesn't show up on that list, right? of the kind of common stressors you experience. So I think that's something we need to be mindful of as well.

And then I share sort of each of these slides with looking at, you know, a singular, marginalized identity compared to peers who didn't hold that marginalized identity on the same binary. I think, of course, we need to always be mindful of the notion that humans are very complex. We hold multiple identities. We've had multiple developmental experiences. So, so in doing so, I wanted to sort of bring this lens of intersectionality into the work in terms of looking at whether holding multiple marginalized identities led to even greater disparities in mental health. And that did play out in the data here. So here you can see a significant and strong correlation between the number of marginalized identities and individual health and their overall flourishing score here on the left hand side. So 60 would be flourishing mental health.



Zero would be languishing mental health and as the number of marginalized identities that an individual reported increased, we saw low, lower or reduced scores on the flourishing scale.

And then last but certainly not least, I apologize, I'm not walking the talk on presenting low cognitive load here, so I'll give you this sort of summary outcomes of this graphic. But I did structural equation modeling as an approach to actually look at the role that flourishing or mental health was playing in mediating relationships between identifying with a marginalized socio demographic group and academic performance. And what I found in modeling the data in this way was that mental health, as measured by the flourishing scale, either partially or fully mediated any measured differences in academic performance among marginalized communities. So, so it's basically saying that differences in mental health statistically explained disparities that we could identify in academic performance. And I think this is really important in the ways that we realize why might there be differences again, from a strength-based perspective, realizing that the systems of oppression that are at play here, and that are driving differences in academic performance. And many of us might have read historical research that that's a very deficit based right? that seeing certain communities do worse at school, which becomes a very problematic narrative. And again, basically thinking of individuals who hold a marginalized identity from a deficit lens that then further perpetuates oppression.

What I was seeing here and was able to demonstrate here is that, if we are seeing lower academic performance within these marginalized communities, it's actually directly related to experiencing those frequent chronic deleterious stressors that are undermining well-being and academic performance. And again, within our institutions, some of those stressors are created or generated by the systems that we have at play.

So moving into the second study here, I looked at stress and academic performance during students transition to university and particularly looked at developmental vulnerabilities. So relationships are impacts of having had adverse childhood experiences on stress and academic performance during a transition to university. And this study was conducted through a first year experience study that myself and some colleagues at Western University, designed and administered in 2016, had 747 Western University students who completed their first year at the university and the 2015 to 2016 academic year. So 747 seven folks participated in the overall survey, and then 74 students completed a follow up study looking at adverse childhood experiences specifically.

And the specific measures that I'll share with you here today, driving out from this study, we're looking at measures of stress as a single item that sort of is considered an acceptable and relatively robust way of actually assessing or measuring stress, looked at sense of belonging and GPA as a measure of academic performance within the first year experiences study. And then in the adverse childhood experiences follow up, I looked at the Adverse Childhood Experiences scale to measure the number and severity of adverse childhood experiences.

Students might have experienced the perceived stress scale as a validated, psychometric validated tool to measure stress. And again, that Corti's flourishing scale. And within this study, as students to self-report the level of stress they were experiencing over the academic year, and I don't think this will come as a shock to many of us who work in supporting students, but overall, out of a scale of 5–5 being tremendous stress; 1 being no stress—students reported

stress on average at about 3.7 out of 5 and the self-reported stress overlapped with demands within the academic cycle. Of course, in December and April, that final exam period being the highest level of stress that students were reporting.

And again, looking back to the stressors that students reported as traumatic or very difficult to handle, we saw academics as the highest reported stressor. It can make sense with that last line of when students are reporting higher levels of stress when academic stressors or assessment was highest, followed by sleep difficulties, social relationships, finances, personal appearance and career-related issues.

And just prompted us to remember this is looking at the folks who participated on average across the whole study. And similarly to what I shared in the previous study, as we would expect to see different patterns and more frequently reported stressors within marginalized learners.

So I particularly was interested in the study of looking at what role sort of community or sense of belonging played in mediating the relationship between stress and academic performance. And what I identified, first and foremost, is that the overall level of stress a student reported was strongly related to drop in GPA from final year of high school to first year of university. So the more stress students reported, the lower their academic performance during transition to university and the greater the drop in academic performance from high school to university. But interestingly, a sense of belonging mediated this relationship. So students who reported high levels of sense of belonging had less of a negative impact on academic performance as a result of experiencing stress compared to their peers who reported lower sense of belonging. So it's not that they didn't necessarily experience stress, but that stress was less harmful to their academic performance.

And it would be interesting, and we can imagine how this might impact. And I didn't look at this relationship, particularly within different marginalized, socio demographic groups, but when we think of that notion of sense of belonging, we know that if we do hold a minority or marginalized identity, it might be harder to form that supportive community, right? To find that sense of belonging, that sense of seeing yourself within the institution that you're attending. So, so that could be a promising mechanism or mechanism through which some of these disparities and stress and mental health are negatively impacting academic performance and may be a promising area to focus our efforts to improve sense of belonging within students.

And then last but certainly not least, what I was able to identify through this study that adverse childhood experiences was significantly related and predictive of both mental health and academic outcomes in first year university, where adverse childhood experiences were negatively correlated with students' academic performance, their overall average and first year university was positively correlated with their perceived stress score and negatively correlated with mental health, as measured by the flourishing scale where students who experienced more or more intense adverse childhood experiences were performing more poorly academically and experiencing great greater challenges with stress and mental health compared to students who had lower scores on the adverse childhood experiences scale.

So what does this all tell us? How does this tell us about what we can and should do in terms of supporting our students at our institutions, just bringing the kind of overall picture together? I think the key message that we can realize is that individuals who have experienced childhood adversity and carry that developmental vulnerability with them and those who hold marginalized identities are experiencing greater challenges with mental health and greater stress within their time in post-secondary education. And those disparities in mental health and stress are having a negative impact on students' ability to learn and perform academically.

And then, of course, seeing that sense of belonging is a promising mechanism, creating those positive conditions, that sense of belonging within our institutions has promised in mediating the negative relationship between poor mental health through increased stress and learning. For me, what this really underscores for us as educators is that post-secondary education institutions have both a moral and an educational imperative to create conditions where all learners have the opportunity to thrive, particularly those experiencing heightened stress resulting from marginalization or developmental disabilities.

So, really thinking, you know, this focus on mental health and creating positive conditions isn't just the right thing to do. It's also what we need to do if we want to create more equitable opportunities for students to learn and to have rich learning experiences and post-secondary education.

So we'll wrap up just by sharing some promising practices that have been shown, from the broader literature, to enhance wellness, particularly among marginalized socio demographic groups. First and foremost, we need to think about mitigating barriers, barriers that might be at play within our larger society and communities, but also very significant barriers that are at play within our institutions themselves. So I think of accommodation policies and practices and universal design for learning as critical for students who might be navigating physical, learning, mental-health-related disabilities within our institutions. How we think about offering culturally safe, relevant and responsive services, such as to support wellbeing within our institutions. So sometimes the services design to support if they don't have cultural safety and relevance as a lens built in might not actually be designed or meeting the needs of students who need those resources the most.

And then considering financial and socioeconomic access barriers that again, we know from the broader literature that many forms of oppression actually manifest through that socioeconomic mechanism of lower SES in both childhood, but also potentially presently for learners with marginalized identities. Connecting back to the notions around sense of belonging, of course, building community and visibility, we know that feeling like you can see your identities represented within the community you're in, has a significant or plays a significant role in forging that sense of belonging and well-being. And this plays out in our physical spaces, our curriculum, who, who's represented and who's not, considering niche programs and services. So I think of support set that provide space for students navigating marginalization to gather, to see and connect with other people who might have some shared lived experiences to kind of understand and feel seen and heard, which speaks to those spaces for collective meaning, making and action. And there's been a lot of work done within marginalized communities—again, that notion of minority resilience—of what are the unique factors that learners with

marginalized identities and the communities that come from bring into our institutions and that when individuals have navigated oppression but have a space to be able to make meaning of that, to understand it with other people who have experienced similar types of oppression and then to engage in action to address it, that can actually have transformative benefits on well-being.

Of course, shifting cultures and broad awareness so, so helping members of our community, our faculty, our institutional leaders understand that these factors are at play, right? and that we need to be mindful and take an anti-oppressive approach within our organization. So anti-oppression training for students and employees, intercultural competency training, overall efforts to increase empathy and understanding for students who might be navigating heightened stressors due to marginalization during college or university. Increasing institutional commitments, so prioritizing supports for marginalized learners within our strategic planning efforts. Effortfully engaging and involving diverse voices in decision-making and within our programs and services at colleges and universities. Engaging in and being really mindful through our policy review processes. How our policies might be influencing either exacerbating some of these disparities or correcting for them. So ensuring that we have checks and balances to be mindful of impacts of our policy frameworks on learners with marginalized identities. And then last but certainly not least, increasing representation, so increasing representation with our student population, leadership, our faculty, our staff, through enhanced hiring processes, enhanced relationships with communities. It's often a barrier if an institution is perceived as not having certain identities present or visible or represented—why would someone with that marginalized identity necessarily want to work there? So we have to be effortful at engaging in relationship building. And then building pipelines for students, faculty and employees to be able to grow into different roles because if there are socioeconomic or oppression-related barriers at play, we often see those of course impact the ability to pursue and achieve credentials which are often a barrier to coming into the workforce as well as pursuing an education.

**Text on screen:**

THANK YOU. Questions? More questions/engagement/collaboration opportunities  
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