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Mon, 8/8 1:06PM 51:14

SUMMARY KEYWORDS

head injury, delinquency, criminology, risk factors, people, injuries, childhood, head, orthopedic injury, talking, adolescence, concussions, theories, absolutely, happening, pretty, crime, cte, kids, clinical

SPEAKERS

Jessica Mongilio, Jenn Tostlebe, Jose Sanchez



Jenn Tostlebe 00:14

Hey everyone. Welcome back to The Criminology Academy podcast where we are criminally academic. My name is Jenn Tostlebe.



Jose Sanchez 00:21

And I'm Jose Sanchez and today we have Jessica Mongilio on the podcast to talk with us about head injuries and delinquency.



Jenn Tostlebe 00:30

Jessica Mongilio is a PhD candidate in the department of criminology at Pennsylvania State University. She received her bachelor's degree in neuroscience from The Ohio State University. Her research interests fall largely under the scope of adolescent decision making, especially as it relates to delinquency and substance use. Her work has been published in outlets such as the Journal of Research on Crime and Delinquency and the Journal of Studies on Alcohol and Drugs. Thank you so much for joining us, Jessica. We are excited to talk with you today.



Jessica Mongilio 01:02

Yeah, really happy to be on the show and talk with you guys today.



Jose Sanchez 01:07

Alright, so today's episode, we're going to sort of have this broader discussion on head injuries and biosocial criminology. And then we're going to talk about a paper that was authored a solo author, by our guest, Jessica. And so with that being said, Jenn, why don't you have the first

crack?



Jenn Tostlebe 01:30

All right. Thanks, Jose. So first off, Jessica, I just want to acknowledge the fact that you have an undergrad in neuroscience. And I think we just need to all pause and reflect on that for a minute. Because I know Jose and I would not have been able to do that. No offense, Jose, but we know where we stand.



Jose Sanchez 01:47

I keep telling people I wasn't allowed to take chemistry in high school. So, no offense taken.



Jessica Mongilio 01:57

Yeah, it was a very fun major. I really enjoyed it. There was about a week where I thought I wanted to like go to med school and be a neurologist. And then I decided that was a horrible idea and I should definitely not do that. But yeah, it was a really fun time. And honestly, I promise it wasn't like as scary or like horrifyingly rigorous as it sounds.



Jenn Tostlebe 02:19

I mean, I don't know, I started off as a chemistry major, and didn't make it more than a year. So I would probably disagree with you on that. But anyway, I just wanted to point that out because of what we're going to be talking about today. And how it seems kind of fitting that you are now at least as far as this paper goes, interested in work within the bio social camp in criminology. And for our listeners, can you describe what exactly biosocial criminology is? And perhaps what kind of work would fall under this umbrella?



Jessica Mongilio 02:53

Yeah, so biosocial criminology, is really just a consideration of like the biological risk factors for criminal behavior by themselves or in combination with like social risk factors, you know, it is biosocial. It's not just biological criminology. And because of that, like it is inherently interdisciplinary. And it brings together theories and perspectives from traditional criminology and sociology and psychology and neuroscience and human development. And sometimes even economics, like it's all over the place. But because of that, you get some really interesting and really diverse topics. So while you know, having a background in neuroscience and being interested in criminal behavior made head injury, a really kind of easy place for me to start. I think there's so much work in criminology that falls under the umbrella of biosocial, that isn't necessarily considered biosocial criminology, right. So anything that looks at, like, relationships between substance use and crime, that's basically biosocial, because substance use affects kind of what's happening on a neural and a psychological level. I have some work with Dr. Rebecca Bucci, who was on, I guess, an earlier episode of the podcast, where she looks at pubertal timing, that's 100% biosocial research and we actually have another paper we're

working on about pubertal timing and mental health. And it's not an area that a lot of people consider themselves to be like, actively engaged in. But, I think there's so much more biosocial criminology happening in the field than a lot of people are really aware.



Jenn Tostlebe 04:43

Yeah, I think that's probably true, too. I hadn't even I mean, thinking about Rebecca's work. I hadn't even considered that that would fall under this umbrella, but I suppose in a way I definitely would.



Jessica Mongilio 04:54

Absolutely.



Jenn Tostlebe 04:56

Alright, so we have to bring up this question for all of the critics out there, but Lombroso was known for his work in the very, very early days of biosocial criminology. In short, he put forward this theory, using, like looking at human bone remains basically and stated that crime was an inherited characteristic trait of human behavior, using his term, the Atavist. Biological throwback. But, you know, his work has been very criticized, and for good reason. And now, I think today, a lot of people in biosocial, are distancing themselves from his work. And so how does contemporary work differ from the early days of biosocial crim?



Jessica Mongilio 05:40

Yeah, so Lombroso's theory and kind of many other people at the same time, was really known for focusing on those like, specific biological features that were thought to be related to crime. And it was largely due to like these evolutionarily like old characteristics, right, like atavisms are actually relatively common throughout nature. They're basically just like vestigial traits that we've carried on and don't need, like humans have tail bones, that's an atavism that we all have. So the majority of Lombroso's theory in my head is actually more tied to like evolutionary theories I feel than contemporary biosocial theories. And I think that's largely because like while contemporary biosocial theories, like can and do look at genetics. There's so much more than that now. And there's a larger consideration given to like social and environmental risk factors, right? Like at this point in time, we know it's not like nature versus nurture, they definitely work together. And it's not just one gene that makes you criminal. And so I think that contemporary biosocial does still have kind of this shadow, this ghost of Lombroso, that's haunting it. But it's really kind of disappointing, because there's so much work in biosocial criminology that is really inclusive of social risk factors, and kind of places them as being really important. So another piece that I think is totally biosocial, and no one else would probably think of this off the top of its head, is Rob Sampson's work on lead exposure, because he has that macro level piece looking at like disadvantage and the risk of lead exposure and poisoning prenatally, which is related to impulsivity and criminal behavior. And that's pretty contemporary biosocial work, but it's looking at how this relationship between disadvantage and kind of spatial patterns interacts with this biological process regarding like lead exposure

and lead poisoning in children, and how that relates to criminal behavior. So I really just think that contemporary bio social is so much more complex, and occasionally convoluted, but just really brings a lot more to the table than the very kind of simplistic and outdated Lombroso-esque theories that people still tend to think of.

J Jose Sanchez 08:13

You're bringing up these topics where I'm like, Hmm, that makes sense. But I don't know that I ever really thought of it that way.

J Jessica Mongilio 08:21

And most people don't.

J Jose Sanchez 08:22

Yeah, because when you hear Rob Sampson, right? Like you think social disorganization, collective efficacy, like these real macro social structural studies. I've read his stuff on lead exposure, and not once did it ever cross my mind, Hey, this is biosocial.

J Jessica Mongilio 08:40

To be fair, I'm not 100% sure it ever would have crossed Rob Sampson's mind either? I don't know. I can't speak for him. But it's probably not something that the majority people would think about when reading that paper.


J Jose Sanchez 08:55

Absolutely. Okay, so and this might seem obvious, but I think it's worth talking about it. You've kind of touched on this a little bit, where when people hear biosocial, they may think, you know, biological characteristics, things that we're born with, you know, through your genetics, DNA, whatever. But from the very brief conversation we've had so far, it sounds like there's more to it than that, right? Like, it's not just something that we might be born with, and even today's topic, you know, head injuries, we'll talk a little about neurological deficits. And, you know, you just mentioned lead exposure and substance abuse, but what are some other factors that we could fit under this biosocial umbrella?


J Jessica Mongilio 09:40

Yeah, there are a lot of different kind of risk factors that fit under biosocial. So, like substance use, there are so many things related to substance use and especially like addiction and how that changes how you think, how that changes your brain at literally like the neurons entry level that would fall really well into bio social. To some extent, I almost think that literally anything that talks about like development, like adolescent development is bio social because

developments a biological process, it just also happens to have a lot of like emotional and psychological and social kind of changes that accompany it as well. So obviously, like pubertal development fits in really well as a biosocial kind of feature that people talk about. There's a lot of work that's done on like mental health, which is biosocial. And even some people get really out there and talk about like nutrition, like relationships between childhood and prenatal nutrition and crime, which obviously also have a lot of connections to like disadvantage, and like spatial patterns. So there's really just such a large gambit of things that fall under the biosocial umbrella. Head injury, I've heard it described in conversations that I've had with Joe Shorts at Florida State as kind of the gateway to biosocial because head injury does fit so well. It's like this perfect example of what a biosocial risk factor kind of is and can be.

 Jose Sanchez 11:15


Okay, so speaking of head injuries, I think when we say head injury, most people might think of something like the real prevalent one right now is chronic traumatic encephalopathy. I think I just crushed that. I know it better as CTE.

 Jenn Tostlebe 11:34

And I through the whole term in there for him even though I was like, I don't know how to say that.

 Jose Sanchez 11:40

And I think most people have heard of CTE's because of a lot of what's been happening with the NFL and like football players, head injuries. But I think a lot when you say head injury, I think a lot of people would think of something like CTE, something that's pretty serious in nature. But does it all have to be like that serious? Or is that kind of like on the high end of the spectrum? Like is just kind of maybe bumping your head against the door, like enough to be considered a head injury that we might consider worth studying? So can you tell us more about like, when we say head injury, what exactly it is that we're talking about?


 Jessica Mongilio 12:17

Yeah, absolutely. So a CTE is definitely on a very severe end of the spectrum. CTE really only occurs after you've had like multiple repeated injuries over a long period of time. The average person that gets like a concussion, when they're 12, is not going to develop CTE; not going to happen. For the most part, when like we're talking about head injuries, we're talking about what's called a closed head injury, right. So like the bones of the skull are not broken. And so the damage that actually is occurring occurs when brain tissue basically hits the inside of your skull. And so that's what happens when people get concussions. Right, so a mild concussion from a kid playing high school football, that's a head injury. That's what we're talking about. When people have whiplash from car accidents, one of the problems is that their head goes forward and then back. So their brain is hitting the front and then the back of their skull. And that's a head injury. And so these are kind of the very run of the mill head injuries that I think are really important to study, because they're what the vast majority of people get, right?

We're not talking about Super severe head injuries where someone's like, unconscious for, you know, three hours. We're usually talking about closed head injuries, where someone is like, maybe a little dizzy for a little bit, maybe sees a couple of spots. And so a lot of those do happen in childhood and adolescence for a variety of reasons. But they can range in severity. Generally that severity is categorized based on like, if or how long a person is like dizzy, confused or unconscious for afterwards. But the vast majority of head injuries that people have are what's called mild head injuries, which means they're unconscious for less than 30 minutes, so maybe not at all. And they're usually just a bit dizzy and confused afterwards.

 Jose Sanchez 14:24

So TBI or traumatic brain injuries fit into this. Like is it synonymous with what we're talking about now? Or is it a little bit different?


 Jessica Mongilio 14:32

Yeah, so I tend to use the phrase head injury over traumatic brain injury, especially in this paper since I don't necessarily always have like a clinical kind of categorization for it. Traumatic Brain Injury tends to be used much more so when head injuries are like actively medically classified in their severity. But generally when I'm talking about like mild head injuries or mild concussions, those would also be called mild traumatic brain injuries.



Jenn Tostlebe 15:02

So you kind of started to hint at this actually, but how do we actually go about studying head injuries? Is it enough just to have someone kind of self report that like, yeah, one time when I was 12, I was blacked out for 30 seconds, or does it require more than that, up to a medical exam?

 Jessica Mongilio 15:20


Yeah. So I think that really depends on what your research question is and the level of analysis you're interested in? And maybe that's a cop out answer, I don't know. But for larger, like general population studies, maybe self report is enough, right? If you're just kind of interested in how head injury is associated with maybe larger behavioral change, like my study, self report seems to be fine. There's a lot of work in the clinical area, looking at head injuries, that is really interested in like specific tissue damage, and network region changes in kind of like neural communication after a head injury. And for those, you're going to want pretty detailed medical examinations, imaging of brains before and after head injuries. So you can get really, really detailed if that's where you want to be. But I also think that for kind of more broad questions, or ones that are associated with maybe like less minutia, behavioral change, self report is probably going to be good enough for a lot of what we're interested in.




Jenn Tostlebe 16:36

So if you're doing self report, are there certain questions that need to be asked for people? How


So if you're doing self-report, are there certain questions that need to be asked for people I'm just interested as far as people who are wanting to do work in this, like, are there specific things that people should be asking?


 Jessica Mongilio 16:50
In like survey questions?


 Jessica Mongilio 16:52
Yeah. So in the survey I use, it's a very basic question asked to parents. And it's basically just like, has your kid been injured since the last time we talked to you? And if so, how were they injured? And it's pretty straightforward for a lot of these, right? Like, if you can report or have your respondents say that they've been hit on the head and lost consciousness. That's a pretty good indication of a head injury, like that'll do it. So it can be very simple and very straightforward. I think it's definitely interesting to get sometimes more detailed questions about maybe like how it happened. If it was like sports related, in a car accident, there are some considerations about like, maybe, especially if a youth receives a head injury, if it was potentially, like due to victimization, those can be harder to kind of gauge or get from self-report sometimes just because the nature of like the context of the head injury, but for the most part, it seems like people are relatively willing to tell you that they had a concussion when they were 11. I mean, it certainly happens whenever anyone asks what I study, when I was working on this project for a while I would tell people that I was looking at childhood head injury. And I swear, almost everyone I told this to would immediately go, oh, I had like three concussions when I was a kid.

 Jenn Tostlebe 16:52
Yeah.

 Jenn Tostlebe 18:27
Tell you their whole life story about their head injuries?

 Jessica Mongilio 18:30
Yeah.


 Jenn Tostlebe 18:34
All right. So we're criminologists. Right? So what is kind of the overview of the relationship between a head injury and how it impacts your criminal behavior or delinquent behavior?

 Jessica Mongilio 18:48

Yeah, so at this point, I like to think it's pretty well known that the brain is responsible for behavior, and that the front of the brain is where most of the work is done that's associated with like, our executive functioning. So our planning or reasoning, it does a lot of kind of controlling some of the other parts of our brain that are important. And that just so happens to also be the part of the brain that gets damaged pretty easily in things like concussions. And so when those tissues are damaged, we expect their ability to function to be just at least a little bit disrupted. And for that reason, we tend to see just about anything from changes in like emotion regulation and reactivity. The changes in planning and reasoning skills, changes in impulsivity. And of course, a lot of those are also related to behavior and to criminal behavior. So if we see, after a head injury, increased like emotional outbursts of aggression, you know, that might be related more so to like violent behavior, or changes to impulsivity is very much so linked to criminal behavior. So it's pretty, like nuanced. And there are a lot of different ways that head injury to kind of work through different kind of neural patterns and different kind of executive functions to be related to crime. But overall, it tends to be just that head injuries damage our brain's ability to function a little bit. And that can sometimes lead to more criminal behavior.

 Jose Sanchez 20:24

Okay, so kind of building off of that. So we know that just because someone's around it, or exhibits a risk factor doesn't necessarily mean that they're going to commit crime, right. So just because someone may have what we consider low self-control doesn't necessarily mean that they're gonna commit crime, or just because they live in a disadvantaged neighborhood doesn't necessarily mean that they're going to engage in crime, right. But it elevates the risk. Right? So we talked about, like these correlations where they might be more likely to. How strong is the correlation between head injuries and crime? Like, is it a robust correlation? Or is that something that we're still trying to figure out?

 Jessica Mongilio 21:08

We're still trying to figure that out. So it seems like it works in a lot of or in the way that a lot of other things you mentioned do and that, like, it increases the likelihood that, you know, you might be criminal, or you might engage in delinquency, but it's not, you know, a firm sentence. There's also a pretty big gap between like clinical and criminological work. And so sometimes the clinical work almost exaggerates some of like the after effects or like the impacts of traumatic head injuries or brain injuries, because they're looking at such severe cases. And so in reality, the vast majority of people who get head injuries don't go on to commit serious crimes. And in fact, we might not really notice a big change in behavior. But there is a very large prevalence of offenders with head injury, right, far beyond the prevalence of the general population. So we definitely know there's something going on there; just not quite sure exactly how strong like the causal link is, if you will.



Jenn Tostlebe 22:23

Yeah, it's like that idea of not all people with head injuries commit crime, but all/most people who commit crime have head injuries.



Jessica Mongilio 22:32

Absolutely. The prevalence rates in offender populations are completely bonkers. Like you get up there to like 70%.



Jenn Tostlebe 22:41

Wow, that is pretty high.



Jessica Mongilio 22:43

And the general population prevalence hovers somewhere around like 10 percent-ish. 10 to 20 depending on who you ask.



Jenn Tostlebe 22:53

That's a drastic difference.



Jessica Mongilio 22:55

Absolutely drastic.



Jenn Tostlebe 22:57

Yeah. All right. So that seems like a good time for us to dive into your paper. So this paper was authored by our guest, Jessica. It's called "Childhood head injury as an acquired neuro-psychological risk factor for adolescent delinquency. It was published in the Journal of Research on Crime and Delinquency this year. 2022 for those who aren't listening in this year, I suppose. To give kind of a rundown, a quick summary of this paper. The purpose was to explore how head injuries in childhood impact the onset of delinquency in adolescence as an acquired neuro psychological deficit. Jessica draws on the UK Millennium cohort study, which has just over 13,000 people in it to explore head injury, other early life risk factors, and delinquency in adolescence. Is that a decent summary of your paper?



Jessica Mongilio 23:51


I definitely think so. Yeah.



Jenn Tostlebe 23:52

Okay. All right. So our first question then for you, which we ask everyone, is what was the

motivation behind this paper? Or what were some of the gaps that this paper was trying to fill?


 Jessica Mongilio 24:04

Yeah, well, the primary motivation was that I needed to write a master's thesis.



Jenn Tostlebe 24:10


That's a solid motivation. Yeah,

 Jessica Mongilio 24:12

You know, it really drove a lot of the work I did here. No, but this paper really did stem from my background in neuroscience, because it was kind of just this perfect melding of being able to bring kind of what I had learned in my undergrad to what I wanted to do and criminology, and it was just a very kind of like happy coincidence that my advisor, Dr. Jeremy Staff, had this data set that asked a question about head injury all throughout childhood. It was kind of just a perfect storm of things falling into place. Honestly. Looking at some of the research in criminology, I was really surprised by how much of like the clinical insight was missing, and then vice versa, you know, I would read more clinical studies of head injury and I was like, so confused by why, you know, these insights from criminology weren't being mentioned. And so some of the motivation that I kind of, you know, gained along the way, was to try and merge some of these fields a little bit. To try and take insights and recommendations from clinical literature and criminological literature, and mush them together. Additionally, like so much of the work in criminology is the samples of offender populations, which once again, is great because there's such a large prevalence of head injury among offender populations. But I was really curious about this head injury-crime connection before people reached adulthood or had contact with the criminal justice system. And at the time, there weren't really many other studies looking at like childhood and adolescent head injuries, there just wasn't a great sample for it. And so this paper, I think, really serves to kind of address that gap. And hopefully will spur some more research in that area as well.

 Jose Sanchez 26:04

Okay, so during the setup on this paper, you talked about neuropsychological deficits. And I mentioned this earlier in our discussion, but can you walk us through what exactly a neuropsychological deficit is?

 Jessica Mongilio 26:21

Absolutely. So this phrasing actually comes from Joe Shorts at Florida State, who also does some great research on head injury. An acquired neuropsychological deficit essentially refers to like any like psychological or neurological dysfunction, that is acquired through the course of one's life instead of say, like one they're born with, right. So those deficits or changes in functioning occur largely because of the environment. So like, something happens to an

individual and it changes their behavior going forward, largely on like this neuropsychological level. And so a head injury is really a great example of this, because it's not something people are born with. It's something that happens to them as a function of their environment. And it can change their behavior, it can change how they perceive the world and how they function moving forward.



Jenn Tostlebe 27:17

I really like this idea of kind of interdisciplinary work in pulling from multiple fields to bridge them together. I'm actually trying to do that in my dissertation. So we'll see how that goes. But you just mentioned this as well, this clinical camp versus the criminological camp, and how head injuries kind of fall in the middle of these. And so how do these two disciplines treat the topic of head injury? And do they ever converge? Or is that all on your shoulders right now?



Jessica Mongilio 27:47

So they've tended to treat head injuries pretty differently. But there's been more convergence lately. It's not just me. It's happening. It's happening in the clinical world. It's happening from other criminologists. So there's a small force of us, we're bringing it all together. But for one, the samples that are used in these two fields just tend to be entirely different, right? Clinical studies of head injuries usually have smaller samples. And they're usually the people that come in to get treated for head injuries, and so they tend to be more severe. And then, when those clinical studies are kind of occurring, they tend to be pretty heavily focused on using clinical guidelines and assessments to gauge like severity, behavioral outcomes, like symptoms. They get very, very like nitpicky at this point. On the other hand, like criminologists tend to use like larger scale surveys, very few of which are explicitly focused on an individual's experience of head injury. So a lot of our information about like severity, treatment, behavioral after effects, that can all be pretty limited. So there's definitely like just very different scales of information that we're working with. And that changes very much like, how we talked about the head injuries, and also what we can say about them. And so that is probably the major difference between the two. But there is a lot of work that's like starting to converge them. Mine is just one of them. And it's very exciting to see kind of clinical researchers step into the world of like, what behavioral things do people do after their head injuries besides just like, be dizzy? And criminologists just kind of going into like, well, what if we do gauge severity? What does that change? So is happening, which is very exciting.



Jenn Tostlebe 29:43

Yeah. Cool.





Jose Sanchez 29:44


Yeah. Must be nice to have some reinforcements.





Jessica Monailio 29:48


 Jessica Mongilio 29:19
Absolutely. I mean, these admittedly are also scholars that come before me. Absolutely. And probably some of them that have absolutely no idea who I am, which is just how it goes, but...


 Jenn Tostlebe 30:01
They will.


 Jose Sanchez 30:01
They will. You know, that's why you're here. We're getting you out there.

 Jessica Mongilio 30:08
Exactly.

 Jose Sanchez 30:10
Not like we're like super famous yet, but we're getting there.

 Jessica Mongilio 30:16
You'll get there too.

 Jose Sanchez 30:18
So speaking, theoretically, how do head injuries fall under this idea of the developmental and life course criminology lens? So what we're curious is what are the mechanisms between obtaining a head injury and then the onset of criminal or delinquent behavior?

 Jessica Mongilio 30:40
Yeah. So thinking about like mechanisms really goes into kind of all of the different ways that head injuries can kind of change how your brain functions. So probably one of the biggest ones, and the easiest, I think, to use as an example is impulsivity. Right. And especially when thinking about adolescence and childhood, we already know that there's so much research on, you know, how kids and adolescents are impulsive, and how that changes, you know, as they make their way through adolescence and into adulthood. And essentially, the idea is that if you like, you throw a head injury in there, maybe that's gonna throw off the development, right, maybe that developmental trajectory of becoming less impulsive, is just going to go completely awry. And instead, adolescents might stay impulsive, or they might become more impulsive, which then could lead to increases in criminal or delinquent behavior. So I think having head injury, as a focus in like this very rocky developmental time, where a lot of things are already changing,

kind of as far as the brain goes, is really interesting. It's also gets a little bit convoluted, not gonna lie. But it is something that could very much so affect these like developmental trajectories that we see and that are a lot of interest to criminologists.



Jenn Tostlebe 32:08

Yeah, it seems like a lot going on at the same time developmentally and so disentangling them, I'm sure it's a challenge.



Jessica Mongilio 32:17

Yes, I think that's one of the features of biosocial criminology is that it's unnecessarily convoluted at times.



Jose Sanchez 32:26

So and, you know, we're gonna get to your results in a few minutes. But one of the things that you talked about it in this paper is head injuries interacting with other early life risk factors. Can you give us some examples of potential early life risk factors that may predict or contribute to head injury?



Jessica Mongilio 32:46

Absolutely. So there are tons. In fact, one of the difficulties of this paper was that so many of the early life risk factors for head injury are also the same early life risk factors for delinquency and criminal behavior. Right. So things that are related very heavily to like your childhood environment, like prenatal, alcohol, nicotine, lead exposure, parental attachment, childhood victimization, like your self control when you're little, both of those things or all of those things predict both head injury and delinquency. So once again, another convoluted relationship to try and parse apart there. But one of the interesting things is just that those risk factors could lead to a head injury, which then might separately, you know, increase the risk above and beyond those risk factors by themselves. But yeah, it definitely does get a little bit convoluted because there's so much overlap and risk factors.



Jenn Tostlebe 33:48

Alright so, we're about to jump into your results. But just you mentioned, the prevalence of head injury in offender populations, the prevalence in the general population. And so as far as your data goes, using this Millennium Cohort study, how common was head injury in this sample?



Jessica Mongilio 34:10

Yeah, so, head injuries, in my sample was actually a little bit more common than I thought they

would be. So just for reference, the sample is about like 13,000 youth in the UK, they were born around the year 2000. And so I used the head injuries that they had obtained between ages three and 11 for my sample, and it actually was relatively high for a general population. The head injury prevalence was around like 27%. So definitely on the higher end of what we would expect to see. And to be fair, I think some of that is just because they are adolescents and that's one, like childhood and adolescence is one of the like periods of greatest risk for head injuries. Like, I think one of the greatest periods for prevalence of head injuries is like actually age zero to four, which is a horrifying age group for there to be such high prevalence of head injuries. So,



Jenn Tostlebe 35:10

Jose can tell you something about that I'm sure, with his kid.



Jose Sanchez 35:16

He just turned 21 months. And a few months ago, he like climbed out of his crib and fell. And I'm like, uhhhh, I don't know what's gonna come out of this.



Jessica Mongilio 35:26

Well, hopefully not some delinquency.



Jose Sanchez 35:28

Hopefully.



Jessica Mongilio 35:30

But yeah, so a little bit on the high side for prevalence rates, but not anything too concerning.



Jose Sanchez 35:36

Yeah. Okay. Let's get to the moment that everyone's been waiting for and talk about your results. So you were first interested in whether certain early life risk factors could predict whether a child would experience a head injury or an orthopedic injury? So let's start there. First, what's an orthopedic injury?



Jessica Mongilio 36:01

Yeah, so this is one of the things that actually comes from clinical literature, this is a recommendation from a lot of clinical studies of head injury. And that is to use people with orthopedic injuries, which is basically just any other bodily injury, right. So like a broken bone is


an orthopedic injury. But to use those people as a control group for individuals with head injuries, rather than uninjured individuals. And the reasoning for this is just something that we've already kind of touched on. And that's it, there are so many early life risk factors that predict just getting injured as a kid. And so there are likely and my results largely support this, like pretty big differences in some of these early life risk factors between kids that have head injuries and kids that are just completely uninjured. And so that comparison group would kind of artificially inflate some of the results. But using the orthopedic injury group is supposed to kind of control for some of those just inherently and should kind of temper the results to be a little bit more realistic and to account for a lot of those early life risk factors that might be unmeasured, that just lead kids to do risky things and get injured, whether it's, you know, a bonk on the head or a broken bone.

 Jose Sanchez 37:24

Great. Yeah, I think when I first read orthopedic injury, it kind of threw me a little bit because I've only ever really heard of like orthopedic insoles for like people's shoes. So at first, I was...

 Jenn Tostlebe 37:38


Not the same thing! *laughter*

 Jessica Mongilio 37:40

Slightly different.

 Jose Sanchez 37:41

Yeah. So, so you know, for the other Jose's in the world, I hope that's a little clarification. Okay, so can you tell us you know, what you were expecting to find? And then what you actually found for early risk factors predicting injury status?

 Jessica Mongilio 38:02

Yeah. So I was really hoping that I would kind of be able to support this use of an orthopedic injury group. I was really hoping to find that there were going to be so many risk factors that predicted like head injury and orthopedic injury that just vastly differed for the kids that remained uninjured throughout childhood. And to some extent, I definitely did, right. So there are several risk factors like prenatal nicotine exposure, prenatal alcohol exposure, low self control, conduct problems when you're young, that increase the likelihood that an individual will sustain a head injury, compared to like, remaining uninjured, right. So we do see that there are differences between the kids that go on to get head injuries and the kids that stay uninjured. And similarly, and really great for what I was hoping to accomplish here, there are much fewer risk factors that distinguish those who get head injuries from those who get kind of these orthopedic or other bodily injuries. I think the big ones are like gender, conduct problems, and kind of neurological deficits present at birth. And so there were much fewer risk factors

that would distinguish these individuals and the ones that did, obviously were controlled for and all of these models. So it really indicated to me that this was going to work as a pretty solid, like control group for my head injury individuals. And also just that, like, head injuries are not randomly distributed. Right? Like there are differences for the kids who get head injuries than for the ones who don't, that was another kind of big takeaway from this, even if it was kind of only a step that I had to take to get to the next point.



Jenn Tostlebe 39:47

Alright, so on this next point, you examined whether childhood head injury was a significant predictor of the onset as well as the type or typology of adolescent delinquency, while also controlling for some of these injury related factors that could kind of confuse this relationship. What did you end up finding regarding injury status predicting delinquency?



Jessica Mongilio 40:14

Yeah, so generally, I find that childhood head injuries are associated with delinquency in adolescence. That's the big takeaway here. Specifically, having these childhood head injuries increases the odds of starting delinquency early on in adolescence. So at age 11, which is pretty early to start being delinquent, even when compared to those kids that have orthopedic injuries, so that share a lot of the same risk factors with them. And similarly, it's associated with odds of like being delinquent at age 14, as well as kind of persisting in your delinquency from age 11 to 14, right. So a lot of these kids that start at 11, don't stop. And the like having a head injury makes it much more likely that they're going to continue their delinquent behavior over time, which in future work and once kind of more waves of this dataset are released, I really hope to extend that to like trajectories and see how head injuries are related to like trajectories of delinquent behavior. It's a little too early on for that, the kids are too young, I can't artificially age them up. But we'll get there eventually. And then the last thing was that the kind of having a childhood head injury was related to just being engaged in more delinquent behavior at age 14. And this is all compared to those orthopedic injury kids that have very similar risk factors. So it did appear from these results, that head injuries were having a difference in predicting these kids' future delinquent behaviors. And that's pretty much the big takeaway, they really just point to head injuries as a predictor, and potential exacerbator I guess, of delinquent behavior.



Jenn Tostlebe 41:55

Cool, what you were hoping to find, right?



Jessica Mongilio 41:58


Exactly it worked out so well.



Jenn Tostlebe 42:01

On the size to find, I guess, maybe hoping it's not the right word, but

Or theorizing to find, I guess, maybe hoping it's not the right word, but


 Jessica Mongilio 42:05

Right. It's one of those horrible things where it's like, Man, I really hope these kids become delinquent after they have head injuries. I also hope they're doing okay.



Jenn Tostlebe 42:17

As a good person, I hope the best for you, but.

 Jessica Mongilio 42:20


But as a researcher, I hope you're doing crime.

 Jose Sanchez 42:23

I really need this master's degree... so...

 Jose Sanchez 42:28

Okay, so one of the things that you did in this study, was there were some comparisons between racial/ethnic groups as well as male and females. Did you see any differences between these groups between head injury and delinquency?

 Jessica Mongilio 42:42

Not really. So there's definitely some differences in racial or ethnic group as a predictor of injury status, just that there were some like racial and ethnic groups that had like much lower odds of having head injuries. And I speculate that that might be due to like parental supervision, for instance. But as far as like their relationship to delinquency and head injury, I don't really think there was anything, you know, super significant happening. The differences between males and females weren't really significant. So it seemed to be a pretty general trend. And that's something that makes a lot of sense because head injuries shouldn't necessarily change all that much between different racial and ethnic groups and different genders on kind of a biological level.



Jenn Tostlebe 43:36

Right. Okay. All right. So we also always like to ask about implications of your results. So given to kind of recap what you said, head injury was important for early and adolescent onset delinquency, as well as kind of this idea of prolonged delinquent behaviors between childhood

and adolescence. What are the implications of these results, kind of thinking about research and theory, but also policy and practice?

J

Jessica Mongilio 44:05

Yeah, so the implications for policy and practice, I like to think are pretty straightforward, right? The prevention of head injuries is really important for a number of reasons, you know, not just for delinquency, but for the whole host of kind of different behavioral outcomes that, especially clinical literature, likes to look at after head injuries. And so it sounds like silly every time I say it, but really, the findings just confirmed like head injuries aren't good! We should try to like not let kids have them, or put them in situations where they're going to have them, but it's, it's definitely really important, I think. And then from kind of a clinical lens, taking this in a different direction, like the current treatments that we have for head injury are pretty limited. Like we don't really have a great way to mitigate head injuries. And a lot of people don't even pursue treatment for concussions. And so we kind of leaving this injury, essentially, largely untreated. And so from a clinical standpoint, I think kind of like the mitigation of damage from a head injury and treatment is really important. Obviously, that's not something I'm posed to do, but very keen to keep an eye out on some of the clinical literature and see what happens in that area.

J

Jessica Mongilio 45:23

And then as far as future research and theory goes, I really think my study only scratches the surface on the relationship between head injury and delinquency. There are so many possible mechanisms to explore, that could be potentially underscoring this relationship. There's also possible like moderators in like the context of injury, right? It's like how an injury occurs, is it a traumatic injury? Like is the actual context in which it occurs traumatic, and how does that change things? Or even the timing of the injury, right injuries that occur early in childhood might be different than injuries that occur later in childhood. So there's so much more, I think, to really explore here, and I'm very excited for myself and for other people to kind of jump on board and work on it. I think it'll definitely take some time. But there's, there's so much left. But it really I think adds to kind of just like the wealth that biosocial criminology can really offer to the field, and kind of the additional like, nuance and information it can bring to like some of our traditional theories like lifecourse and development theories. So really excited for the future.



Jenn Tostlebe 46:12

And I love how like perfectly situated you are to be exploring this. Because sometimes it seems like some people involved in biosocial crim, just don't really have a lot of the background training in the biological literature. So it's really cool seeing someone who comes from that field start to apply it, who knows, you know, this stuff from a research standpoint. So I'm excited for you, too.

J

Jessica Mongilio 47:06

Thank you. Yeah, it's definitely something I've made like a concerted effort to do like, take classes outside the department and have advisors that are in human development. It's

classes outside the department and have advisors that are in human development. It's definitely an effort.



Jose Sanchez 47:20

I'm pretty sure this is not what you meant. But this is what I heard, like, I'm about to go on Amazon and just buy like one of these, like, foam padded helmets for my kid. Like, you're not leaving the house without this on, because



Jenn Tostlebe 47:36

I feel like that can do some other kinds of harms to your kid.



Jessica Mongilio 47:41

Jose, the social harms might be a bit worse.



Jose Sanchez 47:46

Yeah, I'm pretty sure that they're not recommended. But yeah, it's just funny just because like, as a parent, like, you don't want your kid to, you know, take a head injury. But, and I've not been, I'm guilty of this, where before I had my kid, what are those parents doing? Like, you should always be watching your kid, like, don't be so irresponsible. But now that I'm a parent, like it can happen so quickly, like you just get distracted for a split second, you know, sometimes, like, my dogs will be doing something that they're not supposed to be doing. And like I turned to tell them to knock it off. And next thing I know my kids about to jump off the dining table.



Jessica Mongilio 48:26

They're wily little creatures.



Jose Sanchez 48:28

Yeah, definitely. So I was just kidding, don't put a helmet on your kid unless the research backs it up. I don't know.



Jenn Tostlebe 48:35

Or the doctor tells you to.



Jose Sanchez 48:38



JOSE SANCHEZ 49:38

Yeah, exactly. Okay. Is there anything else you'd like to add. Anything we didn't touch on that you think might be worth discussing?



Jessica Mongilio 48:46

I don't think so. I think we've pretty much covered the whole gambit here. I mean, once again, I just love to thank you guys for this opportunity to be a guest and talk about my work on your podcast. Really excited to share it with the world.



Jenn Tostlebe 49:00

Yeah, absolutely. Thank you for coming on and being a guest on here. I know. It could be kind of intimidating, especially as a student. I don't know. You seem very chill and cool talking to people though. So I'm jealous if that is the case, but is there anything else that you want to plug anything that you're working on? Or if you're gonna be on the job market soon or anything like that?



Jessica Mongilio 49:24

Sure. I mean, I am in the dissertation phase of my path. I will be I guess, selectively maybe on the job market this fall. We'll see. But, I mean, people can find me on Twitter if they want. I don't know my handle off the top of my head. That'd probably be a good thing to know.



Jose Sanchez 49:43

It's fine, we'll put it in the description.



Jessica Mongilio 49:47

@JMongilio. That makes sense.



Jenn Tostlebe 49:48

Okay, yep.



Jessica Mongilio 49:49

But yeah, people are more than welcome to find me there to reach out. I'm happy to talk about really anything that has to do with adolescent decision making. I'm taking some weird twists and turns throughout the dissertation stuff. So we're getting into some crazy interdisciplinary work.



Jenn Tostlebe 50:06

That's awesome. Sounds. Yeah, sounds really cool.



Jessica Mongilio 50:10

It will be convoluted. That's the key word.



Jenn Tostlebe 50:14

All right. Well, thank you again so much. And it was great meeting you. Hopefully we can get together at ASC if you go to ASC or something like that.



Jessica Mongilio 50:23

Absolutely.



Jessica Mongilio 50:25

All right.



Jessica Mongilio 50:26

We'll see you there.



Jenn Tostlebe 50:27

See ya! Thank you.



Jenn Tostlebe 50:28

Hey, thanks for listening!



Jose Sanchez 50:31

Don't forget to leave us a review on Apple podcasts or iTunes. Or let us know what you think of the episode by leaving us a comment on our website, thecriminologyacademy.com.



Jenn Tostlebe 50:41

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Jose Sanchez 50:52

Or email us at thecrimacademy@gmail.com. See you next time!



Jenn Tostlebe 50:57

See you next time!