

Rocky Mountain Short Takes on Suicide Prevention: PTSD and the ICU Nurse - Forming Resiliency

Adam Hoffberg: Hi everybody I'm Adam Hoffberg thanks for joining us for the Rocky Mountain MIRECC short takes on suicide prevention podcast, for this episode we'll be chatting with Dr. Meredith Mealer. Dr. Mealer is a researcher at the Rocky Mountain MIRECC and assistant professor with the Department of Physical Medicine and Rehabilitation over at the University of Colorado Anschutz medical campus and today were going to be learning more about resilience, burnout and PTSD among providers. Thanks for joining us.

Meredith Mealer: Thanks for having me.

Adam: Great so as we always do let's start off with just a little bit of background on yourself an introduction and really how you got to this line of research?

Meredith: Sure, I have been here the University of Colorado for about 10 years before that I was at Emory University in Atlanta Georgia. I started off as an intensive care unit nurse which is why this is interesting to me. First started looking at the prevalence of post-traumatic stress disorder, anxiety and depression in ICU nurses because I was seeing ICU nurses leaving the bedside and I would ask them "why are you leaving?" They would tell me I was having nightmares or I was really anxious and I just can't be in the ICU any more. That made me wonder what's going on here and why are we losing all these good nurses. That kind of pushed me in the direction of the psychological health of care for healthcare providers.

Adam: Thank you for explaining that, I didn't know you were an ICU nurse in the past as we talk more research it makes a lot of sense that this is a population of interest that you are working with. It also makes sense that these are very challenging work environments and these nurses are caring for very difficult challenging cases. Let's now talk about what you found out about the PTSD and burnout among these providers, can you tell us a little bit about your work in that area?

Meredith: I've done three sort of prevalence studies, one was done at Emory University and involved the Emory University affiliated hospital, which is similar to the University of Colorado system. I moved out to Colorado in 2006 and replicated that study at the University of Colorado, not only with ICU nurses but also in all the different specialties in the hospital. I also included the Children's Hospital to see if there's a difference between adult and pediatric healthcare providers. Then based on results of those two studies I did a national study to see if this could be generalizable. Which I thought it would be. Of course we needed to get that data to support that.

So what we found was really interesting because it was across the board pretty much the same prevalence rates. We are seeing a prevalence of PTSD symptoms in about 25 to 28% of ICU nurses. If you're aware 8 to 10% of the general population sometime in

their lifetime experience a traumatic event and have PTSD symptoms. This is way above what you would see in the general population. It is also similar to what we're seeing with those returning from the wars in Afghanistan and Iraq. So the prevalence of symptoms were anywhere between 25 and 28%.

We added a diagnostic tool which is called the post-traumatic diagnostic scale which includes all the elements to meet the DSM-V criteria for diagnosis of PTSD and the prevalence of the diagnosis was about 21 to 22%. Again very high. Anxiety was high across the board, we were seeing anxiety levels anywhere between 60 and 80% and depression, fluctuated by region. With depression, the prevalence of depression in the South was a little higher than it was here in Colorado and nationally it was kind of in between there. So what we found was PTSD was prevalent, it was a common problem in these ICU healthcare professionals and something that I wanted to work with and try to find interventions to help mitigate some symptoms.

Adam: Help me understand PTSD among these ICU nurses or other providers a little bit more is this the same PTSD as our soldiers are experiencing after a war event, break it down for us.

Meredith: Sure, there are two different types of traumatic events that can lend itself or trigger PTSD. One is direct exposure to a traumatic event the other is an indirect exposure. For our soldiers who are at war that are experiencing bomb blasts or getting shot at what those are direct events; it's happening to their person. Whereas an indirect exposure to a traumatic event involves witnessing someone die or witnessing something bad happening to someone else and again is this the same response in that they respond to that traumatic event with fear and helplessness and horror. The same as between the direct and indirect is just the actual experience is different.

Adam: I see we can imagine that our ICU nurses are indirectly experiencing many traumatic events with patients at serious injuries and critical condition.

Meredith: Absolutely, I mean there's it's a cumulative exposure and something that they're involved with 12 hours a day, sometimes three or four days a week. These patients can be very sick, on life support, they can be bleeding, they could be terminal patients where nurses are grappling with whether there actually providing care or doing harm to the patient trying to keep them alive. So I think those experiences are quite traumatic for them.

Adam: That's very helpful, obviously we want to do something about it or help bolster resiliency and what is resiliency?

Meredith: In the simplest form, resiliency is the ability to bounce back after adversity. There are a couple different schools of thought, some people think that resilience is an innate characteristic. But others think that it's a modifiable or behavioral characteristic that can be learned. And so that's what I'm building my research off of, is that it's a modifiable characteristic and can be learned.

Adam: OK, so tell us some of your next steps in terms of work that you've done is pursue this psychological resilience training?

Meredith: Sure, so as part of the national prevalence study that I did there is a quantitative and qualitative piece to it. The quantitative was just looking at what the prevalence was of these disorders and then how resilience may be mitigated by some of the symptoms.

The second piece was the qualitative piece where I divided the sample into two cohorts so one who had PTSD, met the diagnostic criteria for PTSD and those who score it is highly resilient on the resilient scale. And I interviewed both groups and what I want to know is it what is it that keeps them at the bedside in the resilient group. What coping mechanisms do you use so that you can go back every day and how do you recharge or refuel. The same questions I asked the PTSD group and what I found was that they were hugely different. The coping mechanism the PTSD group tended to cling onto maladaptive coping mechanisms. Whereas the resilient group had very good resilient coping mechanisms. Based on the information that I learned from this highly resilient nurses I developed pilot interventions. I used in my intervention, I used on those coping mechanisms that those nurses describe.

Adam: Tell us a little more about what were some of those coping mechanisms?

Meredith: Sure I conducted a pilot study; a pilot resilience intervention. It was a randomized controlled trial, very small 13 subjects were in the intervention group and 14 were in the control group. For the intervention group, these nurses came in and they had a two-day seminar where we introduce the concept of resilience. We also introduced each of the interventions that they would be exposed to over a 12 week period of time.

Those interventions were written exposure therapy so there's a lot of literature not a lot but there is literature about using writing or journaling for post-traumatic stress disorder. Similar to exposure therapy in that you're having patient talk or write about their traumatic event.

We had event triggered counseling or cognitive behavioral therapy; similar to what you see in the police, law enforcement field. If police officer shot someone they would have to go to a mandatory counseling session which took the stigma away from them, didn't differentiate between who actually needed to go get help and who didn't. We used a event triggered counseling session model and had specific criteria outlined so if your patient died, if you performed CPR, if you had a patient with massive traumatic injuries. Things like that, they would go and have a session with one of our counselors. So that was a second intervention.

The third was exercise, so in Colorado that's not hard. A lot of people do exercise but we had them do at least 30 minutes of aerobic exercise three times a week. We

protocolized what that meant. We listed some options that they could choose from. Since again we are in Colorado and people tend to exercise we also had the control group just write down how much they exercise just to see if there was a difference based on the intervention.

And then finally, was mindfulness-based stress reduction. So during the two-day seminar we had someone from the center of courageous living come in and walk through on sitting meditation and the body scan. Those are two of the MBSR techniques that we used and then they were given guided CDs that they took home with them and they were asked to perform MBSR activities for 15 to 20 minutes three times a week.

The intervention was quite complex. Again this is a pilot study, we just wanted to see if it feasible, if it acceptable to the nurses. What we found is, number one yes, it was feasible. We had a completion rate of anywhere from 89 to 100% with those activities. It was acceptable, we sent out some satisfaction surveys in each of the interventions and they were completely satisfied. They didn't think it was too much of a time consumer for them and they were excited that we were doing something to help the helpers. We had fantastic results.

Adam: Talk a little bit more about this multimodal aspect and why that's a strength of the intervention?

Meredith: I still feel that's it's a strength for the reason that everyone's an individual and everyone has likes and dislikes. If I only did an intervention that included writing you may not like writing and I love writing. The idea behind multimodal was that we could reach as many of these nurses as possible and at least give them something that could provide relief from the symptoms.

Adam: This expressive writing concept was also actually new to me and maybe some of our listeners as well, could you tell us a little bit more about what that involved?

Meredith: Sure, so written exposure therapy is essentially where you expose a person to the trauma through writing. There are traumatic events in the work environment so we picked some as writing prompts. We gave choices of three different types of prompts that they can write on for that week and they were asked for 30 minutes to write about that trauma. Then we had integrative health coaches that would read those writing examples and would provide some feedback. Like please explore this or write a bit more about this or tell me more about this. Maybe put some reframing and flexibility in there to help them when they experience something like that in the future.

Adam: That sounds great how is all this data collected?

Meredith: I think what was what was truly unique about the study was we wanted to be cognizant of the fact that this was sensitive information. We worked with these people being my co-investigator and I both are in and out of the ICU we didn't want them to feel worried about what they were writing. Or that we would see them in the hallway and say

oh you only did half of your exercises or that we looked at them differently because they were struggling and someone else wasn't.

So what we did used an honest broker. An Honest broker is someone who is not affiliated with the study. You typically have to pay an honest broker and what they essentially do is de-identify data for you. When these nurses signed a consent form, I sent the consent form over to the honest broker and she assigned a study ID. She was the only who had the link between the name and the study ID. We then created a REDCap Database and when the participant went into the Database they only used their study ID. So there is no PHI identifiers in that database so that when I went and looked at it was completely de-identified.

It secures the data RECap is a secure encrypted database environment to begin with which is great but it also completely de-identified. There is no way of putting the names back to the study IDs as this was sensitive and potentially stigmatizing information.

Adam: As you mentioned the results from this initial trial was positive. It was acceptable and feasible, so what are next steps from here?

Meredith: It was acceptable feasible that was the goal but we did of course look at some of the statistics. So did this intervention decrease PTSD diagnoses, anxiety and depression? Did it increase resilience?

This was a resilience intervention. So at entry, none of these nurses could be resilient based on the CD risk which is the Connor Davidson resilient scale. Based on the original work on that instrument a score of about 82 is considered resilient and one standard deviation above that so score, greater than 92 is considered highly resilient.

We didn't want people to already have resilience. These were people who were not resilient that were entered into the study. What we found is that in the intervention group, the intervention decreased PTSD and depression and anxiety and increased resilience. But what was interesting, is that in the control group resilient scores also increased. PTSD scores didn't decrease nor did depression or anxiety decrease.

So why did that happen? This was a control group and we did nothing for this group other than consent them and asked them to write down how much exercise they did and they filled out some of our baseline surveys. What I think happened is there was some type of treatment contamination along the way. It could happen a couple different ways. One, these were nurses who all worked in the same hospital sometimes in the same unit together. It could happen that two that were in the intervention and one in the control group working on the same shift. They could have talked about it even though we asked them not to talk about. But if they're all excited some may have share some of that.

And the other is the control group signed a consent form in which we described exactly what the intervention was going to be and they could've seen that and said hey and I

think I'm gonna start exercising more or I think I'll start journaling.

So we are not sure why that happened but I think moving forward with future research we really need to be mindful of treatment contamination. I just recently got an R-34 funded for a larger controlled trial for a resilience intervention in ICU nurses so as part of the design of the study we will do a stepped wedge ,clustered randomization and that will hopefully eliminate some of that treatment contamination.

Adam: Thank you so stepped wedge cluster randomization and I know that we have some folks listening that may be more on the clinical side or even researchers may not be as familiar with that study design really curious what that involves?

Meredith: The pilot study was just at the University Hospital. There wasn't much that we could do. But with this R-34 we've got nine different hospitals in the Denver Metro area that are participating. The cluster is the hospital so they are going to be randomized by the hospital. They are all going to be randomized to the intervention.

The stepped wedge piece of it allows hospitals to serve as their own controls. So the intervention is five months long. Hospital one will be getting an intervention for five months while hospitals two through nine are serving as controls for themselves. We will be no asking these different psychological measures when the five month intervention is over with hospital one hospital, then hospital two will start the intervention.

And we'll be able to start collecting post maintenance survey responses treatment effect responses on the hospitals that have already been treating interventions. That's the stepped wedge piece. The good thing about stepped wedge is they all get the intervention and they all get portions of the control. You don't have to have a bigger study to actually study a control group.

Adam: That's great we certainly look forward to hearing more. How long is the study can take to get all 10 hospitals through the intervention?

Meredith: It's a three-year study the first year we got some focus groups to better design the actual rolling out of the interventions of feasibility issues and then second and third year will be the clinical trial getting the nurses recruited and then randomizing their cohorts.

Adam: As you mentioned you are still researching, there is still a lot to learn. From what we know so far, what sort of advice or recommendations could you give to your providers that are maybe in the ICU but maybe just providers that are in mental health or anywhere else for that matter that have a stressful work environment. What are some skills or coping mechanisms that they can start to use?

Meredith: I think as a whole health care providers tend to take care of themselves last. When they should be putting themselves first so that they can be the best that they can be at the bedside with the patient. I think recognizing that you're having issues with your

environment is important. Then once you've recognized that, either self employing some of these coping mechanisms or actually getting professional help to deal with some of some of the issues that may be coming up.

I think exercise is good, I think mindfulness is a great activity that you don't need to pay admission or membership fees for. Things like that so it is a fairly inexpensive thing that you could do it at any point in your day. If you like journaling I think journaling of course could be helpful. So there are a wide variety of coping mechanisms that healthcare providers can use without getting outside help from mental health providers.

Adam: Well thank you. This has been really interesting and any sort of final thoughts for today?

Meredith: So my final thought, is that even though this is in the ICU nursing population, resilience is something that everyone could benefit from. I think this can be extrapolated to many different populations. My hope is to start to explore this in different groups so ICU physicians, mental health providers with the same trajectory that I do with the ICU nurses and hopefully bring some resilient measures into their careers as well.

Adam: Fantastic, well everybody we appreciate you for listening and you can learn more about Dr. Mealer and her work by clicking on some of the links accompanying the podcast. Don't forget to reach out to us if you have any comments or questions about Meredith's work and also please take a moment to subscribe to the podcast and rate it and share with your colleagues. Until next time this has been the short takes on suicide prevention podcast.