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Session: Evidence-based interventions for suicide prevention among veterans with TBI

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Dr. Lisa Brenner: Thank you so much and thanks for this opportunity today. I am excited to talk some about some research that actually has not been shared before. And as this event was being introduced, I realized that there actually is some data in here that has not been published yet so I know that folks will be mindful of that when they download these. I see the Rocky Mountain MIRECC is tweeting this I will beg the tweeters not to actually postdate this, it has not been published at all I will tell you what that is.

I say everything I am going to say today is me, non the VA but that this work has been very much supported by the VA and the Department of Defense and I am really, really grateful for their support and also the collaborators that worked on all these projects I am going to talk about today.

I always really like to talk about why I do what I do and sometimes when you are writing papers or writing grants it is easy to get distracted from the fact that we are actually trying to help Veterans have better lives. This is a quote from a Veteran that was taken during a qualitative study that we did and he said “I think it took a while before I realized and then when I started to think about things and realized I was going to be like this for the rest of my life”, Like this for the rest of his life was having severe TBI “it gives me a really down feeling and it makes me think —why should I be around like this for the rest of my life?” To me this is really the challenge to us – how can we help our Veterans and really all those living with moderate to severe TBI or any level of severity of TBI actually have lives that are worth living.

I am sure that most people on this call are very much aware of the definition of TBI but I thought I would just for making sure we are all on the same page a TBI is actually a historic event, an injury event. The definition of TBI all you have to have is the orange here - a bolt or jolt to the head – so some kind of injury that disrupts brain functioning. Obviously not all blows to the heads or injuries are the same and the severity can range from “mild” which is really just a brief change in mental status or consciousness this is like having your bell rung to “severe” which is an extended period of unconsciousness or amnesia. Part of our challenge is when we talk about TBI when we write about TBI sometimes we do not always do maybe a sufficient job in clarifying the severity level of what we are talking about. So I just wanted to be really clear today that for the most part I am going to be talking about severe TBI and will talk about that in a second.

For the young investigators out there, I guess what I want to say is – if you are looking for an area of research you want to look for an area that has a figure that looks like this. And as you can see very early on, and by very early on I mean 1985, which is not particularly that early, there was very, very little work being done on the work around TBI and suicide. So if you started doing a significant amount of work you get to be a world expert in this right away. So I highly recommend finding those places in between and I see this as being a work that is in between mental health and rehab. Finding those in between spaces where there is a lot of room to do good and important work and can certainly help your career as it has helped mine and I am very grateful for that.

What we have here is the overlay and I think Joe Haggis [ph] put these together for me, so thank you Joe. You have this TBI Suicide the work that has been done and then somewhat similar the work around TBI suicide in the military. Then of course, this has increased quite a bit although you can see that there is still much more work that needs to be done. If you make this kind of graph for let us say substance abuse and depression or substance abuse and suicide you will be seeing numbers on the left hand side that are like in the thousands and we are still really at 20/40/60/80/100. Lots more work to be done in this area obviously.

As I said before today, I am going to be talking about more moderate to severe TBI. For those of you that need a quick reminder - severity of TBI is based upon the disruption of brain function or injury to the brain, not on severity of symptoms. So you can have a mild TBI, which would mean that you have a brief loss of consciousness or an altered mental status for up to twenty-four hours but have very severe headaches that would still be a mild TBI with severe symptoms. Today I will be talking more about those with moderate to severe TBI that is a prolonged period of loss of consciousness, a prolonged period that you are not laying down your memories. And we generally would think that particularly with the severe TBI but even with moderate that these would be the kinds of injuries that would disrupt functioning in a more subtenant way over time. When I say that I know that is probably controversial, I am not meaning to be controversial, and certainly, I am not talking about mild TBI with co-occurring PTSD. I am not talking about multiple mild TBI, I am just talking about mild TBI or \_\_\_\_\_ [00:05:23] TBI when I say that.

To get things rolling, we really wanted to look in the literature and see what is out there. So we did a systematic review, this review was led by our colleague Dr. Veraney [ph] and we looked at all of the literature that was published between 2007 and 2012 around suicide and TBI. I am sure many of you are football fans and read the newspaper and have seen many articles out there about the length between suicide and TBI particularly in football players. I just wanted to show you what actually is out there for us to base that data on. In terms of looking at the studies on TBI and suicide there is a total of five and this is probably our best body of evidence. We have one study that has low risk of bias and that was our study that was done in the Department of Veterans Affairs and I will talk a bit more. I should say I did not rate my own studies because that would not quite be right. And we do have though between these five studies I would say a significant amount of evidence to really help us feel pretty certain that this link between TBI and suicide is for real. Part of the reason this research is so hard to do you will see that this took eight million records to be able to do it because we needed to find a cohort of individuals over time, those who have a history of TBI and those who have a history of suicide death. Although every suicide death is definitely something we are trying to prevent, it is still a low based rate behavior so that you need a very large population to be able to do this kind of study when you are looking for potentially two somewhat low based rate behaviors particularly when you are talking about moderate to severe TBI.

What we did in this study we were being highly conservative so we control for all psychiatric conditions. And in doing so probably took out a bunch of our power because as we are going to talk about today having psychiatric or mental health related symptoms is definitely very common after a history of TBI. But we wanted to really make sure that people felt like we were overly conservative and even being very overly conservative we found that those who had a history of TBI and this is mild, moderate and severe were at increased risk for death by suicide.

I really want to call your attention here and this is not the best slide but I was told I could use my cursor here, which seems to be working, terrific. So up here you have what we think of as more mild TBI and then down here more moderate to severe TBI. Up here we have those who died by suicide and those who did not die by suicide. I want to just highlight to you whether or not you die by suicide if you have a history of TBI let us go down here to the more moderate to severe, you have very, very high rates of psychiatric conditions. So this is you can see your substance abuse, thirty-two percent of those who died by suicide, seventeen percent of those who did not still very, very high. Here we have major depression, twenty-one percent having a history of major depression in those that died by suicide. Significant differences though very high on both sides, even more depression, even more substance abuse, even more psychiatric conditions among the cohort with moderate to severe TBI who died by suicide.

In terms of TBI and attempt in ideation a lot less data. This is looking at the two studies that have suicide attempt data in them, neither of these studies was actually done to assess prevalence rate or incidence rate of suicide attempt. I can tell you these are both from our labs, they both are not good studies for this, but the number that was kind of thrown around was about somewhere between seven percent and twenty-seven percent of samples had a history of suicide attempts, those who had moderate to severe TBI. Then in terms of ideation we have a little bit of a better study by our friends in New York where they found about twenty-eight percent of people had a history of suicidal ideation after a history of TBI and that did include some mild. And then we have another study by our lab, again not intent to look at incidence at prevalence at seventy-two percent as you can see our data for a suicide attempt in ideation still not where we need them to be.

In summary, what we have is data from the study that I showed you plus a Harrison-Felix Study that really suggests that those with a history of TBI, all severity levels are at increased risk for death by suicide. We do have some studies that suggest that ideation and attempts are a problem, but still needing more research. Thankfully since 2014, that research has continued and some very nice studies, not the outcomes we would hope necessarily of course, but do replicate what we had found.

So in this again large cohort study from Sweden, a forty-one year study found a threefold increase in the odds of mortality for death by suicide after TBI. This is a very nice study that was done by our colleague Jessica Mackleprang [ph] and folks at the University of Washington where they found that twenty-five percent of their sample reported a history of suicidal ideation after history of TBI. This did include people who had thought care in the emergency room, but it included I believe some people who had more mild TBI but this twenty-five percent and the twenty-eight percent I showed you before. And this is not lifetime again; I should say both of those are during kind of a very specific period of time. This is directly I think in the year post-injury, Jessica’s study really if you about a quarter of folks, particularly in the year post-injury walking around with ideation. Despite all of this, the number of interventions we have for this cohort is one. There was only one randomized clinical trial with a very modest sample size that was found in the entire literature at the time that we did that systematic review which if you think about the numbers of individuals we are talking about I would say it is a sufficient number of interventions.

So to take a step back, we know that TBI the folks post-TBI and Graham Simpson has done some nice work in looking at this particular moderate to severe TBI about twenty-five percent of folks probably a little bit more. But think about that twenty-five percent number again have a history of hopelessness after TBI the things that do seem to facilitate increased levels of hopelessness really do have to do with changes in psychosocial functioning, post-TBI, also co-occurring depression. But it is not just mental health it is also kind of challenges related to everyday life, loss of sense of self and trying to figure out how to move forward with a meaningful life after TBI that results in this increased ideation and attempts.

Here is the one study that was done, this is called Window to Hope it was done by my colleague Graham Simpson in Australia and Graham very smartly thought hopelessness, had found hopelessness was a predictor of suicide attempts in those with TBI. Actually, hopelessness is also a predictor in those who do not have a history of TBI, actually a better predictor than depression or almost anything other than a previous history of a suicide attempt. So if you want to take away one thing today from this talk, please ask about hopelessness. If you are screening for suicide it may actually get you more information than even asking about depression. Graham came up with a ten-session intervention and I will be talking about the specifics of that in a moment. One of the really important pieces of this is that it is a small group intervention, which really does provide the time and the space for individuals who have more severe TBI to be able to have repetition of the content, have the space within the group to talk about things and figure things out. But it also has a peer feedback so sometimes when there are hard things to be said in a group it is nice that is not always coming from the therapist. So these group sizes are between two and three individuals, which is somewhat different than when we think about groups, but this is the group intervention we are talking about here. Graham hypothesized that there would be significant decreases in hopelessness and decrease in ideation, increase in hope and problem solving, also decrease in depression for those who attended.

I want to talk a little bit about the intervention. The nice thing about Window to Hope from an interventional perspective is it really does incorporate many things that any mental health clinician already knows how to do. I think this is a really important point, we do not have enough rehab psychologists or health psychologists out there to meet the needs of everybody who has a history of moderate to severe TBI and co-occurring psychiatric conditions. I am happy we have other resources I am not going to talk about specifically today, to help with that. But one thing I want to let you know is that it is on the line on the line and you are a mental health provider you already have the skillset necessary to implement interventions for those with moderate to severe TBI with some slight changes in terms of pacing and compensatory strategies. I really want to encourage you to think about taking that on because the reality is whether you know it or not you are already treating people in the mental health clinic that you work in or in the setting that you work in that have moderate to severe TBI whether or not you know it. Okay, Window to Hope intervention really does incorporate pieces from CBT, things like behavioral activation, cognitive restructuring, some very specific problem solving strategies and problem solving therapy strategies and some post-traumatic growth and resilience work.

One thing that Graham did quite smartly and what I am showing you now, we did actually a cross-cultural adaptation of the original intervention and what I am showing you today is some things from the cross-cultural adaptation. This is not necessarily the stuff that Graham used in the trial, but it is the step that we used in our trials that I am going to tell you about.

For the Window to Hope intervention there is a four pane window, you can see here imagine a window. And in each of the panes, there is a specific concept or area that we will be focusing on. Again, this idea of using the windowpane, of using pneumonics, of using different tricks and strategies and repetition to help folks with cognitive impairment actually remember and incorporate these. As you can see here, we have this behavioral activation, good positive lifestyle up in the left hand top corner. Then we have this cognitive restructuring using the stop, drop and roll which is the fire prevention when you catch on fire this is what you are supposed to do – stop, drop and roll. But we use that as something that people already know to help remember cognitive restructuring strategies. Problem solving strategies STAR is the acronym and then again this building hope concept.

What you can see is that the aims of this program are specifically to strengthen hope by exploring ways of building and maintaining a sense of hopefulness after brain injury, addressing negative feelings, learning how specifically some thinking styles can trap people into feeling that, learning how to break out of that trap, facilitating dealing with life’s problems. And then this really how do you rebuild your life after a brain injury. I am hoping for the clinicians on the phone this sounds like stuff that you do all the time in your clinical practice. Then it is really laid out very specifically with a number of worksheets and activities that we do both in session and at home with lots and lots of repetition.

Here for an example is behavioral activation really looking at people’s activity levels and connecting the idea of if you are sitting at home, if you are isolated and if you are not engaged, inactivity that that is going to result in feeling more hopeless and depressed. Here is another one of roles, what we have here on the left hand side, we go through each session, and there are specific aims, content that we do on each session. Here is the stop, drop and roll and then again using it later in the session using another figure to go over it again and then having exercises. So looking at how to say things inside our heads and not say it out loud; how to distress and how to move on to a positive thought. So again, this stopping, taking a deep breath and using positive self-talk and moving on before maybe acting on the initial thought that comes into your head.

Here is the STAR acronym that I talked about which is Spot, Think, Act and Review so identifying a problem, thinking of ways to solve a problem, acting on the best option and looking at the outcome. Finally this idea of valuing yourself and using this metaphor of everyday hero to find ways to get connected back to yourself and your community; finding a sense of purpose and working towards good things happening in your life. And thinking that they can happen and this idea that maybe the goals are different then they would have been before you had your brain injury but that there are meaningful that you can do to contribute.

This is data from Graham’s study; it is a weightless control design. What you can see is in the treatment group you had folks who everybody had to have a nine or greater on the Beck Hopelessness Scale and a significant reduction with some maintenance of that. The red group they did not get the treatment between Time 1 and Time 2 but did it at Time 3 and they also had clinically significant and statistically significant decreases after the intervention.

We thought gosh this would be awesome if we did this with Veterans so we applied for and got funding from the Military Suicide Research Consortium to do a trial of Window to Hope for Veterans with mild to severe TBI and Beck Hopelessness Scale scores of greater than nine. As I mentioned before this kind of work takes a village and this is the village, although only part of the village that really helped with this. This is our masculine four-pane window that the DoD asked us to find that we use as the metaphor for this intervention. As I said before we did a cross-culture adaptation of the intervention, the paper on that is already published. Then we did some pilot groups to make sure it was acceptable and feasible and to revise the manual and then we did a Phase 2 RCT to test efficacy. We were also fortunate enough to get funding to develop a second intervention, which I am also going to talk about today. I will talk a little bit about that intervention, and we are currently under review for a grant to potentially test the efficacy of this for folks with moderate to severe TBI but also to do a cross-cultural adaptation for folks with mild TBI and PTSD. If you are one of the grant funders for this, I hope you are thinking good thoughts about this because we really want to be able to carry that work forward too.

Okay so for the Window to Hope intervention very typical waitlist control design RCT where the waitlist group did have the chance to get the intervention after waiting. So we had follow ups a three months for the folks that had Window to Hope first; we had the three month follow up for folks who had the waitlist control. One thing I will say is I think I cited Hoff burg [ph] before he was our study coordinator for this; this was a herculean effort to screen many, many, many folks to actually get the number that we needed to actually be in the trial. Everybody had to have a history of moderate to severe TBI and all of them had to have a Beck Helplessness Scale for nine or greater. One thing I will point out here is randomization it did not exactly work in this trial and here you will see it did not work in front of the few of the variables in the demographics forum. It also did not work particularly well for some of the outcomes which created some challenges around the data which I will talk about in a minute, we will just say randomization in small trials is really a challenge and that is something for us to talk about on a different call, different day.

Here is really the take home message and what you will see here a little bit differently presented but on the left hand side is the Group actually very similarly the group that was allocated to Window to Hope. On the left this is the data that has not been published yet, on the right the list control group and what you see is and what I will show you in a minute is there are some differences in hopelessness at the starting point so that one group had a little bit more interchange than others. But statistically significant changes for those who initially received Window to Hope from baseline to Time 1 and what I also think is really, really lovely is this maintenance to Time 3. So at three months they were still able to be at decreased levels of hopelessness and then you see very similarly for the folks that also received the intervention after being on the waitlist.

Here are some of the messier numbers for you to see. I am not going to go through all of this in a lot of detail because it does get complicated but we thank goodness have an amazing statistician. And what you can see is that those, and I will show you on the next slide too, there were differences in how much change there was in the group on the outcomes of interest, which resulted in, and you cannot see it here because it is not displayed particularly well. But for the group that was initially allocated to the waitlist they actually did have a significant change in depression after receiving the intervention. Those initially allocated to the intervention did not have that but I will show you here. Here is the baseline Time Q Time 3and you can see just this idea of, and I will switch back again, having how much room you have to change between the groups actually makes a difference. And you definitely, when you are recruiting for a study like this want to make sure you have enough room so that people can actually get better. The fact that we had differences in between the waitlist and the intervention groups in how much room there was to change created some statistical challenges for us. And thank goodness, it did not really impact in a big way the nature of the outcome. So you can see here, I will use my cursor, these are those initially allocated to Window to Hope they have a sixteen on the Beck Hopelessness Scale and a thirty-seven on the Back Depression Inventory. Those allocated to waitlist initially have a fourteen and a twenty-eight. So particularly that thirty-seven and twenty-eight is not a gap that you want to see, nonetheless things turned out just fine.

We also like to collect qualitative data to hear from the Veterans again, how they perceived the intervention. So this is what some of the Veterans said about Window to Hope. They said – it is not just one intervention, but a multitude, which I can combine or use separately in my issues pertaining to decision and problem solving when I have problems pertaining to my thought process and TBI. Another said - I have found that I have sustained the intervention techniques and now use them without a cognizant thought. With these new techniques, I found that I have more hopefulness in attaining my goals and hopelessness is now filed away and not attainable easily, it is not the first thing I grasp. Another Veteran - I have already noticed some differences in me. The way I respond to simple questions, like “how are you?” A lot of the stuff we were doing I was already practicing like eating better, exercising, sleeping, and positive living. I did not take it very seriously at first, but it was a good thing. And finally - to be able to breathe with knowing that ending my life is not the answer. Just to take a deep breath of fresh air it seems like and it feels good.

More talking about having the same problems but not feeling so alone in those problems. Having more self-esteem and understanding that they actually do have a true injury, that actually has the quality, but they can deal with it and get back out there in the world. Another Veterans said – I became much more aware of my own thought processes and maybe my own lack of thought processes. More just acting on feelings rather than really thinking about why I am feeling the way I am feeling. And I became very aware of some things that I am not doing that I can do. I love this last part, the responsibility falls to me but people still can be responsible and change their life even after a history of moderate to severe injury. Finally - I felt a change in me, it gave me more incentive to try to work out the problems I have, instead of just putting them in the back burner all the time. It gave me hope! Which of course was the whole point of the whole thing so that was awesome.

In terms of limitations and next steps, I talked to you a little bit about the messiness. I am not going to get too far into challenges regarding some of the measures too particularly measures of suicidal ideation are very, very challenging not just for those with TBI but for everybody and give us basically dichotomous outcomes most of the time which makes it really hard to look at variability. So if you are a researcher on this call and you are interested in developing or exploring new measures for looking at suicidal ideation particularly in those with narc disability, that is an area that needs a lot of your attention.

Another thing I will just put out there to folks is now we have two trials. Neither of them large but with very different populations both showing that this does reduce in a clinically meaningful and statistically significant way, outcomes of interest and the question begins to be – do we need to do a larger multisite trial and if so who would like to pay for that. Or do we do an effectiveness trial or do we start to roll this out and disseminate the manual and training. This is something we are really struggling with is at what point is an intervention ready enough to start being rolled out. Certainly, I am turning to colleagues but I am very open to feedback on this. So if you have thoughts about when an intervention is ready, and you want to back channel email me and tell me I would love to hear your thinking on it because there are not really great guidelines for researchers to figure this out on their own.

So as I said, this has been an international collaboration that has been quite wonderful. As some people know on the phone and Dr. Thome [ph] and I were just talking, I actually just got back from Australia on Friday, I was there working with Graham who has been working with us. As I said, he worked with us to put together the Window to Hope manual and to test that here. We simultaneously worked with him and he is going to be testing into next year a problem solving class for Veterans that we put together. This really was motivated by findings that we accomplished last year and this is an RR&D Merit Review Grant so thank you very much RR&D for supporting this study. We were really interested in looking at the relationship between executive dysfunction and particularly thinking and thinking thought processes in those with a history of moderate to severe TBI and suicide attempts. This was kind of a bear study to recruit for but we got there.

And I want to just not go through a lot in the study I just want to show you one of the main findings. Many of you might be familiar with the Iowa Gambling Task an ecologically sound measure of risk and problem solving and risk taking. What we really found is that you can see the four different groups here, we had Veterans who had a history of: no suicide attempts, no TBI; no suicide attempts, yes TBI; yes suicide no TBI; and both. The bottom line here as you can see on my cursor here, this is the both group. This is not what you want to see when you look at a neuropsychological measure. Because what this basically says is this group really just did not engage at all with the task. When the task got hard or confusing, they just stopped engaging. That kind of cognitive rigidity or inability to think of many alternatives is one of the things we really think contribute to suicide for a number of cohorts but certainly in the cohorts of individuals with TBI. What you have here is a different model where you have TBI, mild TBI that results in cognitive deficits and hopelessness and those seem to kind of play back and forth with each other, be bidirectional those can also lead to failed problem solving. As with all folks including everybody on this call stressful life events come along and when that stressful life event comes along, kind of like that Iowa Gambling Task, what you have is instead of okay I am going to keep trying, I am going to think of other strategies. I want to point out here the group that had TBI they did continue to engage in this task. Some people can say well maybe this was just a mechanism of the TBI alone, no actually, that is not it. The group with TBI did engage, it was the group who had TBI and suicide attempts that did not engage. This group, there does appear to be a cohort out there of folks who are not thinking, are not able to think flexibly when they get in stressful situations and they start to think suicide is the only option and that is when you get into this concerning space of having a suicide attempt.

For this intervention, what we did was we really melded two different evidence-based processes. One was the problem solving strategies particularly in emotional regulation and planful problem solving that are really the bread and butter of Art Nezu’s [ph] problem solving therapy or problem solving training with the safety planning. I am hoping that maybe you are familiar with the safety planning or crisis response planning. Crisis response planning or safety planning is an evidence-based treatment that has been adopted by the VA to use when folks are in crisis or at risk of being in crisis. I will talk a little bit more about safety planning and crisis response planning s we go. Part of my concern over time has been that maybe those who have more severe injuries and have maybe some history of psychiatric conditions or history of a suicide attempt or that there was a specific cohort, that cannot really implement very well on the first time out. They are going to need practice implementing a safety plan particularly during a time of crisis.

This intervention also ten sessions, also small groups, but much more specifically focused on the problem solving pieces. So you will see things that probably look familiar to you, this idea of identifying triggers and warning signs specific problem solving steps, learning strategies to deal with triggers and warning signs, unhelpful thinking again. We did include some act more like thoughts or just thoughts, doing brainstorming pros and cons and solutions and then smart problem solving.

The whole intervention really is contingent upon this idea that we kind of all have some problem solving ability that maybe can withstand every day stress. But as your stress grows, perhaps you are no longer able to deal with the problems quite as effectively. But if you have problem solving skills coupled with a crisis response plan, specifically if you apply the skills you learn in the class you will be able to cope with stress and that you will not have your breaking table, which will lead to more crises.

Specifically we talk about emotional regulation; Georgia Girard put these few slides together, thank you Georgia. So looking at the importance of warning signs, which are thoughts, feelings and behaviors that are personal. So personal thoughts, feelings and behaviors and triggers so that you know when a problem is going to start. Making the connection the triggers can lead to warning signs and if warning signs re not recognized they can snowball into a crises. Again, lots of teaching, some very basic but important concepts. I know that my children probably are overwhelmed with thoughts, feelings and behaviors and learning all the emotional health and mental health but I guess not everybody’s family talks about this at home and I think I forget that. But lots of this stuff is new for people and if you do not have the unfortunate thing of my children who have two mental health providers as parents, so nobody may have taught you that actually emotions and beliefs are actually connected. So this is really important for our Veterans to know this. It is also really important to be clear that certain things are triggering and that those triggering things like crowds or traffic or being alone or anniversaries or maybe even politics can trigger beliefs or emotions or physical sensations that really can lead to a crisis situation. Again, talk about a specific thing each day that we focus on during the session with lots and lots of repetition and pick real world examples from individuals that we worked with in the past but also real world examples of people in the group and have discussions in the small group sessions. Here is an example of focusing on unhelpful thinking and how that might lead to outcomes that are not so terrific.

This I love, a PASTA, we had spent a lot of time a lot of thinking about what would be a good acronym for pausing, becoming more in slowing down thinking and acting and then one of our Veterans thought of it in five seconds and said how about PASTA and came up with the synonyms for these. We had a little different synonyms for PASTA were slow, down, think and act and so PASTA is now part of the intervention which I love because the Veterans thought of it and people do not forget PASTA. We do a lot of talking about PASTA and PASTA is a strategy to deal with triggers and warning signs.

This is what a safety plan looks like. During the intervention, what we do is first half of the session we spend teaching one of the problem solving skills; second half of the session applying those skills to safety planning. We do have individuals fill out a safety plan at the very first session, at the end, that is the second half of the first session. Often we found that those are pretty sparse safety plans, people are not very good at identifying their own warning signs nor their coping strategies. What we really do over the sessions is we keep adding to the safety plan, revising the safety plan, enriching the safety plan using the skills that they learn and what folks have is an overlearned much more enhanced tool by the tenth session that they can use and take with them. I should also say that there are telephone apps now for safety planning and I think using those with individuals who have cognitive impairment is really a great thing because they are on people’s phones then, their safety plans are on their phone and something we should definitely think about incorporating more into this intervention. But something that I have been definitely using in my practice with folks is creating an action plan or a safety plan and then having people have it on their phones. You can also have folks take pictures of the safety plan that is written down and they have that in their phone too.

Also specifically focusing on specific problem solving steps, again using ABCDEF things that people can remember. We actually were given permission to borrow this from some of our DoD colleagues so thank you for the ABCDEF. And then really using that to get a better action plan to solve problems but also get a better action to deal with crises or triggers or warning signs or any of the other things that we specifically focus on on the safety plans. Again very specific work and worksheets around assessing and brainstorming and problem solving and then considering and choosing specific options. And this idea of also do not do this alone necessarily this idea that you can get input from other people looking at pros and cons. And sometimes making hard decisions actually takes time and you may actually have to write things down and spend some time thinking about it. We are also very much like to help people come up with plans or goals that are SMART, here is another acronym – Specific, Measurable, Achievable, Relevant and Time bound.

Much like the Window to Hope, we do really focus on that this is a lifelong process. We are teaching a lot of skills but the idea is that these skills are such that I view people in this group need to remember and practice all the time. It is kind of like eating right or exercising, you cannot say okay last month I did a really good job I am exercising so I do not need to exercise this month. This idea that these need to be sustained that sometimes they will get a little bit easier as you overlearn them but really, they need time and attention over the course of a lifetime. If you find yourself getting into trouble, or not doing as good a job maybe, you need a little bit of a tune up and to go back and relook at things.

So again, concert diagram this was a feasibility acceptability trial that was funded by the Military Suicide Research Consortium and we were really interested not so much in traditional efficacy outcomes but looking at feasibility and acceptability. One of the measures we used was the client satisfaction questionnaire, which is a zero to four-point scale, and you can see that all of the scores were quite high. Folks really did feel like the intervention was helpful, that it met their needs and this was again confirmed by the qualitative interviews. Here are some of the quotes we asked, we called it the Narrative Evaluation of Intervention (NEII) we used that for Window to Hope also. One Veteran said – I know that I am not going to make hair-brained decisions; I am going to use at least some if not most of the coping skills we learned here. Another Veterans said – it contributed insight for me into myself, into the way that I deal with problems. I opened my eyes to the bad ways that they deal with problems. I do not even recognize them and now I have the ability to define a problem that is confronting me. I understand that all problems can be worked through. This idea of taking a pause you do not need to rush into solution and that looking for different possible solutions one Veteran thought that as the most important part of the class. Another Veteran said - this intervention helped me have a brighter look knowing that my problems are not insurmountable but I can work through them and I do not have to hide from them. Folks having a sense perhaps they needed to walk away from things that were too difficult, but now maybe they can find a solution for them. And finally, when I had all these warning signs about the crisis I thought it was natural, I did not see it as an indicator or trigger that something was going wrong, this intervention helped me looked into it and solve the problem. It helped me focus on that and problem solve which is awesome.

This is a quote back from Window to Hope not from PST but really did you benefit from the intervention ad this person yes, yes most definitely. I am not contemplating suicide at this time; I do not even want to think about it, I want it to see tomorrow. And this class has helped me have those thoughts that make me want to keep living.

That is what I have for you today; I wanted to leave a little bit of time for questions at the end. For those of you who are mental health providers I do want to highlight on our website. We do have a toolkit for mental health providers working with folks that have TBI. That has all kinds of resources around screening, assessment, treatment particularly has a link to some really nice resources at the Ohio State University that are about taking evidence-based treatments and perhaps implementing some compensatory strategies in them so that you can better use them with folks. So have a history of cognitive impairment. I thank you all I should also note that I think folks from the MIRECC were live tweeting this today and we do have a MIRECC twitter feed that is quite active that I am guessing that this and a lot of our other materials on it. I am also a big fan of Twitter so if you are on Twitter I would love to hear from you. Molly that is what I have for today.

Molly: Excellent. Thank you very much we have a lot of people that have written in great questions and a lot of people that have just written in saying they are grateful for the presentation. So we will jump right into it. What is the average and age range of suicide among our Veterans? How many sorry, got cut off there. Let me start that again. What is the average and age range of suicides among our Veterans? How many are current combat MBTI?

Dr. Lisa Brenner: Those are all really interesting and hard questions that we probably do not have all the answers to. I would say that there are several emerging high-risk groups and now I am just talking in general for Veterans. Certainly, Veterans are mostly comprised of a higher proportion of men and younger men and then some older men. So I would say men between, younger men ranging up in age to let us say thirty-ish even a little bit older are higher risk for suicide. Then certainly older gentlemen are at risk for suicide so we have two cohorts that really are the primary seekers of care in the VA who are really high risk for suicide just epidemiologically speaking. But that being said there is some data that suggests that female Veterans are very high risk for suicide and even higher than females in the general population. There seems to be a lot of different reasons for this but we are trying to still figure all those out. I would say that we do not have sense of kind the average age of individuals with TBI who are dying by suicide and certainly, the study that we did was the data was collected from 2001 to 2006. So before the large cohort of OEF/OIF Veterans was seeking care in the VA.

What I would say just to the clinicians out there is err on the side of asking but ask in a clinically meaningful partnered way in the midst of a relationship in the context of relationship about things like hopelessness, reasons for living. Because certainly epidemiological risk factors do give us some sense of who might be at risk but unfortunately folks who have no risk factors epidemiologically speaking still can be at very high risk for suicide.

Molly: Thank you for that reply. Very interesting work on assessing executive misfunction and suicidality. Did you control for prior ADHD or other conditions that are known to correlate with executive function problems?

Dr. Lisa Brenner: We did control for psychiatric conditions. We did not control for ADHD we did not look at that specifically.

Molly: Thank you. It is often quoted that twenty-two Veterans.

Dr. Lisa Brenner: I hope I said that right.

Molly: I understood what you said.

Dr. Lisa Brenner: I know I have to go read that article again. I am saying that eighty-five percent certainty whoever wrote that. So whoever asked that question feel free to go pull that article, if I am wrong make sure you tell me about the controlling for it.

Molly: Sounds good thank you. It is often quoted that twenty-two Veterans a day commit suicide. Is that accurate and are interventions showing any signs of rate reduction in current Veterans per se?

Dr. Lisa Brenner: I think that is the number that people are talking about although there has been some revisions of numbers. So what I want to do is not so much talk about specific numbers but talk about what the good work that folks are doing in the VA. I guess specifically there is some data to suggest that folks who seek care in the VA actually do better than folks, when I say folks I mean Veterans that do not seek care in the VA. And what I really want to highlight to folks is that the good work that all of you have been doing seems to be paying off and we need to make sure that all of that good work that does seem to be contributing to lower numbers in those who seek VA care that that is actually getting out there. Because sometimes all the good work that is being done gets overshadowed by other things. I am going to ask I think Adam and Joe are on, if they can tweet because there have been a lot of questions about numbers. And there is a suicide behavior report that was recently published by the Office of Suicide Prevention and I am going to ask them to actually make sure they tweet the link to that so that folks who really want to dig into the numbers and there are a lot of numbers to dig into can actually take a look at some of the revised numbers too. Joe I see that you are on so I am going to ask you to do that.

Molly: Thank you. When will PST for suicide be available to training staff?

Dr. Lisa Brenner: That is a great question. PST actually we do not have an efficacy trial for yet so we do not have any data that actually shows it works. We have data that shows that Veterans like it. We need to actually get it funded so that we can actually do a randomized clinical trial and show that it works. I do not know, I am sorry I wish I could give a better answer. Sometimes getting stuff funded is hard and it takes a lot of time and effort. I am very hopeful about this application and if this one does not go, I am known to put in applications lots and lots of times, so I get stuff funded. So I will keep you posted but keep writing me and I hope it is sooner rather than later.

Molly: Thank you. Have you compared your data to any literature that may exist on suicidality and other brain injuries such as strokes?

Dr. Lisa Brenner: Well I am so happy that you brought that. Graham Simpson who I just said I was visiting in Australia he and I have a book on neurodisability and suicide that will be hopefully coming out next year from Oxford where we look at all different rehab populations and suicide risk. We are also in the midst of looking at within Veteran cohorts work on this exact question. So my hope is that we will have some very good Veteran numbers to you out in the next year and that we will have a lot more information to this around the non-Veteran data. Certainly for all of those who have neurodisabilities so stroke, history of stroke, history of ALS, history of multiple sclerosis and I will call out our good colleague Aaron Turner who has done some nice work in this area around suicide. Those folks are all at risk for increased rates of suicide death. And so certainly incorporating screening and assessment strategies for suicide risk assessment when you are working with folks who have a history of neurodisability and just this weekend we were talking about wouldn’t it be great to do Window to Hope for folks who have a history of MS or other neurodisabilities. So data is coming in and yes, this is a problem for other populations.

Molly: Thank you. That was a well-timed question. Do you have a specific group manual that we can follow?

Dr. Lisa Brenner: We do have group manuals for both of these interventions. If you are interested in the Window to Hope in particular this is what we are really trying to figure out is how much training one would need to actually do it. If you are really interested in Window to Hope and think that, you would like to run a trial would be interested in trying to figure out how much training it takes then you should email me. I am sure the staff here is going to kill me for saying this but I would love to try to work with you to try to figure out how much training would actually take to get you to run this to fidelity. If you are interested in that for the Window to Hope, please let me know.

Molly: Thank you. Is there any body of evidence strongly implicating in a causal sense a history of concussion in m-TBI as an independent [laughter]?

Dr. Lisa Brenner: Casually.

Molly: Right just causally.

Dr. Lisa Brenner: Causally I think it is causally.

Molly: Causal, oh you are right I forgot an ‘l’. Let us start from the beginning.

Dr. Lisa Brenner: Okay. [laughter].

Molly: In a causal sense.

Dr. Lisa Brenner: There is nothing casual about yeah concussions.

Molly: Let us try this one more time. Is there any body of evidence strongly implicating in a causal sense a history of concussion m-TBI as an independent, that is independent of comorbid substance abuse and/or psychiatric variables, casual factor in precipitating suicidal ideation and/or behavior?

Dr. Lisa Brenner: Yes. So the study that I showed you from the VA does have a group that has mild TBI that were at an increased risk. What I guess I would want to highlight is after controlling for those things, I guess what I want to highlight is this idea that probably increased risk and why people have increased risk with concussions potentially is different than those who have increased risk from moderate to severe TBI. So I am centrally not talking about concussions that are received in the context or are sustained in the context of combat, but I am talking about concussions that may be related to bar fights or other risky activities. If you think about suicide as a risky activity or self-directed violence in the risky activity and just ways that you sustain a TBI at risky activity that those things might hang together in a different way than we would think about maybe somebody who has a more moderate to severe TBI. Who has significant psychosocial challenges and perhaps reduced reasons for living being the risk factor for increasing risk for suicide. But yes, there are studies that show this. They can find our study Teasdale and Engberg a number of studies that show independent for mild TBI not concussion and certainly no one has looked as sports concussion if that is what people are talking about.

Molly: Well they did follow up with something.

Dr. Lisa Brenner: Okay.

Molly: Is there any identifiable and plausible pathophysiological mechanism that is purported to account for this mild TBI? Like suicide ideation link and what it he current empirical status of this model?

Dr. Lisa Brenner: Yes. So that is a great question. What I would suggest people look is at the work of Fabrice Salaun. Fabrice has been looking at neuropsychological, neurobiological molds of suicide in those without TBI. But I think that his model works quite well and we have written about it somewhat to think about it does overlay on TBI. Fabrice Salaun is in Montreal is I would suggest that you take a look at his work. Also we have been doing some work here, this is not exactly what the person asked though similar work here looking at maybe underlying mechanism such as inflammation that are known to increase risk of suicide and certainly are prevalent in those with a history of TBI even long after their injury histories. Work is going on to look both at brain structure and brain function and then mechanistically. We are not there yet but certainly, there are areas of importance that we are all looking at.

Molly: Thank you. I do have two remaining questions but before I get to those I just want to jump in and say that we did get a few links from one of our attendees. One is for the suicide data report and that can be found at [www.mentalhealth@va.gov](http://www.mentalhealth@va.gov).

Dr. Lisa Brenner: Thank you.

Molly: There is a whole string of things but it will end up with suicide data reports so you can probably Google those and it will get you there.

Dr. Lisa Brenner: Thank you.

Molly: Yeah. And the TBI toolkit can be found on MIRECC.va.gov, there is a nineteen TBI toolkit. Also the Military and Veteran Microbiome Consortium for Research and Education can also be found through the MIRECC.

Dr. Lisa Brenner: That is our inflammation work.

Molly: That can also be found through the MIRECC website. A lot of good stuff out there. Last few questions – did you utilize a peer specialist as a group facilitator and/or invite Vets who have taken the group before to share how the group impacted them?

Dr. Lisa Brenner: We did invite them to share how the group had impacted them in terms of the qualitative interviews. We have not tried to do either the interventions with peer support. But I think both of that are very interesting questions.

Molly: Thank you. This last question is pretty specific so you are more than welcome to ask for them to contact you.

Dr. Lisa Brenner: Okay.

Molly: You can have them contact you offline if you want.

Dr. Lisa Brenner: This is like the test of can you answer question Dr. Jaylee [ph]? So yes.

Molly: Can I read the question is the first step and then we will see if you can answer it. I am trying to do a validation study for STAR.

Dr. Lisa Brenner: Right.

Molly: Which would be the recovery program in the Veteran population and it is an intense eight-week program. Any suggestions of how to recruit Veterans with mild TBI to commit so much a program five hours a day four days a week, eight weeks? Do you think that is even feasible?

Dr. Lisa Brenner: Why don’t you email offline I would love to talk to you about it?

Molly: Excellent. Alright that is the last question, we do have a minute remaining do you want to make any concluding comments?

Dr. Lisa Brenner: No, no, I want to thank everybody so much for joining today and thank you for all the amazing work you are all doing in the VA unsung heroes and do not get enough credit for how hard everybody works everyday so thank you all so much.

Molly: Great well thank you very much for coming on an lending your expertise to the field especially after such a long travel from Australia, we do appreciate it.

Dr. Lisa Brenner: My pleasure.

Molly: Of course thank you to Ralph DePalma for setting up this and all of our other TBI cyberseminars, which do occur monthly, so always keep your eyes peeled in your inbox for your announcements. We do enjoy you having us here. I am going to close out the session and you will see feedback survey pop up so please take a few seconds to just fill that out for us. Thank you Lisa, thank you Ralph, have a great day everybody.

Dr. Lisa Brenner: Thank you.