

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

Thank you all for standing by. All lines have been placed on a listen-only mode throughout the duration of today's conference. Today's conference is being recorded. If you do have any objections you may disconnect at this time. I would now like to hand off to Dr. Douglas Cooper. Thank you. You now may begin.

Live closed captioning is now available through Federal Relay Conference Captioning. Please see the pod below the presentation. Good afternoon. Thank you for joining us today for DVBIC's July webinar. My name is Doug Cooper from San Antonio Military Medical Center in Texas. I'll be your moderator for today's webinar. We are very fortunate to have Dr. Wesley Cole and Dr. Robert Stegman as our presenters for our webinar today, entitled "Assessment of Effort and Validity in Neuropsychological Testing; the Importance of Determining Symptom Credibility."

Before I proceed with introductions let's review some details of this webinar. As many of you know, continuing education units and continuing medical education units are available from St. Louis University. This webinar is approved for the following CE credit: 1.5 AMA/PRA category credits, 1.5 credits for psychology, 1.5 nursing contact hours, 1.75 CE contact hours for physical and occupational therapists and assistants, 1.5 CE hours for social work.

Please note that DVBIC's awarding of continuing education credit is limited in scope to health-care providers who actively provide psychological health and traumatic brain injury care to U.S. active duty service members, reservists, national guardsmen, military veterans, and/or their families. If you meet the eligibility requirements to receive CE credit and also preregistered on or before Sunday July 14th, 2013, you must complete the online CE evaluation to obtain a certificate. Certificates of attendance are also available to all who registered on or before July 14th, 2013. Please visit the Swank HealthCare Website to complete the online evaluation and download your certificate. The Swank HealthCare website will be available and open through Wednesday July 24th, 2013, at 11:59 p.m. Eastern Standard Time. For full accreditation information, please visit www.dvbic.org and click on "Medical Providers" to access the webinar series.

Another quick announcement, the Defense Centers of Excellence is proud to announce the fifth annual Warrior Resilience Conference on August 12th through 16th of this year. This cross-service training will focus on resilience and the prevention and treatment of combat and operational stress injuries to optimize performance and enhance physical and psychological resilience. Sessions will focus on mind, body, spirit, sleep, and provide training and education in combat and operational stress control. Continuing education credit will be available for attending this virtual conference. The primary audience for the Warrior Resilience Conference is line leaders and care providers, including both clinicians and chaplains. Please watch for registration to open soon. For more information, e-mail wrc@experientinc.com, E-x-p-e-r-i-e-n-t dash I-n-c dot C-o-m. You can download the Warrior Resilience Conference flyer from the file download box on the left side of your screen.

Again, thank you for joining today's presentation. We look forward to your participation in future DVBIC webinars. The topic of DVBIC's next webinar is "ICD9 Clinical Modification Coding Guidance for Traumatic Brain Injury within the Military Health System." It is scheduled for July 31st, 2013, from 1:00 to 2:30 p.m. Eastern time. Please visit the DVBIC website for registration and additional information.

Today's presentation is now available for download from dvbic.org/online-education. Recorded audio from the presentation will be available starting August 1st, 2013. Please take a moment to complete the interactive customer evaluation, the ICE, at the conclusion of today's webinar. Please note there may be a delay as we advance the slides during the webinar. Please be patient as the connection catches up with the speakers' comments.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

We encourage you to submit your questions throughout the presentation via the question-and-answer box located on your screen. There will be a 30-minute question-and-answer session at the conclusion of the presentation. The presenters will respond to as many questions as time permits.

To begin today's webinar I would like to provide an overview of our topics. One of the issues that providers face when treating someone with traumatic brain injury is determining the credibility of the patient's symptoms. Unfortunately there are service members with mild TBI who feign or exaggerate symptoms. This poses a number of challenges, including how to determine if a patient's symptoms are credible, how to reconcile differences in clinical standards, how to overcome disagreements between clinicians, and how to deal with a potentially unpleasant interaction with the patient.

The goal of this presentation is to educate health-care providers about the standard of practice for symptom validity testing. We will illustrate the importance of the data-driven objective approach to assess the credibility of symptoms. We will use several case examples from a concussion care clinic. All right, let's begin.

We're very fortunate to have two extremely knowledgeable and experienced clinicians to present to us today. Dr. Wesley Cole received his Bachelor's degree in Psychology from James Madison University. He holds a Master's degree and Doctorate in clinical psychology from the University of South Carolina. Dr. Cole completed his predoctoral internship in pediatric psychology and a postdoctoral fellowship in neuropsychology at the Kennedy Krieger Institute, an affiliate of the Johns Hopkins School of Medicine. After completing his fellowship, he accepted a position at the Kennedy Krieger's Department of Neuropsychology. In 2009, Dr. Cole came to the Concussion Care Clinic at Womack Army Medical Center. Looking to expand his roles into research activities, he affiliated with DVBIC at Fort Bragg in 2009. He continues to divide his time, conducting neuropsychological assessments in the Concussion Care Clinic and overseeing DVBIC research at Fort Bragg. We're very lucky to have him.

Dr. Robert Stegman was on active duty in the enlisted ranks from 1964 through 1972. Dr. Stegman earned his Master's degree and Doctorate from the University of Missouri Columbia. Dr. Stegman completed his internship at the Indiana University School of Medicine where he developed a professional interest in neuropsychology. From 1980 to 2008, he worked for the Department of Veterans Affairs. His clinical duties focused on post-traumatic stress disorder and neuropsychology, and has included thousands of disability forensic assessments. Dr. Stegman has been an accreditation site visitor for the American Psychological Association and was active in the development of competencies for VA psychologists. Additionally, Dr. Stegman has been the chairperson of the Doctoral Membership Review Committee for the Association of Psychology, Postdoctoral, and Internship Centers. Dr. Stegman left the VA and resigned from national professional activities to work in the Department of Brain Injury Medicine at Womack Army Medical Center. Please join me in welcoming Doctors Cole and Stegman.

Thank you, Dr. Cooper. This is Dr. Cole. I have one little bit of housekeeping left, a disclaimer. The views expressed in this presentation are those of the presenters and moderator and do not reflect the official policy of the Department of Defense, Department of Veterans Affairs, or the U.S. Government. We do not have a relevant financial relationship to disclose, and we do not intend to discuss an off-label or investigative use of a commercial product.

Okay, Dr. Stegman and I developed this webinar around three primary questions of interest. The first, is symptom credibility a problem facing providers in military treatment facilities? Is this something we should even be talking about? Number two, why is assessment of credibility important? Clearly, if credibility is an issue, then it needs to be assessed. But beyond this, what are the current professional standards? And three, how are symptoms and credibility commonly assessed? We'll primarily be focusing on neuropsychological evaluations, but the principles remain the same across all disciplines.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

So for the first polling question we're going to have some audience participation. Let's get an idea of the audience's familiarity with this topic. So please answer yes or no; do you feel you currently have a firm grasp on how to address the credibility of a patient's symptoms in clinical present? We'll allow a few moments for answers before we move on. As the answers are coming in, it looks like it's about 40% yes, 60% no, so it looks like we have an audience that will, hopefully, really benefit from this webinar. And we attempted to put together a webinar that would apply to those of you in the audience of all knowledge levels.

This slide contains the learning objectives. While necessary for continuing education purposes, we viewed this as an opportunity to expand on the three guiding questions I just reviewed. In summary, we hope that you will all come away from this webinar with a firm grasp on evaluating the topic of credibility symptom presentation, including understanding of the importance of an objective data-driven approach. We want to emphasize what the established standards of care are in order to help providers evaluate what they are currently doing in practice and make any necessary changes.

So now we'll begin to expand on the three primary questions I initially covered. We'll begin with what Dr. Stegman and I felt was an important question to begin with, is this even a problem. But before we really dive into question one, let's address the elephant in the room. Are we talking about malingering here? Well what exactly is malingering? It is defined as the intentional production of false or exaggerated symptoms motivated by internal incentives; that is, faking symptoms for secondary gain. Often, malingering is used as a descriptive term for anyone who is deemed with invalid data on assessments. However, malingering is a diagnostic terms, and according to Glenn Larrebee, one of the leaders of the field on this current topic, this diagnosis requires judgments outside of objective evidence. Intent is key to malingering. Also, malingering is just one possible cause of invalid performance on assessments, and though exaggeration is core to malingering, it is not synonymous with this diagnosis. There are some psychological disorders that are associated with symptom exaggeration, so later I will mention a caveat to this point when discussing assessment in effort.

As I mentioned on the previous slide, to diagnose malingering you need to establish intent to exaggerate or feign for external incentives, in other words it was a deliberate effort by the patient. Assessment of intent can be tricky, though not impossible. You need converging evidence. For example, we've had staff in our clinic see patients outside of the hospital doing things they shouldn't be able to do based on previous symptom reports. Now this type on converging evidence isn't necessary. We don't want providers acting like PIs staking out patient's houses. That's just creepy. But things such as the patient giving different reports to different providers or other information from family, friends, coworkers, or chain of command can be valuable source of additional evidence as well. But without such converging evidence, it's best to stay outside of the head of both the patient and the provider. In other words, avoid conjecture about why the patient may have exaggerated or feigned, and don't let personal opinions of the patient cloud judgments. It's best to be guided by objective data, and that's what we're going to focus on moving forward.

Before we go further, let's clarify some terminology. If we're not talking about malingering per se, then what are we talking about? We've already mentioned the terms "non-credible" and "invalid," and these will continue to be commonly used throughout the presentation. What we mean by this is there are indicators that information and data collected on the patient's symptoms, whether obtained during interview, on a self-report checklist, or during assessment are not valid or credible for drawing conclusions about the patient's symptom experience. It's like having a lot of artifacts on an MRI of the brain. You can't interpret that MRI as valid or else you would inappropriately conclude some significant issues with that person's brain. Other terms relevant to this topic are lists here, and these terms can also be used in reports or

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

feedback with patients and they are not as accusatory or emotionally laden as terms such as “faking, lying, feigning, or exaggerating.”

On the right side are terms related to the actual assessment of effort. The two primary methods are performance validity tests or PVTs, and symptom validity tests, or SVTs. So we're going to be using those terms PVTs and SVTs quite a bit through this webinar. Sometimes these two terms are used interchangeably, though we believe they refer to separate types of assessments, and we'll clarify this later.

So even though I still haven't directly addressed the first question, it's time for another polling question. What would you estimate the rate of non-credible performance is in individuals with mild traumatic brain injury who are involved in litigation related to their injury? We'll allow a few moments for answers before we move on. The answers are rolling in. It looks like most of you are answering 33% or 40%. So let's see if you're correct. We have about an even split between 33% and 40%. Let's go ahead and move on to the next slide, please. All right, next slide, please.

So those of you that answered 40%, congratulations. Though the rates may vary based on the method of assessment and the population assessed, generally, the research would suggest approximately 40% of TBI litigants are non-credible. Other research has shown that individuals with mild TBI performed similarly to those with moderate or severe TBI on neuropsychological assessment; however this changes once you remove individuals with mild TBI that are deemed to have non-credible data, then those with mild TBI are within normal limits, and, thus, perform significantly better than those with moderate to severe TBI.

Though not on the slides, and not in the reference list due to our own oversight, I wanted to mention a few articles that have been recently published on the rates of non-credible performance in service members. A 2012 study by Ariel Lang and Colleagues at Walter Reed found 19.4% of patients failed at least two of those performance validity tests; though they clarify that, due to sample selection methods, this may actually be an underestimate. They also compared patients with mild TBIs who were deemed non-credible to patients with TBI deemed credible, and patients with severe TBI deemed credible. The non-credible mild TBI group performed worse on neurocognitive measures and reported higher levels of symptoms on clinical scales. They have a great line in their article that states, “Effort has a greater influence on test scores than injury severity.”

Another 2012 article by Armistead Jehle and Youcan [ph] found 42% of service members failed at performance validity test; however, when these were split out to those receiving an evaluation for medical wards or MEB, versus those who were not receiving such an evaluation, the MEB evaluations had a 54% failure rate versus a 35% failure rate for non-MEBs. Armistead Jehle states in the paper that a base rate of 50% of patients deemed non-credible may be reasonable to expect in VA assessments or active duty MEB evaluation. They also found similar to the other paper I mentioned, non-credible patients performed worse on scores of attention, processing speed, and memory, though there were little differences between credible and non-credible patients on measures of crystallized intelligence. And as our own Dr. Stegman likes to say, “Some patients want to look impaired but they don't want to look dumb.”

In our Concussion Care Clinic at the Womack Army Medical Center, we found that approximately one-third of service members have non-credible data. Now we pulled these rates from two different methods of assessment. What I want to emphasize is the second bullet. This refers to a group of over 200 patients who received comprehensive neuropsychological evaluations. These were individuals with mild TBI who were symptomatic for more than 30 days. Anyone with positive radiological findings or history of ADHD or learning disorders were removed from this sample. But we found 33% of this sample failed two or more PVTs. In the future we hope to publish more formal data and also include comparisons of individuals assessed for medical purposes to those who are not being medically discharged.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

So let's go to another polling question. So do you think the rates we found at Womack are lower, higher, or similar to the rates where you currently work, if you're working in a military treatment facility? Again, we'll allow a few moments for answers before we move on. It looks like, very quickly here, the data coming in that most of you feel like it's the same, so about one in three patients seem to be non-credible. Okay, great. Let's move on the next slide, please.

So we've established, then, in some patient populations this appears to be a fairly prevalent issue. The question then is why would someone exaggerate or fake to a medical provider? The primary motivation is financial gain. This is definitely the case in litigation situations and disability assessments. In fact, the argument can be made financial gain is built into the military and VA systems, and, therefore, there is always secondary gain to be had when a service member receives an evaluation. Other incentives include avoiding punishment, receiving special consideration, such as environmental accommodations, or reduced PT requirements, getting out of duty or deployment, or obtaining medication. It may also serve a psychological need or assuming a sick role.

So regarding serving a psychological need, psychological distress can manifest as physical symptoms or result in exaggeration or over-reporting of symptoms. This is the crux of somatoform disorder. There's also an emerging idea of cogniform disorder, where the exaggeration is specific to cognitive symptoms versus physical symptoms. However this is the caveat I referred to a few slides ago. It is important to note that psychological distress has not been found to be a reason individuals would have non-credible presentation on neuropsychological measures as measured by the PVTs, and we'll get into more of that later.

So now I'm going to turn it over to Dr. Stegman to address the second primary question.

Okay, this is Dr. Stegman. Let's go to the next slide, please. You know, as Wes just talked about, you know, the rates kind of speak rather loudly, around 33 to 40%, so, obviously, we need to assess for credibility. Now National Academy and neuropsychologists have official position on it, and the assessment response validity as a component of a medically necessary evaluation is medically necessary.

Now the next one is a good one from Lezak that Wes found. An examiner should be no more accepting -- accept unquestionably self-reported poor memory following mild traumatic brain injury than unpredictably accept a patient's self-report of normal memory functioning during a dementia evaluation, and I've certainly done a lot of dementia evaluations. But, you know, let's go to the next slide.

Another reason is, we call it "iatrogenesis," in other words, we can have negative effects from misdiagnosing someone, and to kind of help to understand this, sometimes just step out of the field of mental health. You know, in treating someone for a disease they don't have is certainly malpractice and can actually be criminal in some cases, so you wouldn't unquestionably, you know, just treat someone for cancer. You would have to do a number of appropriate tests, demonstrate that you did all those tests, and follow the data from that. And if the data says that the person is questionable as having cancer then you don't want to proceed with treatment, and that's the same thing with the idea of a mild traumatic brain injury. And other things we could find in here too, though, is that when treating the person, they sometimes get worse, because they it becomes a part of their identity. It's also very scary, they're worried, and so we have to be careful how we approach them. And like Larreebe has been quoted in here, you know, when we have just an uncomplicated mild traumatic brain injury it's a real set up for an iatrogenic disability if we're not careful as care providers.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

Now this is something Wes put in here as he wrote these things up. Many people are not familiar with the Daubert Decision. This came out initially in 1993. It's been modified a little bit. You know, the term that's not in here -- this was written by the judge who wrote the initial one -- is the term "junk science." And he wrote that in response to mental health kinds of testimony, and the court set a due standard. If you're going to be on the stand as a scientist, then you need to give testimony as a scientist. And if you're not, then you can be impeached on the stand. So there's various, you know, criteria that has to be met.

Is it empirical? Can you test it? Can it be refuted? Is what you're giving testimony about, is there a body of literature behind it, a bunch of publications? Is there a known or potential error rate? That's a very important one. Okay, what's the probability that you're wrong? You can say 1%. There's one in ten billion chance probability that I'm wrong. You know, when you hear about DNA testing, they'll say, "Well there's one chance in six billion that this is an error," you know things like that. Again, we just have definite standards that's known to everyone, the degree to which is generally accepted by the relevant scientific community. That sets a whole new standard.

Now the reason we brought this in here is the approach that we have here and the approach used by neuropsychologists to determine credibility of symptoms meets the Daubert standard. You know, we can testify, you know, here's the body of literature. We can testify and demonstrate, here's the probability that we made an erroneous conclusion, things like that. You know, to add a little bit in, I would like for all disability decisions to meet the Daubert Decision. That would help a lot with any of them. Next slide.

There are some things that certainly limit clinical judgment in here. You know, if even you have a lot good test data, sometimes it can be difficult when you're just using clinical judgment in here. I'm just talk about clinical judgment. Almost every study, I think all of them. I'll say almost everyone that has studied the idea of clinical judgment, the reliability and validity of clinical judgment, have found it to be very fallible, you know, no better than chance, easily influenced by extraneous factors, easily influenced by context, caught up in an individual's knowledge. So one has to be really, really careful about just using clinical judgment, and that includes a neuropsychologist by the way.

I was trying to find an article, this is kind of early 2000, somewhere in there, but there was a study where they compared just pure clinical judgment versus a computer algorithm. The computer algorithm was far superior to clinical judgment of neuropsychologists in there. So the idea is the more you get outside of your head the more you get outside of the patient's head the more objective your data, the better more reliable and valid your judgments. A study in '02, again, just to give you an idea of clinical judgment, Ray Blanford and I, years ago, Ray was the head of the Vet Center, and even though I was a neuropsychologist, I was kind of the point person at the VA for PTSD, and we were just kind of -- you know, so many people were coming in, and so we just did a little bit of a study and found that most of the factitious reports or false reports of trauma were missed by care providers, and, you know, we're talking about some pretty obvious things. You know, an M-79, which was a grenade launcher, is not a rapid-fire instrument. You know, they didn't hand someone a .44 magnum carbine and put them out in the jungle by themselves for seven to ten days to be a scout sniper, you know, things like that. The CIA didn't pick people out of basic training and drop them in North Vietnam, things like that.

Okay, now how do we go about assessing this now? Again, this is very methodical. This is very methodical. This is planned. We review the literature. We update it, things like that. But it's an approach that involves multiple methods, multiple points in time are typically required. We already have a space to understanding the validity or the credibility of examinees. In other words you don't just do all the beginning, all at the end, you space them out. And you could even get some various patterns in there, okay, so now we'll find someone. It starts out being non-credible, gets the idea for whatever reason they can do it or maybe they better get credible, or the latter two-thirds of all the tests really looks good.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

Some guidelines; one, you just have some credible data. One, you look for consistency in the history, although, again, the self, very often we'll just accept self report, but it's in the uncommon for a person of the initial report is -- or there was a concussed event, alteration in consciousness. Well by time -- maybe two years later, now they were in a coma for one-and-a-half days, you know, things like that. You look at the reported symptoms. Do the tests qualify? Does that make sense? You have to understand a lot of about the patient, the present situation, personal issues, social issues, their emotional disposition, things like that, how they're reacting to their symptoms and their complaints. And quite often they're just so relieved when someone says, "Yes, this is scary. This is frightening. You know, you have trouble talking right after the event, but it's going to get better," things like that. Okay, next slide.

Again, some other things in here, it certainly requires careful analysis by an examiner. This is not done just quickly. We really look at it, and we really look at, really, the objective nature of the data. I sometimes describe this to patients. This is like blood work. I just want to look at the numbers and see what they tell me. Now in terms of performance validity measures, symptom validity measures, there's established cutoff. These are in the literature, and, again, these are constantly being updated. Recently I took probably about 300 cases or patients and reanalyzed them and kind of fine tuned some of the cutoffs. So then you have all this scientifically-based validated measures, you know, of neural cognition, as well as validity, and then you start throwing in your clinical judgment up in there. Next slide.

This is a very busy slide and one could talk about probably, you know, just an hour in and of itself. You know, again, self-reported, and the documented history, what they're reporting and what was actually documented in the record if that is available, and that is getting much better given the computerized record system. What they're reporting is symptoms, and what they're actually -- the actual physiology of an individual. I mean I had a fellow recently where I'm sitting there with the left hand isn't built like what he was trying to complain about or trying to demonstrate to us. That's just not part of anatomy, the observation. You know, sometimes it helps people to understand what we kind of experience here as neuropsychologists, picture someone walking into your office, sitting down in the chair, and you say, "What I can do for you," and they tell you with a straight face, "I'm paralyzed from the waist down," you know, and we get that. In the neural cognitive sense, we get that quite frequently. They will come in with symptoms they just cannot possibly have.

Again, collateral report, what does the spouse say? What do they say in the unit? Again, it's sometimes what we observe around here, things like that; the reported symptoms and their actual functional skills, you know, people are reporting how terrible their memory is and thing like that, but they're getting just superb performance appraisals. Again, disease course, people don't get worse, they get better. And we'll occasionally have somebody get worse. Again, their test results, what are people -- again, sometimes the reports test results are even better in there. So, okay, again, one could talk about this slide for a great deal of time. Wes is sitting over there shaking his head yes. Okay, let's go in the next slide.

Now symptom validity and performance validity, I'll use it interchangeably. We make a distinction in here. Now a symptom validity major is more of -- understand is more of a self report measure where the person looks at and rates on a scale one through five how bad something else. But one needs to be careful about confusing a self-report with an actual functional measure, and I've seen occasionally where someone will use a self-report measure about memory as a functional measure. Those are two different things, you know, and we have a number of standard ones. We pretty much use the MMPI. Mainly they're restructured factors in here. That's just part of our standard of care. Okay, next slide.

Okay, now performance validity, these are the types of things who are actually measuring functional ability to perform various things, various cognitive tasks, various motor tasks. Now on these performance validity measures, this is a quote from Larrabee. He's one of the main people with development of some of this technology. You have to try hard not to do well on these tests, and we'll have an example of that for you later on. There are basically two types, one is free standing. This is the test that looks like a really

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

good cognitive functioning test, but it's actually designed to assess the effort, how much energy the individual puts out to not perform well. Now some of these are also standard tests that have been converted, so they kind of serve a dual purpose. Then we also have embedded measures, and these are standard neural cognitive types of tests, but within them there are various measures. Now these are added or we've done analyses and they find, "Well, gee, this particular of this particular measure works very well as a validity measure." Okay, next slide.

Now the performance validity measure does not necessarily have to be cognitive. I've had the wonderful experience with working with some great neurologists over the years and just marvel, they'll have the patient lies down and doing the various things, you know, hold up your right foot while I do something else, and, of course, if they really had the disorder they talked about they wouldn't be able to hold up their right foot. You know, physical therapy, they have a great methodology in here, you know, and it's normal for a person to kind of rock back and forth, but they don't rock side to side and things like that. We have some great speech and language pathology people in here that work with it, and they do kind of similar measures, and they're great for when I write reports because I can quote from them about how well they're doing over there. Again, even with that, you have to look at -- how does all this work with the reported symptoms, the clinical history, known physiology, and, of course, is there something to explain it. Oops did we just get disconnected? Okay, next slide, and I think this is where we get into the example of a test.

Okay, now there's going to be three version of this. This is going to be done by hand, the central point. We set this up, but they can't do it automatically. But you're going to be shown one of two markers, a red one or a blue one. Now when prompted -- after the slide goes away, then you just name the color of the marker you just saw. It's going to be red or blue. That's all you have to do in particular point in here. Okay, go ahead and run that. Okay, good. Notice how easy that was.

Now let's go to the next slide and we'll get into the next series. Okay, now we're going to do the same thing, going to show you one of two markers, a red one and a blue one. But this time when prompted, I want you to name the wrong color, say red for a blue marker and blue for a red marker. Otherwise everything else is just the same. Go ahead and run through it. Okay, good. Now what I wanted you to notice from that one, it took just a little bit more energy and effort to get it wrong than to get it right.

Okay, now we're going to do one more. Let's get us to the next slide. Okay, now this time, again -- oh, okay. Oh, Wes wanted me to add there's no need to type in your answers on the chat. Okay, yeah, you can just say it out loud to yourself. We're going to do it again, one of two markers, but this time I want you to be real sophisticated about it. You're going to really try to fool me, and so what you're going to do is you're going to only get three of the items wrong, but you want to make it look random. You don't want to make it look one, two, three, four, five, six, or seven, eight, nine. Just pick three like two, seven; nine, or two, four, seven, something like that. Just make up your mind ahead of time, and we'll try to give you a little bit more time between the trial, but we just want you to pick three of them. The rest of you get right, okay, so run it through it. Okay, good. Just go to the next slide now.

Okay, you know, getting some thoughts in there, again, just took a little more energy to name the opposite than the correct color, and it took a lot of effort. In fact, in order to do the random -- look like you had a, you know, problem, a neural cognitive problem, by missing three of them, you had to demonstrate intact functions. And in the a way, we've just kind of taught you conceptually, this is how we go about -- we're restricted by law, civil law, and criminal law actually, about how much we can reveal, because this is copyrighted and things like that. But even the way to look at it, if you just closed your eyes and if I just said give me, say, red or blue, you would have gotten, you know, four, five, or six correct just be chance, so when you get someone who only gets one correct, you can pretty well say they're putting in a lot of

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

effort. So that's the nature of -- just conceptually, this is how we go about it. And I think we're into you again, now, Wes.

Okay, thanks. Let's go ahead and go to the next -- no, actually this is correct. This slide is correct. Sorry about that. So now that we've defined PVTs and provided you with an example, let's discuss how these are actually used clinically. These tests are not administered in isolation and should be given as a battery of tests. A multi-method approach is recommended, as this accounts for any psychometric shortcomings of individual tests. Also, failing one PVT is not uncommon in credible patients. A paper by Binder and Colleagues investigating score patterns on neuropsychological testing stated that it is normal to have abnormal scores, and the same applies to PVTs.

Also, these tests should not be interpreted outside of clinical history and other test results. This goes back to the consistency slide Dr. Stegman discussed. And as Lezak in her seminal neuropsychology book wrote, she has a great analogy, "PVTs are like thermometers, positive findings suggest a problem is present, whereas negative findings do not necessarily rule out a problem." In other words, just because an individual passes all PVTs does not mean they are credible. And, again, one must consider the consistencies of the patient's history and medical record, observed and reported functional abilities, and overall test performance.

So earlier, Dr. Stegman mentioned that PVTs have established cut-off scores; that is, an individual putting forth minimally adequate effort should score at or above that cutoff. Statistically these scores are set to be strong indicators that there's some sort of effort on the part of the participants. There are multiple ways these scores are set during test development, and this includes using healthy subjects who are instructed to feign, using patients who are at increased risk for feigning, using patients who fit criteria for non-credible or inconsistent performance, and comparisons to other well established PVTs. So the last two methods, known as "known groups" or "criterion groups" are what are known as the best methods establishing cutoff.

All right, I feel ethically obligated to warn you all that a statistics discussion is ahead. I would like to prompt the large payoff in the end, but my past experience in behavioral therapy taught to me to set realistic expectations, so please just hang in there. Okay, so the quota on establishing cutoffs on PVTs are the issues of sensitivity and specificity. If you've ever been exposed to these in an intro to methods or stats class you know the first time you learn about them can be a little mind bending. Hopefully that experience is not repeated here. So sensitivity refers to catching as many patients with a condition as possible. That's why I compare it to a fishing net. You want to catch as many fish as you can, letting very few slip away. But you may also get some other things in there that aren't fish, but at least you haven't let too many fish get away.

Specificity is much more, well, I guess, specific than sensitivity, thus the name. And that's why I also liken it to a fishing pole. A fishing pole allows you to only catch fish and not all those other things a net may catch. So with specificity, you want to let those other things stay in the water. Stated more statistically, sensitivity refers to the chances of having the condition if a test is positive, and specificity refers to the chances of not having the condition if the test is negative. In setting cutoff scores, the goal is to get 90% specificity while maximizing sensitivity. So that would give you a 10% false positive rate; that is, 10% identified as having the condition who actually do not have it.

So after you've established the sensitivity and specificity of a test, you need to account for the base rates of a condition in the population. So in our case, we believe that approximately 33% of patients are non-credible, so the base rate is 33%. This affects the rates of false positives and false negatives. So if you think about it, if 67 out of 100 patients are credible, because the base rate's 33% non-credible, 10% of those are at risk for being falsely identified as non-credible if we have a specificity of 10%. So that means six to

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

seven patients out of ten are at risk to be false positives. If 33 out of 100 are non-credible, and 10% of those patients are falsely identified as credible, then only three to four patients out of a hundred are at risk for being false negative, almost half the rate of false positives. So the base rates really do matter. They're going to affect your identification rates.

So failure of this may lead to what we know as the "base rate fallacy." So base rates become more important to consider when the prevalence of your condition is smaller and smaller. So what we do to account for this is calculate what's known as "positive predictive" and "negative predictive" values. These incorporate your established sensitivity and specificity, as well as the base rates of the condition, and it is a more accurate indicator of the predictive value of your test, so positive predictive power is the probability of a diagnosis -- in our case non-credible -- given a positive test result. Negative predictive power is the probability of no diagnosis, so in our case credible, given the negative test results. So with sensitivity, specificity, positive predictive, and negative predictive power we want to maximize the true positives and the true negatives, as indicated on the table on this slide.

So let's do an example of positive predictive and negative predictive power just to sort of illustrate this. I included the actual formulas here that you use to calculate these so you can get a sense for how sensitivity, specificity, and base rates are incorporated. Positive predictive power focuses more on sensitivity, thus the chances of having the condition with a positive test results. Negative predictive power focuses more on specificity, thus the chances of not having a condition with a negative test result. You can also see from the formulas that positive predictive and negative predictive power take base rates into account. Let's go into the next slide, please.

So continuing our example, let's take a PVT with a 90% specificity and an 84% sensitivity in our clinic's base rate of 33%. We take the formulas from the previous slides and plug in the numbers where appropriate, and the end result is we get a positive predictive power of .72 and a negative predictive power of .95, and I have what those mean there on the slide. So compare the positive predictive power to the 84% sensitivity and the negative predictive power to the 90% specificity and you begin to see the influence base rates there. Next slide, please.

So the end result is that if we get a positive test result there's a 72% chance of that individual having the condition. If we get a negative test result, there is a 95% chance of that individual not having the condition. But this is kind of ideal when identifying non-credible patients. You would almost rather let a few non-credible individuals slip through the cracks than falsely identify a credible patient as non-credible. Although you really don't even want that to happen, and there are ways to improve on these numbers that we'll address next. So let's move on the next slide, please.

So earlier we mentioned using multiple measures to account for psychometric weaknesses. So from the example I just discussed, hopefully, you can see how just one measure could lead to higher desired false positive or false negative rates. When combining measures, you can significantly increase the positive predictive and negative predictive power. Just two measures with a .72 positive predictive power combined will increase your positive predictive value to over 90% confidence. So statistically, with clinically appropriate sensitivities and specificities, a clinician can reach almost 100% certainty with as few as two to three PVTs combined. In the strength of this, PVTs with methodological redundancies, so two things relied heavily on visual processing or visual memory, should be avoided. Next slide, please.

One thing I didn't mention when talking about that were receiver operating characteristic curves. We debated about how much detail to go into about the statistics and how these are determined. But just know there are statistics you can use that basically plot every sensitivity and specificity, every potential score and a measure, and from that plot you can really get a sense of where both your specificity and sensitivity are maximized and what score that coordinates with, and that's really one of the ways that you

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

can set your cutoff scores. So there's a lot more to that. I really didn't want to go into too much detail because eyes sometimes start to glaze over.

But on this slide, now that we know what PVTs and SVTs how, how they're developed and how cutoffs are set, and the importance of using at least two to three in an assessment, let's discuss how we actually use these clinically. So they're incorporated into an assessment and masked as tests of cognitive functioning. Obviously embedded measures are a part of an actual cognitive functioning measure. But free-standing measures are designed to look like cognitive measures as well. Many of them appear to be, you know, like a memory-base test. It is often recommended that free-standing measures are given earlier in the assessment, and though we discuss using multiple measures, we also haven't discussed exactly how many you should use, or at least how many failed PVTs are needed to conclude non-credible performance. There are differing opinions and criteria.

First is what's known as the "Slick Criteria" after the 1999 article by Slick and colleagues. This states that two or more failed PVTs constitutes enough confidence to conclude non-credible presentation. Other leaders in this areas, primarily Glenn Larrabee, who we've already mentioned, and Kyle Boone who has written a book on this topic and published on this, they have both suggested independently that three or more failed PVTs can be used as a cutoff, as one can be fairly certain of non-credible presentation, given that research shows less than 1% of credible patients would fail three or more PVTs.

According to Larrabee, failing four or more PVTs is not known to occur with credible examinees. Larrabee also calls one PVT below chance the "smoking gun" of effort assessment, so, for example, on a forced choice measure where examining can give one of two responses, you would score 50% by just blindly guessing the answers. Scoring below chance shows knowledge of the correct answer and deliberately giving the wrong answer. So thinking back to the red/blue marker example of the PVTs, most of you probably realize that deliberately answering incorrectly takes a certain level of cognitive effort that's likely not available to someone with actual impairments. Next slide, please.

All right, it's been too long since we had a polling question, and this one is for people who use PVTs, SVTs, or other effort indicators in their assessments. How many failed tests do you require before you conclude the assessment or symptom report was valid or not? And I'll allow a few moments.

It looks like the vast majority are answering "two or three." Most people are using two, so we've got a lot of fans of the Slick criteria, and it's certainly appropriate and well justified to use that criteria. Some of you are a little bit more stringent and go with the three. Okay, great.

So what I'm going to do now is turn it back to Dr. Stegman. He's actually going to go over a few case examples that we've put together for you.

Okay, just some case examples and the number, of course, this has evolved over the last three, four years, but I will typically anymore use nine or more performance validity measures when I do a comprehensive assessment. Next slide.

Okay, this is, you know, he's male, 22 years old, he had a moderate TBI by standards. We just went back -- oh, there we go. Certainly he has positive radiological findings. Now what this poor kid had was cortical blindness. Now what that left him was 38 degrees of vision in one eye. Neurocognitive testing, he was average to lower average scores overall. Actually, he scored better than I thought he would. But the point is, all the performance validity measures that we used in here, we gave it seven, he was just great on all seven of them, even though he had definite, you know, positive radiological studies. In other words, the point is that people who actually have true cognitive disorders still pass these things. Next slide.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

This is again, a male 27 years old. He had a penetrate. It was a gunshot wound, and, you know, the bullet itself lodged in the lower right occipital lobe, and the radiological study, you could actually see the trajectory, it was a bullet that kind of entered in the right temporal area. Now most of his scores were within normal limits. Again, we found just -- I didn't find near the visual spatial things I thought I might find but, you know, some limitations with attention and memory functioning, mainly the idea of just being about to get things organized to put into memory. But, again, of seven measures that we're looking at, he passed all seven of those performance validity measures. Okay, next slide.

This one, okay, this is a male 27 years old, again, mild traumatic brain injury, that's not in question. The CT scan was just great. I put minimal functional impairment just to give him a break and stuff like that. But all of the scores, you know, you talk about attention, concentration, memory, visual/spatial, motor, everything was in the impaired range, but he also failed to meet the cutoffs on every one of the performance validity measures. Okay, next example.

Again, this is a female, 36 years old, again mild traumatic brain injury. That's not in question. Again, radiological study was normal. Again I, put down minimal functional impairment. Again, all scores were in the impaired range, you know, in terms of, you know, all the major functions. Again, she failed to meet the cutoffs on seven of seven performance validity measures. Okay, next slide. \

Again, this is another one again with a positive study. This one had an atrial venal malformation. They went in to do a surgical correction, which is, you know, they used what they kind of call an "embolism glue," and what happened there was that kind of broke loose and kind of traveled around the brain. You could see that on his radiological studies. He had quite a bit of variation. He had some normal -- within normal limits to outright impaired on some of the functions, but, again, he met the cutoffs on seven of the seven performance validity measures. So, again, your people with true impairments do well on these things. Okay, next slide.

Now this is evaluation late 2009, negative radiological study. This is interesting, where he actually -- I think, if I remember correctly, his IQ was 126, full-scale IQ, but all the other scores were borderline to profoundly impaired. I think, if I remember correctly, it was something like 72% of all functional measures were in the impaired range. But, again, he failed to meet cutoffs seven to seven of the performance validity measures. Okay, next slide though.

Now, this is the exact same person almost a year later. Then this is after some good therapy. We had just a really good psychologist, helped him understand a lot of things about himself. He came back, did the exact same testing with me. He met the cutoffs and all the validity measures, and he had one score in the low average range. Everything else was average to very superior. Again, this is a demonstration of the power of these kinds of tests in there. I think that's all. Okay. Okay, next slide.

Now these might seem as kind of extreme, but these are not unusual at all. And you could even get -- you know, I've seen this high as, you know, 70% of all the scores are in the impaired range is not uncommon. I've had as high as 96% of all the functional measures to be in the impaired range. And some of these I might give feedback, and we'll talk about that later on. Like I used the "greatly disabled" notion, you know, it's a legal notion, you know, where, if we were to accept these scores as valid, we would be obligated to immediately put you in the -- lock you in the psychiatric board, have you declared incompetent, find you a place to live that's a locked facility, things like that.

Another kind of understanding, again, you know, what people will do in here and how I use that anymore is, like, the scores I would have gotten had the examinee not been in the room, you know, you would get a scale score of one, a percentile score of less than one, more than minus three standard deviations, you know, things like that. And I remember when I had 57% of all the scores were the exact same scores I

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

would have gotten had the examinee not been in the room. That's not uncommon. I had one recently with 27% of all the scores like that. It was like "How much is two plus two," "Zero." You know, I mean you get a zero because there's no answer, you know, things like that. So we can get some really – this is not unusual for people to give us scores like that.

[Inaudible].

Okay, this is Dr. Cole again. I'm going to take over here. We did have a question from the audience about identifying the PVTs that we use. We actually made a decision not to do that in this webinar. One of the standards of care is to try to keep these measures under wraps. There's actually -- Steg uses the term "trade secrets." So, you know, we'd be happy to share that information with anybody that would reach out to us and contact us, but we didn't necessarily want to put them out there where anybody could access them and maybe get the names of these, just to kind of protect them. It might be a little bit overkill, but we just wanted to do our due diligence here. Okay, let's go on and move to the next slide.

All right, as we wrap up the webinar we wanted to leave you all with a great resource. So if your patient is non-credible, what do you do then? So there was an article published in 2010 by Carone, Iverson, and Bush in the *Clinical Neuropsychologist*. The full reference is listed towards the end of this. This article deals with the potentially uncomfortable situation of having a patient with non-credible symptom presentation. It's difficult feedback to give a patient and they can become defensive, angry, or dejected. However, there is an ethical obligation to provide such feedback to patients. And the authors emphasize that honest feedback can go a long way to avoiding discomfort and preventing the patient from misunderstanding the meaning of the feedback.

So the authors break down the patient/provider interaction during these situations where you've evaluated them and they're non-credible. They break it down into three phases. The first is establishing rapport and setting up appropriate expectations for testing. They point out that having rapport with patients does not equal blind advocacy. You can develop rapport with the patient while letting them know that you're going to be data-driven in your conclusions. It's nice sometimes to blame the data instead of your own interpretation. Also, it is important early on to inform them, to some degree, about effort testing. There is some debate in the field if you should explicitly tell the patient you're testing for effort or not. However, it is generally acceptable to encourage them to put forth their best effort. But it is never okay to identify specific PVTs or SVTs before or after testing, and that kind of goes back to why we decided not to put these explicitly in the presentation. Next slide, please.

So on the phase two, which occurs during or immediately after the actual assessment, early on in the assessment you're going to get indicators that the data will be credible or not. Remember, I talked about administering the freestanding measures very early in the assessment. So sometimes, you know, within the first hour of the assessment, you know if somebody is going to be putting forth decent effort. So then that raises the question if you should even continue the assessment if they are clearly not putting forth decent effort. And some people feel like it's okay to go ahead and discontinue, but if you do so, you should administer a few additional measures just to mask the PVTs. Otherwise, they're going to be easily identifiable to the patients.

If you continue with the evaluation, you can actually obtain additional information about the presentation. So remember the quote, "Patients may want to look impaired, but they do not want to look dumb," again, this is from our own Dr. Stegman and not this article. So, in other words, patients may very well show indications of intact functioning on some measures, but perform on other measures in a manner not consistent with their injury history or functional abilities. This is like the case example number six that Dr. Stegman talked about.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

So early on in the assessment, and immediately after, is a good time to begin holding some preliminary discussions with your patient. You can ask them if they had any trouble persisting or maintaining effort on any of their tests; and phrasing it in that matter, that is avoiding any emotionally-laden language, can help decrease defensiveness later in feedback sessions. Next slide, please.

Phase three, the final phase, this is the feedback phase. And the goal is to keep the focus on the objectives. Be sure to be clear that the data is driving the conclusions. So feedback can be started as a general conversation such as “How do you think you did?” And I’ve done this before and I’ve had patients say, “You know, I really had a hard time staying focused on this,” or “You know, I just blew this off, I really did, I’m sorry,” or, you know, “I was on 24-hour duty before and I hadn’t slept in 36 hours,” or “I had a bad headache that interfered.” Sometimes patients will just admit I really did not put forth my best effort, and that makes the subsequent conversation a lot easier.

But when explaining poor scores on PVTs, comparisons to severely impaired clinical groups can be helpful. And you can include the use of graphs, like the normal bell curve, to visually demonstrate how poor their performance was. So if patients with dementia perform here, as I point to the low end of a graph, then your performance was here, as I point even lower on the graph. And the conversation can be framed as “good news/bad news.” So the bad news is that your scores were really low at this really low end of the graph.” With the clinical group comparisons and graphs patients are often going to realize that those scores are much lower than what their actual abilities are, and that’s the good news. You, as the provider, do not think these scores reflect their actual abilities; rather, with improved effort and addressing some non-neurological factors, your scores on testing will likely improve. Next slide, please.

So, Carone, Iverson, and Bush discussed several other key issues. One of these is regarding diagnosing and malingering. They state that if malingering is diagnosed, the provider needs to clearly document how this decision was made and provide an adequate description of the diagnosis to avoid any misunderstandings. Other topics reviewed in this article include how to handle conflicts with patients, how to handle complaints to the oversight authorities, and alternative views of this overall issue. Again, we feel that this is a valuable resource for any provider and encourage you all to seek this article out. All right, next slide, please.

Okay, you’ve made it to the end. Congrats. Hopefully you found this interesting and informative. So we’re going to open up the webinar to questions, but before we do this we would like to return to the three primary questions we asked at the outset of the presentation. Number one, is symptom credibility a problem facing providers in military treatment facilities? Simply, yes, it is. As many as one in three patients may be non-credible, with rates potentially higher when we’re conducting disability assessments. Number two, why is assessment of symptom credibility important? Well the rates speak for themselves, but it is also the standard of care and it’s going to lead to more accurate clinical care. And number three, how is symptom credibility assessed? With PVTs and SVTs, taking a multi-method approach during assessments, and we also covered how the cutoff measures for these scores are developed and what the criteria are to determine non-credible performance. Next slide.

And finally, before we turn it over to questions, we wanted to quickly revisit the learning objectives. Again, we discussed the rates of non-credible performance and why patients may exaggerate or fake. We discussed how traditional measures or symptom assessments, as well as clinical judgments, are not sufficient for making these determinations. We discussed the value of using objective data from PVTs and SVTs and how statistics lend confidence to the conclusions drawn from these tests. And regarding the standard of care, we reported on the NAN statement and other professional guidance for assessing for effort as part of evaluation. And regarding the last learning objective, by having a greater understanding of PVTs and SVTs and how they are used, you can discern if these were accurately utilized in an evaluation when you’re reading in a neuropsychological report.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

All right, so these are the references that we used for the proceeding talk, most of them. We really appreciate your time and attention. And we're going to use the remaining time for questions from the audience.

Great, thank you very much for your presentation, Doctors Cole and Stegman. You know, this topic can oftentimes be somewhat controversial and there are times where it can also grow into sort of an inflammatory sort of conversation. So I want to try and pick as many questions as I possibly can from the audience, get your thoughts as we go through this. Please, to the audience, please submit your questions to Dr. Cole and Dr. Stegman via the question-and-answer box on your screen. We are monitoring the question box and we'll forward questions to the presenters, or actually hand those questions over to them for response. And we'll do any as time can permit it looks like in the next 15 to 20 minutes.

As I'm looking here, the first question comes here, "As you stated in your talk, neuropsychologists routinely use measures of effort and position statements from leading neuropsychological organizations clearly state that measures of effort are an essential part of a neuropsychological evaluation. The position statement of NAN even goes as far as to stating that the clinician should be prepared to justify a decision, not to assess symptom validity as part of neuropsychological evaluation. One of the standard clinical pathways in the DOD and VA medical health system is to administer the NSI and PCLC. More often than not, these measures are administered and interpreted without evaluating symptom exaggeration. What are your thoughts about this clinical practice, and what would the DOD and VA justification possibly be for not assessing symptom exaggeration under these circumstances?"

Steg and I are pointing at each other. We certainly don't want to speak for the VA or DOD and why they would not justify assessing that. You know, we certainly feel very strongly about including these assessments and not interpreting results without having a sense if the symptoms reported by the patient are credible or not. There are ways that you can build effort assessment or, I guess, symptom credibility assessment into measures such as the NSI. There are actually questions that can be built in there to determine if it's a credible report or not.

I think it's a really interesting topic though, because, as we know, as clinicians we struggle to try and get as many tests in during the amount of time, and batteries tend to get smaller and smaller, and some of these self-report symptoms, like the PHQ-9, tend to get smaller and smaller. There's another question here: "For diagnosing malingering, does one have to prove that the patient knows about specific benefits of worst performance?" Did you hear me, gentlemen?

Yeah, I hear the question. I'm just kind of formulating the answer in there.

Sure.

You know, the payoff is pretty obvious. I mean I could kind of go off into a whole other topic in here. There's a whole culture about all this. I spent three decades with the Department of Veterans Affairs dealing with that, and then people talk to each other. They know what to say. They know how to say it. They know what to do to increase their disability. So there's a whole culture out there, and so that's more, you know, kind of a given.

And a couple other thoughts along that thought too, Martin Mossman [ph], he was a psychiatrist I happened to know, you know, when I was in Dayton, Ohio, wrote an article in there. He looked at it rather uniquely. They gave 100% service connection with the Department of Veterans Affairs. And he figured that – you know, this was about 1991, circa, something like that. But you figure 100% service connection is equivalent to about a \$60,000 a year job, and that was just kind of a shocker for a number of us. I took

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

off from that and kind of figured out currently, well if he's throwing in inflation, the idea of many times now you also get social security disability. You also now get the caregiver provider who gets a set of money as well. And that equates to about \$110,000 a year job. So there's just pretty much just face evidence that there's a payoff with this.

Great. The next question that I have is someone asked "Does the number of performance validity tests, the PVTs identified in your presentation, include standalone and imbedded measures or are you talking really about two standalone measures, two to three?"

I will customarily use nine or more, and those are a mixture of freestanding and imbedded. Again, all of them are well-established in the literature.

Yeah, really, it's just based on any PVT, freestanding or imbedded. You know, to take some of the recommendations even further, it's a good idea to have, you know, at least one or two freestanding measures in there. For example, for the screening evaluations we use here at Womack Confession Care Clinic it's an hour-and-fifteen-minute evaluation. But we include one freestanding measure and three embedded measures, and we use those as our primary credibility or effort detection.

It looks like we're now entering the more provocative section of the Q&A, so I hope you gentlemen are sitting down. There's a question about how do we handle Purple Heart issues? And you might want to keep your responses somewhat short, because I know you could talk about this for an entire hour.

I'm not sure I really know what that means, what they mean by Purple Heart issues.

I think what the question refers to is in terms of with the diagnosis of TBI that qualifies an individual for Purple Heart, and we're talking about –

Oh, well, you know, here's the thing, TBI is an event, it's not a diagnosis. And if they're non-credible on our evaluation we are not saying the injury or the event did not happen. All we are saying is we do not have the data to make any determinations about their current neurocognitive functioning. So we're not passing judgment on the event or their past experiences, and this is something that really needs to be made clear before the assessment but also during feedback. And I think that failure to do that is what leads to a lot of the defensiveness on patients. But we're not saying they weren't injured. We're not saying they're not having difficulties in day-to-day life. All we're saying is that evaluation does not tell us anything about the way that they are currently performing on those tests because we don't have credible data. So, you know, we're certainly not going to use those to refute any Purple Hearts that are awarded for injuries sustained. What we're going to do is use that information moving forward for treatment recommendations or possibly, you know, even any kind of disability payments that they might get.

Yeah, and I'll add to that though kind of the other side of the conclusion is, you know, I do have credible data and I can say, you know, I do – my favorite diagnosis is V71.09 "No diagnosis." But I make it quite clear in the feedback that the event did occur. I even make that -- almost always make that clear in the report itself, you know, all your neurocognitive functions are intact. That, by the way, is not a judgment about anything else. You're still having headaches. You're still having some dizziness. Okay, well we have some interventions for that. All we're saying is your brain is okay.

Yeah, and just to add one more thing before we move on to other questions, I think one of the challenges of working with this population is that you're working with individuals who have served our country and that may or may not have been identified also sort of as heroes, and that's very difficult for some people to discuss symptom validity issues and those kind of personal views that they have of these individuals and their accomplishments.

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

Someone asked, "Do you have any advice about how to communicate invalid results to non-psychologist colleagues who are not familiar with validity tests?" The old "the test was invalid so, therefore, can you test them again and get it to make it valid."

No, that's not a good idea. What I try to do is, both in the report as well as talking with them, is try to put this in a sense of – I think I talked about the gravely disabled notion. I said if I were to consider these scores valid this is what we would have to do. Or, like, say this person gave me scores that I would have gotten had he or she not even been in the room. That kind of helps communicate the gravity of it. I'll also advise it's not a good idea to immediately retest, although we do do that on occasions, but usually that's when the individual comes in, "Okay, I blew it, I want to give you good data this time." We have done that. And more often than not they give us good data, but we just don't routinely come back and try to give, you know, valid, because it's up to them to give us – the patient to give the good valid data. We can't make them do it.

What would you guys say are the advantages and disadvantages of standalone versus imbedded measures?

I like both of them.

Yeah.

I wouldn't necessarily focus on one over the other. They both have wonderful ability. The imbedded ones tend to be more efficient because they're part of a test that you're giving anyway. But the standalones just have a good validity and reliability in and of themselves. Particularly, like some of these have been former that were known as neurocognitive types of tests, but they've been converted, and I really like those as well. But, again, it's important to use a good variety. Try to not to use all of the same types, because when you get into your decision-making, the idea of you accept -- okay, you'll accept your one out of ten, you're wrong. But if when you have two of them that are positive, then there's only one chance in a hundred you're wrong. When you have three that are positive, there's one chance in a thousand. When you have four that are positive, there's one chance in 10,000, that's provided you use good independent measures.

There's a question in here, and it's a little bit more broad, but it's talking about if you could expand a little bit. I believe, Dr. Cole, you had mentioned the idea of cogniform disorders and what does the research suggest about individuals with psychological distress or what we might consider to be somatoform disorders and symptom validity testing.

So, you know, to be fair, there is limited research on this. But generally the research does show that a psychological disorder alone is not going to be the cause of difficulty performing at the cutoff levels on these performance validity tests. In other words, somebody that fails a performance validity test is not going to fail it because they're depressed or anxious, you know, or some other psychiatric diagnosis. That's not going to result in it. Like Larrabee says, these tests are very hard to do poorly on, even in the context of a psychiatric disorder. You know, but it is an area that needs more data and more research. But the research that is out there does show, especially I believe it's depression that's been primarily linked to it, that it really seems to have no impact on performance validity measures.

Gentlemen, what about your thoughts about the use of the "M" word? Do you ever make a diagnosis of malingering? Or what about the potential ramifications of such a word like possible UCMJ action against a service member?

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

This is where you will get some disagreements on it. This is Dr. Stegman. I am comfortable doing that, and for a variety of reasons. One is that what I do is consistent with the Daubert decision. In other words, if you called me into a courtroom or a court martial, I could defend everything on the stand under very intense cross-examination, and I could demonstrate that there's a database behind it, research behind it, how I went about it, things like that. But it's data-driven, it's not just me making the decision. It's me responding to the data. So I'm okay with that. I don't like doing it. And we do it on certain occasions here.

What we prefer to do is what we just have here are non-credible data and see if we can't work it more into a rehabilitation kind of model. But if it's really indicated, I'm okay with doing it. Now I've never seen anyone do any sort of UCMJ action with it. It's interesting that in a way it is a bit of a form of fraud. In fact, one of the things I did about a year ago, I'm sitting there thinking, well, if I just look up the definition of fraud, and I find the definition of fraud and the definition of malingering to be remarkably similar. Among other things, you know, that in order to convict someone of fraud you have to show that there was intent. And we certainly we do that in the courtroom all the time.

How about – you know, so you have a service member or a veteran in front of you and you've given multiple symptom validity and performance validity measures, and let's just say that they're all – they fail all those measures. And so you're fairly confident that this individual put forth sub-optimal effort, or however you characterize it. You know, what do you do with the patient and what kind of recommendations, if this is in a clinic environment, you've discussed them sort of according to your things, what kind of recommendations would you make to the other care providers in terms of figuring out what to do with them?

One of the first recommendations is to be cautious of their symptom reports and just maybe look at them a little bit more critically than you would. I think you also want to focus on what you believe may be the issues driving this, if it's just needing reframing, you know, if there's maybe more tangible things like headaches or sleep disturbances that you can address. And that's something that we see a lot in this clinic, is often it's more physically driven, you know, sleep disturbances, headaches that might be driving some of the symptoms they're having in day to day life, yet they're adamant that their brain is dysfunctional. And so if you can just do some work with them maybe working with a rehab psychologist or other mental health provider to start reframing the way that they're thinking about their current symptom presentation, you can also often begin helping them. Sometimes you're just going to get difficult patients who are going to be difficult to treat.

I've got to add to that.

Sure.

You have to keep in mind though too, you know, that they may be feigned with us, yet they may well have legitimate vestibular problems. They may well have a legitimate visual problem. And so we need to keep that in mind. If we're crossing the pad the other way, where they really feigned with rehab or let's say with physical therapy or occupational therapy and then just do fine with us. So we need to keep in mind that sometimes these can be rather specific. And we don't have a good literature base yet on how much – what extent these things are generalized. The thought is that, to the extent that a person wants to be disabled, these things are more likely to be generalized.

Okay. You know, given the fact that those of us that work with this population kind of recognize that there's a very, very high comorbidity of psychiatric conditions and psychological comorbidities, is there any literature out there looking at the relationship between cognitive effort measures and correlations with over-reporting in psychological symptoms, so kind of comparisons of PVTs and SVTs?

DVBIC Monthly Webinar Series: Hot Topics in Traumatic Brain Injury

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility July 17, 2013 – 1-2:30 p.m. ET

Things are rather preliminary with that. We don't have a real good database on it. I can just give you my experience here, as we're running through many, many of these comprehensive assessment intakes. All our comprehensives, by the way, involve an MMPI-2-RF, and that certainly there is a correlation. People who put forth a lot of effort to perform poorly are tended to elevate on the validity measures, on the MMPI-2-RF, or even on the clinical scales as well. A while back – well what kind of triggered an article we're working on in here is that I just took – I had, I don't know, about 250 patients in there and divided them up between credible and non-credible on all the neurocognitive measures and found on almost every neurocognitive measure, this might full scale intelligence or trial one on the Delis-Kaplan Trail Making Test. The statistical difference between the two groups was always .0000. The package SPS package doesn't go any further. It doesn't refine it any more than that, and that's incredibly significant.

I also did that with the MMPI-2-RF scores. Again, almost every score was statistically significant from each other between the two groups. But there was not a one-to-one correlation between that though. I've seen people give me really low scores with great MMPI scores or just look really normal, really great neurocognitive measures, and then just really exaggerate on the MMPI.

And, like I said, there is some evidence of, you know, the validity scales on the MMPI to sharing variance with PVTs. But this is definitely an area where I think more study and research is needed.

Great. Unfortunately we could probably go on for a long time talking about this topic, but, unfortunately, we're going to have to conclude our presentation right now. I really wanted to, again, thank our presenters, Dr. Cole and Dr. Stegman for a really well put together discussion of this and be willing to sort of answer some of these challenging questions as we face with treating these individuals. Excellent job.

Please note, the webinar was conducted for awareness and informational purposes only. Things that were discussed regarding, you know, policy statements and those sorts of things, obviously, are part of that disclaimer. If you're interested in downloading today's presentation, the slides are available in the "Files" link. I saw several questions that people asked about how do I get ahold of some of these studies. So they're going to be available in the "Files" link. And the audio recording will be available online starting August 1st, so that all of you can listen to this again while you're running tomorrow morning, because I know you're going to do that.

Please take a moment to complete the ICE, the Interactive Customer Evaluation. Your browser should automatically direct you to the ICE feedback site. The feedback provides valuable to us to provide valuable information about future topics, improve the delivery and experience of the webinars, and to reach out to more colleagues for participation in this. I wish you all a wonderful day. Thank you all for your participation today. Goodbye.