Session date: 9/12/2016

Series: Spotlight on Pain Management

Session title: The relationship of sleep disturbance to suicidal thoughts and behaviors

Presenter: Wilfred Pigeon

*This is an unedited transcript of this session. As such, it may contain omissions or errors due to sound quality or misinterpretation. For clarification or verification of any points in the transcript, please refer to the audio version posted at www.hsrd.research.va.gov/cyberseminars/catalog-archive.cfm.*

Moderator: We are ready to begin now, so I’d like to introduce our speaker. We have Dr. Wilfred Pigeon joining us. He’s the director of VISN 2 Center of Excellence for Suicide Prevention in Canandaigua, New York. I’m sorry, the Canandaigua VA Medical Center in Canandaigua, New York. He’s also an Associate Professor of Psychiatry and Public Health Sciences at the University of Rochester Medical Center in Rochester, New York. So at this time, I would like to turn it over to you Will.

Wilfred Pigeon: Thank you very much and you’ll let me know if you are seeing my screen?

Moderator: Not yet. Go ahead and click the show monitor main one. There we go, perfect.

Wilfred Pigeon: Very good. Well good afternoon everyone and thanks for that introduction. So I will be talking about the relationship of sleep disturbance to suicidal thoughts and behaviors today. And I’d like to acknowledge my colleagues at the Center for Suicide Prevention in Canandaigua, New York. And note that Todd Bishop was going to be co-presenting with me today. He’s at a conference today, but I will circle him with my arrow here. That’s Todd Bishop, a post-doc at our center who has also contributed to some of the work that I’ll be discussing today.

So the outline’s fairly straightforward. I do want to spend a little time reviewing the literature on the relationship of sleep and suicide outcomes, as well as present then some of the work that we’ve done. And review a bit of other folks’ work in the area and hopefully if I do my job, we’ll end with a discussion that includes the audience during the question and answer period. About potential clinical recommendations and research recommendations, to shape this work in the future.

Note at the bottom of this slide, the support that we’ve received for some of the work and the things that I’ll be talking about, as well as one conflict that isn’t a direct conflict in this talk. And the typical disclosure that the views or opinions that you’ll hear from me today don’t represent those of the VA or the US government.

So with that, I’d like to begin with two polling questions. They’ll be consecutive questions and there will be a couple more polling questions later on. So first, just to get a sense of what the audience makeup is, if you could identify as closely as possible the role in the VA that is associated with your job or work. Student trainee or fellow, clinician, researcher, administrator, manager, or policy maker, and for those individuals who might still be checking their email, you could just check that last button.

Moderator: Thank you. It looks like we’ve had about 70% of our audience respond. So I’ll go ahead and close that out in just a moment. Okay, I’ll go ahead and close the poll now and share those results if you want to talk through them briefly.

Wilfred Pigeon: Very good. So it looks like two percent have just been checking their email. That’s great. About half of you are clinicians with 13% as trainees as fellows and 1/5 as researchers and another 1/10 as administrators. The next descriptive polling question is which of the following meetings have you attended ever? And you can check more than one if that applies. And this is for me to again get a sense of who is in the audience.

If you’ve ever attended any of these meetings: the Annual SLEEP Meeting, the Annual American Association of Suicidology Conference, our Quasi-Annual VA/DoD Suicide Prevention Conference, or the HSR&D/QUERI National Meeting, and if you attended an AC/DC Concert and purchased a black concert t-shirt, that would be cool to know.

Moderator: Thank you. It looks like people are taking a little bit more time to respond to this one. That’s fine. So far we’ve had about a 40% response rate. So I’m going to go ahead and give people a few more seconds to get their replies in. Okay. It looks like things are slowing down, so I’m going to go ahead and close this out and share those results with you. Do you want to read through those real quick Dr. Pigeon?

Wilfred Pigeon: Here they go and thank you for participating. So a handful of folks have attended the SLEEP Meeting. It looks a good amount of the audience has attended the VA/DoD Conference, so I’m going to assume there are a fair bunch of suicide prevention coordinators in the audience, in addition to clinicians and investigators. And really a fourth of the audience has gone to an AC/DC concert. That’s also awesome. Thank you for playing along with me.

Moderator: Okay. I’m going to turn over the screen back to you now.

Wilfred Pigeon: Good. So again, thanks for doing that. They’ll be another couple questions as we proceed. But first I’d like to delve not too deeply but into the literature somewhat. So it’s not surprising, I hope, to most of you that sleep problems in general are incredibly prevalent across all number of conditions. And certainly conditions that we all see in our patients or in folks that you work with in other capacities with respect to patients with depression, anxiety, PTSD, TBI, and other forms of chronic pain.

Usually a half and typically more like ¾ or 80% of patients with any of those conditions report a significant sleep disturbance or sleep problem. It’s also true that when sleep disturbance is present, it’s incredibly persistent. And by that I mean it’s not typically something that resolves of its own accord, but instead requires treatment on its own. So if we treat the comorbidity let’s say with depression, it’s still the case that a very large percentage and the majority of patients who respond to good depression treatment will continue to have residual insomnia.

And some other conditions that presented your folks with residual sleep problems, it’s even higher than 50%. When I speak about sleep disturbance, I’m using that as a broad term. I’ll be talking more specifically about individual sleep disorders as we move along. And I’ll be talking mainly about insomnia when we get to those. But for now I’m talking about sleep problems and sleep disturbance as a more general category.

In addition to being persistent, sleep problems are pernicious and by this I mean that there are other things that occur once sleep disorders or sleep problems become in and of themselves, an ongoing problem. So they can exacerbate existing comorbidities. Again I’ll use the case of depression, where if depression and insomnia for instance are co-occurring, it is very often the case that depression is far less likely to respond to treatment. And secondly, the depression is worse because of depression.

This is also the case in post-traumatic stress disorder and several other conditions. Not only can it make the condition worse, there are some conditions in which the presence of a sleep disturbance can be attributable as a cause of the co-morbidity. And again, most of the work here has been done with respect to sleep and depression, where the presence of insomnia and the absence of depression can then lead to depression over a number of years. Finally, one reason to focus on sleep here in this talk and in our work is that sleep problems, not only are they prevalent and cause additional problems, but they’re treatable and quite treatable.

And here I list three of the most common sleep disorders; sleep apnea, nightmares, and insomnia. Certainly things that we see in the veteran population in very high numbers and each of which are quite treatable with several different treatment approaches. And finally, we think that sleep treatment is a gateway to other things and other positive things. And this is a message that the sleep field has been promoting for quite some time, at least the last five to ten years.

That when we treat a sleep disturbance, we’re potentially impacting something that itself has a large impact on daily function and general function in someone’s life. So in order to positively impact that function, we can address things that are addressable and sleep is one of those things. It’s also true that when we improve sleep, it can also improve any co-occurring and medical and psychiatric disorders. Typically not cure, but certainly improve the severity of.

It’s also true that treating sleep can not only diminish, but actually in some cases prevent negative health consequences of long-term sleep problems. And we hope it’s true that by treating sleep in a positive manner, where a patient receives positive benefit, that that can sometimes lead to an enhanced appreciation of mental health services that are available, other than that for sleep problems.

Finally, most recently the question has been raised, is treating sleep potentially a way to nudge people who might be on a path towards suicidal hacks or behaviors off such a path? So can we change the trajectory of those on a path to suicide by improving sleep? So although the sleep field has been working on this for some time, and here’s an example of how long that some time is. You might be able to tell by the typeset that this is a fairly old article. It’s actually published in Lancet and we see the title insomnia and suicide.

Dr. Pronger tells us that he’s been long interested in the association between sleep and suicide and thinks that perhaps by addressing insomnia we can prevent suicide. And that was published in 1914, so 102 years ago. It’s the first article that I’ve seen titled something like insomnia and suicide. Mr. Pronger goes on to note that his underlying hypothesis is that people with really bad astigmatism get depressed, have difficulty sleeping, and it leads them to suicide.

So I don’t know that that work has been follow up on, but nonetheless it’s pretty striking that the association between insomnia and suicide has long been noted. And really there have been articles throughout the last century and certainly in the last 25 years pointing out these associations. The first meta-analysis to actually look at this relationship was just published a few years ago in 2012. And here we assembled all data available to us that met some fairly rigorous criteria.

What you’re seeing here are relative risk values and the outcome is, if you look way to the left I’ll circle it here, suicidal ideation. And we’re looking at the relative risk of developing suicidal ideation when there is a sleep disturbance on board, as opposed to no sleep disturbance. So here we see ideation and the second bar I’m circling, and this is suicide attempts. So 2.95, almost three times the risk of developing ideation, of having an attempt, and then again here circling 1.95 death due to suicide.

The bars on the right are all studies that controlled for the presence of psychopathology, including the presence of depression. So this is not a relationship between sleep and suicide outcomes that is due primarily to depression, but in fact controls for depression. So the risk remains even after controlling for these other common indicators, these common risk factors for suicide.

So there’s been a second meta-analysis recently, I think the following year in 2014, that looks at a different, overlapping but different set of studies with similar findings. And that meta-analysis was conducted in studies where psychiatric conditions were the focus with similar findings. So that second analysis I’ve noted here for folks that are interested, it’s the second bullet item. And I also wanted to alert folks to two very nice reviews by Rebecca Bernert, who’s done an incredible amount of work in this area. And those are very nice reviews if you’d like a couple additional references.

So I’m going to cover a couple additional pieces of work that we’ve done. So this is a slightly busy chart. So this is a chart, this is data from a chart review of 381 decedents that are in decedents and we’re looking here at number of days from their last visit in VHA to date of death. And we divided this sample simply amongst those that had a sleep disturbance in their medical record and those that did not.

What the graph indicates is that time to death in the presence of sleep disturbance is about half that of time to death if there’s no sleep disturbance. And again, these are amongst decedents. Moving from suicide as an outcome to suicidal ideation, many of you are aware of our various behavioral telehealth centers and behavioral health labs, where we can refer our patients for assessment and even some phone intervention.

This is data from one of those behavioral telehealth centers. So about 650 veterans and one of the nice things about our telehealth and tele centers is that there’s a good deal of data that’s captured in a fairly nice manner, with validated instruments. So here we’re assessing the difference between degree of sleep disturbance on the left, where we see among those 650 veterans, that a good deal had moderate to a lot to extreme sleep disturbance. And that was very highly correlated with a high degree of suicidality severity.

So this study is just indicating that in a study that’s already being referred at least for an assessment, those with the highest level of sleep disturbance also have the highest level of suicidality. So I wanted to also point out a couple additional studies. This one, a very nice study here in military personnel, again a high risk group. These are folks not referred to a telehealth center but actually referred to an army clinic or hospital for further assessment, often inpatient.

And here what was discovered is a relationship not just cross-sectionally, so not just that there’s a relationship between having a sleep disorder or sleep problem and having high suicidality. But longitudinally, those that had higher sleep disturbance levels upon admission or upon baseline, had higher levels of suicidal severity at a subsequent follow-up, in addition to having a higher number of suicide attempts or a higher risk for suicide attempts.

So very few of these kinds of studies have been done. So I note them here because of the relative novelty of the design and the findings. Until the last three years, there had been very few studies in veteran samples. And some of these that I’m showing you are some of the first. Before I move on to sharing with you some data that we’ve gleaned, I wanted to get a sense of what folks’ experience were with sleep medicine.

So this is the next polling question. So if you can select one of these answers, which statement most adequately captures your experience? At the top level, I’m credentialed in behavioral sleep medicine. Number two, I have extensive CBT-I training. So for instance, perhaps you’ve completed the VA CBT-I training. I’ve had some training in CBT-I. I do not deliver CBT-I, but I know about it. You know what it means. Or what the heck is CBT-I?

Moderator: Thank you. Looks like about 70% of our audience has responded thus far. Please note these are anonymous replies and we’re not grading you. So feel free to be honest. Okay, it looks like we’re at about an 80% response rate. So I’m going to go ahead and close the poll out and share those results.

Wilfred Pigeon: Great. So the behavioral sleep medicine credential, there actually is such a credential but not many people hold it. It was first administered by the American Academy of Sleep Medicine. It requires quite a few hours of training and completing an examination. So there are maybe 400 people in the world who hold that credential. So, not a whole lot of folks. There’s a smattering of folks who have actually completed the CBT-I training, delivered by the VA.

So I’ll continue to speak here about that CBT-I training because like many of our rollouts in the VA, I think a really nice training, very well done, quite extensive. Extensive in the sense that up until recently, it involved two and a half days of onsite training, followed by three to six months of phone consultation on clinical cases. So people leave the training and certainly the follow-up supervision consultation with some pretty good training in CBT-I.

So if you’re a clinician and that’s of interest to you and you can get a slot, it’s certainly worthwhile. So 20% have had some training of CBT-I and at least an additional half of the audience is fairly knowledgeable about CBT-I. So since a quarter of the audience isn’t, I will spend a little bit more time on the slides describing what CBT-I is. And hopefully the screen is looking okay.

Moderator: Yes.

Wilfred Pigeon: Great. So I am going to move now specifically to insomnia as a disorder as opposed to talking about sleep disturbance or sleep problems more generally. So insomnia, there’s a new DSM-5 criteria for insomnia that includes the criteria, I’m sorry some of the following criteria. Difficulty initiating or maintaining sleep or waking up too often or too early. In addition to that, that type of sleep problem or pattern causes some level of distress and some level of daytime consequence.

It has to have occurred for at least three months and cannot simply be a choice on the person’s part to sleep less. So for instance, if you’re putting in excessive hours or watching Sunday Night Football and you have to wake up at 5:00, that doesn’t mean you have insomnia. It just means you didn’t give yourself enough time to sleep. So insomnia being trying to sleep but not having the ability to sleep for a three month duration. Importantly, and I note this because it really is important, a significant change in the criteria in DSM-5, which is that there’s no longer primary insomnia and insomnia due to other things, which for years has been called secondary insomnia.

Instead there is one diagnostic entity called insomnia disorder. So if insomnia exists on its own with no comorbidities, it is insomnia disorder. If insomnia exists in the presence of major depressive disorder, it is still insomnia disorder. It took a long time to get there, but the sleep field has for some time believed that insomnia was insomnia. So we’ve gone far enough that most other fields now agree with that contention.

So what that means then is when presented with insomnia, we treat insomnia. We don’t worry if it’s due to other things unless it’s due to substance induced insomnia. So back to the slide. So there are a number of treatments for insomnia. Certainly we know there are pharmacological treatments. I won’t be talking about those, other than to just say there are of course FDA approved medications for sleep. These include benzodiazepines and the now more familiar medications of Zolpidem, Zalapan, and Eszopiclone. A couple other medications have been approved.

There are off course off label uses of medications and we can use medications that have a sedating side effect profile and make use of the side effect in order to hopefully treat insomnia. And there are over the counter sleep aides, primarily over the counter forms of Benadryl, where the main ingredient is typically Diphenhydramine. But straight generic brand Benadryl will do the trick just as well as Tylenol PM or other labeled medications.

I would include in over the counter sleep aides melatonin as a not very good option for over the counter sleep aid. And if there’s a question about that later, I’m happy to get into that a bit. In terms of non-pharmacological approaches, there are actually several behavioral, cognitive, and relaxation approaches. Each of which on their own have a fairly nice effect on insomnia and each have their own literature.

If you combine all of those things, both behavioral and cognitive practices and sometimes relaxation approaches, we have what has come to be known as CBT or Cognitive Behavioral Therapy for insomnia. So that’s the CBT-I. So CBT-I is indeed a multi-component intervention. It’s typically delivered in five to eight sessions. It can be done individually or in group. The main, one of the most important facets of delivering insomnia treatment using CBT-I is that not only does the patient need to adhere to recommendations and the treatment plan, but the therapists themselves need to be very adherent to the intervention as well.

So there needs to be then high therapist fidelity to how CBT-I is laid out. That perhaps sounds simplistic until we begin to work with patients and realize there are any number of ways that a therapist can go in a session. And if we go too far, if we go to apart from how CBT-I is laid out, it’s likely that the outcomes are not as good. Importantly, in the last year, the American College of Physicians has come out with clinical practice guidelines that recommend CBT-I as the first line treatment for insomnia.

So up until then, the recommendation had been you can use a hypnotic medication or CBT-I. There was a small nod towards CBT-I, but either can be delivered. With this recommendation based on additional evidence over the years, the recommendation is start with CBT for insomnia and then move to medications. So a little bit then about the components of CBT-I if you can read some of the script in that blue bubble.

So the behavioral components of CBT-I are far more involved in scope than the cognitive portions. So if you’re familiar with CBT for depression, for instance, the cognitive portions, I think anyhow, are far more involved than the behavioral portions. So in CBT for depression, we would work on some version of cognitive therapy, typically some sort of cognitive restructuring and perhaps add behavioral activation.

In CBT for insomnia, most of the work is in the behavioral domain. Particularly using two approaches that on their own can be helpful, but certainly combined are even more helpful. And those approaches, which I will not detail in great length today, are sleep restriction therapy and stimulus control therapy. Each of these approaches target some behaviors that most insomnia patients engage in one way or another. And that includes having excessive time in bed being awake, having irregular sleep schedules, and sleep activities that are incompatible with sleep.

So we might think of some of those activities as sleep hygiene, but I really think of sleep hygiene as certainly distinct from behavioral strategies. The cognitive portion of cognitive therapy in CBT-I is focused not, for instance, on depressogenic thoughts, but instead on sleep related thoughts or thoughts that can interfere with sleep. And those can be unrealistic sleep expectations and the classic example here is many people believe that they should sleep eight hours a night and to do so in an uninterrupted fashion.

Certainly that’s not the case for most of us. While seven to eight hours is the normal amount of sleep for adults, it’s also normal for adults to wake two to four times per night. So insomnia patients will often awaken and then of course be awake for some time. But part of the time they’re awake they’re concerned about the fact that they’ve awoken. And we try to impart to them in the cognitive therapy portion of CBT for insomnia that indeed it’s quite normal to wake up.

So let’s at least take off of the stress table the concern that you’re not supposed to wake at all. So I won’t belabor these too much more and note that the final bubble here, the final component I think of as sleep education. And that’s informing people about the process used in sleep and a little bit of sleep hygiene. And here sleep hygiene I think of as the dos and don’ts of sleep.

So don’t go to bed having had a gallon and a half of liquid. Don’t go to bed having just run a 10k, but maybe put a few hours between the liquid and the 10k and when you’re trying to sleep. That’s really distinct in my mind from stimulus control therapy, which takes a far more rigorous approach to the bedroom environment and how it can be enhanced for sleep.

So I’ve told you that insomnia is quite treatable, as are other sleep disorders. Particularly for insomnia, the question becomes we have things that work. So it’s not that medications don’t work; they do work. It’s that CBT-I can be more efficacious in the long-term with fewer side effects. So if that’s true, how do we treat more people? As in many conditions, one way to treat more people is to go where the people are.

So in this case, the primary care office where we have a middle aged superman looking a bit under the weather. Saying, you know doc, insomnia has really been wreaking havoc with my ability to leap tall buildings in a single bound. So clearly Superman is having a consequence of insomnia and here, hopefully, Dr. Jones is not writing out a prescription for Trazadone, but is instead saying you know. I have this colleague who you might talk to, to address your insomnia.

So we try to see how that might work in a primary care clinic. We’re not the first to do this but I think it was the first study done in the VA where we delivered CBT-I in the primary care clinic, in close collaboration with PACT team members. So one of the PACT team members that delivered the treatment was in our study staff. And we did so in a fashion that was consistent with primary care practice.

By that I mean a fewer number of sessions. So in this small randomized trial we delivered CBT-I in four sessions. And those sessions ranged in length from 20 minutes to 40 minutes. 40 being on the outside edge of how long they are. They averaged under 30 minutes. Two of the sessions were in person and two were by phone in this study and we compared that to providing sleep hygiene information and education alone.

As you can see, a pretty small study. It was a pilot study, so 28 participants overall; 13 in CBT-I, 15 in sleep hygiene. And we identified veterans from a couple primary care clinics based on their annual depression screens, the two question depression screener. If it came back high, we then reached out to those veterans and asked them if they’d be interested in a study. Well first we asked them if they had sleep problems and then if they’d be interested in a sleep study.

So I’ll just present that data to you from that study that was completed maybe a year and a half ago. What you’re looking at here is the difference between pretreatment values in the first column and posttreatment values for those that were randomized to the CBT-I condition, the first line. And those that were randomized to the sleep hygiene condition, the second line. SL is sleep latency, how many minutes does it take to fall asleep.

So these are mean and standard deviations of minutes to fall asleep. So 43.8 minutes to fall asleep in the CBT-I condition at baseline. And then at posttreatment about 19 minutes. So a nice decrease there and then the statistical results are…the first line, just within the group if we just compare pre, post change in the CBT-I group. An asterisk notes statistically significant, d is the effect size. You want effect size at least in the .6 to .7 to .8 range and certainly something above one is quite large.

Here we compare both groups to each other across the two time points. Again the difference between groups here is significant. So that’s for sleep latency. You can see, if I send my arrow over, I’m circling now what the sleep hygiene condition did. So they started at 34 minutes to fall asleep and they ended about at the same place. So a couple other variables that I’ll click through and they look the same in terms of presentation.

NOA, number of awakenings. So two and a half awakenings or so per night and ending at one and a half per night in the CBT-I condition. WASO, wake after sleep onset, how many additional minutes was I awake in the middle of the night. Here again 79 minutes to start with and about 29 minutes at the end of treatment in the CBT-I condition. Not much change in the other group. Total sleep time really didn’t change much.

So it’s not that folks were sleeping much longer but that they were awake far less and were spending most of their time that they were in bed asleep rather than awake. Which tends to lend itself to a higher quality sleep and then over time, had we followed these folks, the amount of total sleep time would have risen, which is the case in many CBT-I trials. That initially we get quality of sleep to improve and then over time duration of sleep improves or increases.

SE is sleep efficiency and we want this number higher. In this case we started at 75% and ended at 86%. So those are obviously a small pilot study but enough to say that in a sample of veterans with depression and insomnia, delivering a very brief form of CBT for insomnia we got some nice responses, as we expected, on sleep outcomes.

There are a couple other works in progress or resources available if folks don’t know, in addition to PTSD coach, we now that CBT-I coach available as a free downloadable app. It was developed in concert, the VA in concert with the DoD office of technology or the National Center for Telehealth. So it’s a fairly nice app. I wouldn’t use this as a treatment. It’s not recommended at all to use this as a treatment approach, but instead as a treatment enhancement tool. If you’re not familiar with it, it’s worth just checking out, pretty easy to get to. What will certainly be worth checking out is in the next…well I won’t say how many months it’ll take.

But when version 2.0 is out, in fact it might be out, it is quite enhanced and can, for some patients, you might feel confident that perhaps seeing them once, having them use the app and then come back to you even in a month or so might be worthwhile. Because the app, the version 2.0 of CBTI Coach is so much more enhanced. It’s much closer to being able to be used as a standalone treatment, though still not there yet.

Some other work of interest in terms of identifying patients…so with my cartoon I tried to denote that one way to access more veterans or more patients in general with sleep problems and insomnia specifically is to find them in primary care and treat them there. One way to find folks is to simply ask the question. And if in your clinic you’re not asking the question but you are giving the PHQ-9, there’s of course a sleep item on the PHQ-9. And if you just pull that sleep item, if they score a one or higher there’s a very nice, fairly reasonable I should say, sensitivity and specificity profile of just the one PHQ-9 sleep item and its ability to identify insomnia compared to a full insomnia screen.

A couple other studies that have been…these are not the studies, but a couple other resources for folks who are interested in treating insomnia in primary care. One is a description of the study I just described by our group. Then the second is a chapter and the third is by a couple investigators from health services. That is also very nice in terms of adapting CBT-I to primary care settings.

A couple other pieces of important work, these studies are a little older but nonetheless really nice studies if you’re interested in this work. Again I had noted not a lot of work on sleep and suicide in veteran populations. There’s more work in the veteran military populations delivering insomnia treatments but not a whole lot more. And these are two very nice studies that were published; one from folks at the Durham VA and then by investigators at Pitt working with the Pittsburgh VA.

Finally, I’d mentioned the CBT-I rollout. There are a couple of papers that have actually now been published utilizing the training case data from that rollout. So at the time, 300+ folks had completed training cases and drawing on the information from those training cases, there’s one study indicating that indeed CBT-I could be delivered quite well. With very nice benefits to veterans who receive that CBT-I treatment.

This paper here that I have up pulls out the PHQ-9 suicide item and shows that the effect of CBT-I is not only relegated to improving sleep. But in this case, decreases the amount of suicidal ideation in those veterans that endorsed ideation at baseline. So this is not a clinical trial. It’s not a controlled study. It’s a big case series, but it’s a nice indication that treating insomnia with CBT-I treatment may have some potential benefit to the kinds of patients that I started off talking about. Those who are on some trajectory potentially towards suicide.

A couple studies that have just been completed but the data hasn’t been published. You’ll remember I mentioned Rebecca Bernert as having written a couple nice reviews. She also just completed a study. Again the results are not published, but in this case a study supported by the military suicide research consortium and there is such a thing, which funds really excellent suicide research. She completed a study of CBT for insomnia in military veterans.

The other that’s above her is a second study that we just completed and I’ll show you some of the results of that study. So if you remember our first little pilot study, the total sample size was 28 or so. Here our total sample size is 50 and we do a very similar approach that we did in the first study. Except here, the sample is a bit higher and we’re comparing just CBT-I, again delivered in primary care, to treatment as usual.

So the control condition in this case is whatever care you’re getting in primary care. That’s it for now. Here the subjects were recruited from primary care from their medical records based on diagnosis. And we were specifically looking for folks who have had major depressive disorder or PTSD and they were also endorsing suicidal ideation at the time. So everyone in this study began at a place where they were endorsing a level of ideation that did not involve serious intent. But was nonetheless current ideation.

So a slightly different sample of folks and here a little bit more information. I won’t get into this, but we delivered CBT-I again across four sessions averaging 30 minutes. And these are the instruments that we used, the insomnia severity index, the PHQ-9, and the third is a suicide scale called the Columbia Suicide Severity Rating Scale. There are three different sections of that scale and I’m going to be talking about the second section, which is a subscale that measures intensity of ideation on a scale of 1-25.

So here we wanted to see if CBT-I in a sample of veterans who were depressed and/or had PTSD and many had both and/or suicidal ideation. We wanted to specifically see with sleep improved, with depression improved, most importantly would we have any impact in the controlled study on suicidal ideation. So here are several slides. They’re all going to look the same, so again I’ll spend a little time describing what the slide shows.

We have the first two set of bars is treatment as usual, TAU conditions, and that’s the control condition. The light blue is the baseline value and the slightly darker blue is the posttreatment values. And the name of the instrument is on the vertical axis and here we’re looking at insomnia severity index. So we’re comparing treatment as usual, pre, post treatment to CBT for insomnia pre, post treatment.

So here we start at the same place. Insomnia severity scored around 20 on a scale that goes from 0 to 28 and they end at around a score of eight in the CBT-I condition. A significant drop, very large effect size. The kinds of effect sizes we tend to see for CBT with insomnia. So for me it’s not surprising that we got this effect on insomnia. Here the effect on depression with the PHQ-9 and the scale here is from 0 to 24 because we remove the sleep item so that we don’t double count sleep.

And again, treatment as usual condition. Here, a small change in treatment as usual, condition not significant. And a large change in the CBT-I condition. So now we have an effect on insomnia, an effect on depression severity. So what’s the story then with suicidal ideation? And here, in order to trick my audience, I first give you version 1.0 of the results of the study on ideation intensity. And I show that there is indeed a drop in suicidal ideation intensity in the treatment as usual condition, but a huge drop in the CBT-I condition.

So the tricking the audience part of this is I’ve scaled this as running from 5-15, when actually the instrument…that would not be allowed if this were the real data. So it is the real data, just rendered inappropriately and that’s the data rendered appropriately. And the scale goes from 0-25, not 5-15. So when you run the full scale, these look quite a bit different. So again a drop in treatment as usual, a bigger drop in CBT-I. But if you look at the top, the p value, as opposed to the other finding, not significant. The effect size of 0.44 is in the moderate range. So that’s not a bad effect size. In fact, some effect sizes for other suicide treatments are in that range as well.

So there’s a…I’m interpreting this as a signal that CBT-I in a controlled study is trending towards an effect of having effect on suicidal severity. Certainly in the right direction and if you’re accustomed to working with power in studies, this was again a study of 50 or so folks. If the number were 100, the p value would then be significant. But we didn’t do that, so we can’t say that.

So before we move into the discussion arena, the last polling question for you all. Because I was very concerned that I hadn’t gotten an email in some time, is were you aware that the VA is enforcing PIV? And the only response is yes, you’re very appreciative that I brought this up for you because you have been missing those emails as well.

Moderator: Well it looks like we’re getting…it looks like everybody is reporting that yes. They are aware and thank you for the reminder. I’ll go ahead and finish that up. There we go.

Wilfred Pigeon: Alright. So not that you had a choice, but thanks for doing that for me. So in summary before we move to hopefully a little bit of question and answer, the main points are that sleep disturbance, both generally and some sleep disorders specifically i.e. insomnia, apnea, are associated with increased risk for suicidal thoughts and behaviors. And that’s the case even when we control for other important risk factors like depression.

The second takeaway, I hope, is that insomnia in particular is a really great target for intervention. Not the least of which addresses sleep, but secondly it’s a quiet and effective intervention and has moved beyond advocacy into the effectiveness arena. And it has been recognized now as being the front line, the recommended first line treatment for insomnia.

So that’s a good starting place and it’s likely to include benefits beyond sleep. And there’s preliminary evidence now that CBT-I can reduce suicidal ideation. Here we await bigger trials to see if in fact that’s the case. So what we don’t know really or at all is whether CBT-I reduces suicide attempts or suicide. So the very small studies that I showed you were related to decreasing suicidal ideation and that’s some way from an attempt at suicide.

We also don’t know clinically whether CBT-I when delivered to patients who are depressed and have current suicidal ideation or maybe they have a prior attempt but not current ideation. Whether we should be delivering CBT-I right there in the moment to those folks because we’ve done a nice job and identified insomnia as a problem. Should we then go ahead and treat that insomnia with CBT-I in someone who is also depressed and maybe on an antidepressant. But not responding too well if they’re still depressed.

Or maybe they’re awaiting depression care or perhaps they’re even getting depression care. But questions around when and how we deliver CBT-I. Do we do so in tandem with other interventions? Do we combine the intervention? Do we combine, for instance, CBT-I with a course of behavioral activation for depression? Something else we don’t know is whether patients with insomnia who are at risk for suicide should be withdrawn from hypnotic medications that may or may not be working well.

So I just, as many of you know it is not uncommon to have a patient who has a sleep complaint who is provided with 10mg of Zolpidem and 100mg of Trazadone and still complains of sleep problems. So perhaps the sleep has improved somewhat; certainly not to the point that the patient would desire. So what do we do with the hypnotic medication? If we’re not a prescriber, do we talk to the prescriber and say can we come off one of the medications and try CBT-I? Do we come off both medications? Do we keep both medications onboard and commence CBT-I and see what happens?

Those are unanswered questions. We often don’t know whether nightmare treatments reduce suicidal thoughts or behaviors. We know that nightmares contribute to thoughts and behaviors, but not whether treating them can improve suicide outcomes and the same for sleep apnea. We largely do not know whether treating sleep apnea can improve suicidal thoughts and behaviors.

We do know that treating sleep apnea can improve depression. So what we can do is begin to address some of the questions that I just raised, design pragmatic trials. It also would be nice to develop some clinical practice guidelines that take into account some of the real world patients that I just described or one of which I just described. Or scenarios that many clinicians are faced with on a day to day basis.

We have the opportunity to do that coming up. The VA and the DoD will be proposing in January that there be, there isn’t one now, that there be a clinical practice guideline for insomnia and sleep apnea. So that would be a great opportunity to say when developing those guidelines, we might want to have as some case examples what to do with these difficult populations.

And in the interim, we do the best that we can, but [Audio cuts out] is to vigorously identify sleep disorders, particularly insomnia, but also apnea and nightmares. And to treat them based on the current evidence available to us. And I’ll leave you with this thought and open the next ten minutes or so to questions.

Moderator: Excellent, thank you very much. We have lots of great pending questions. So we’ll get right to it. Please expand on the idea of melatonin not being a good over the counter treatment.

Wilfred Pigeon: Yeah, so melatonin is a circadian, it’s best used for circadian rhythm disorders. So as folks know, melatonin is involved in the sleep link mechanism. There’s a pulse of melatonin that’s released typically three to four hours before one’s typical bedtime. So what folks with insomnia tend to do is pick up 10mg of melatonin over the counter and take it a half an hour before bedtime. And it, other than mostly placebo, it wouldn’t have an effect on insomnia.

So in the trials…there have been clinical trials conducted with melatonin for insomnia and it doesn’t work real well. It works very well for people with circadian rhythm disturbance and if it’s going to be used for insomnia, it needs to be dosed and timed appropriately. And the proper dose, by the way, is as low as 1.5mg and folks are typically purchasing far more than that and we’re not sure what that’s doing.

If 1.5mg of a hormone we’re taking is enough to shift circadian rhythms, I’m not sure we want 10mg in the system and we don’t want to take it before bedtime. We want to take it several hours before bedtime.

Moderator: Thank you for that response. The next question is active addiction and insomnia are also comorbidities. What is the best approach in that population?

Wilfred Pigeon: That’s a great question and one of the ones that we don’t have the best answer for. So, not only are they comorbid, but we find that folks with both alcohol use disorders and other substance abuse disorders who continue to have sleep disturbance during their treatment are far more likely to relapse than those that don’t have sleep disturbance. So what has been tried and what makes sense to try is we’ll treat the jarred sleep when you have them.

Maybe start inpatient and then, folks who are in intensive outpatient programs begin to deal with the sleep at that point. Unfortunately, the few studies that have done that haven’t had great results either. So the question remains, when and how to treat the sleep disturbance in the course of recovery from substance problems.

So that’s one question and the second question is okay. What if they’re not even getting substance abuse treatment? How do you work with insomnia at that point? And the answer is you don’t work very well. So you don’t want to be giving a hypnotic to somebody who might also be using other CNS depressants. And CBT for insomnia in folks who are in the high moderate to severe level of substance use, they just don’t do well with the treatment.

So not a great answer, but for folks who are in treatment and may be, and this is just off the cuff here. Folks who are just beginning an outpatient treatment, I think it’s worth a shot to deliver CBT-I at that point or integrate it into the program. But good question.

Moderator: Thank you. This is just a comment. CBT-I Coach version 2.1 is now available.

Wilfred Pigeon: Oh, thank you so much.

Moderator: You’re welcome. Can you recommend a screening tool for sleep disturbance that can be used in either primary care or therapist?

Wilfred Pigeon: Yeah. So the PHQ-9, if you’re already using the PHQ-9…so that point I think should be underscored. The one item is great for identifying a sleep disturbance. If you have another depression instrument that you’re using, see if that also…so the CSD has a sleep item, you can use that. If you’re looking for a great instrument for insomnia severity only, it’s that seven item insomnia severity scale. But that won’t capture other sleep disturbance.

You can…I don’t know the name of it, but there’s a WHO World Health Organization sleep questionnaire. And it might actually be called the WHO sleep. So it’s three or four questions, some of which look very similar to the insomnia items. But some of which are a little broader in scope. So that can be helpful. A lot of folks who ask this question end up designing their own because we have a great insomnia instrument, a couple of them. And then we have a great general sleep disturbance instrument, which is the Pittsburgh sleep quality index, but it’s too many questions.

So folks tend to pull a couple questions from either of those.

Moderator: Thank you. At our facility we have the ability to order CBT for chronic pain, but not for insomnia. Is VA working at a national level to make CBT-I available to all? Especially with the new guidelines recommending it as first line treatment.

Wilfred Pigeon: Yeah, so again a good question and it is as many things are, it is facility specific. So with the CBT-I rollout there are more and more clinicians who have been trained. And unfortunately, with many of the rollouts we sometimes have the case where the person trained in CBT-I was also trained in 12 other things and maybe they’re only taking one or two patients.

The place to check would be with your, with a mental health league or the evidence based provider leads at the facility or at the site. To see if there might actually be someone who is trained in CBT-I but hasn’t gotten to the level of consult in your medical record.

Moderator: Thank you. Are there any recent studies about sleep disturbance that attempt to control for anxiety, given that recursive nature of sleep disturbance with anxiety?

Wilfred Pigeon: That is a good question as well. So I think there…all I can pull up from my memory is some work out of the University of Laval and one of the authors would have been Charles Moore, who looked at folks with generalized anxiety disorder and insomnia and which to treat first. If I’m remembering properly, they assessed whether to use CBT for anxiety versus CBT-I first or last or combined.

That’s the only work I’m aware of but it’s an important question and one important response I think, is that…I don’t think I’m over generalizing to say the majority of people with insomnia would come very close to meeting, if not meeting GAD criteria if they describe to you what their brain sounds like in the middle of the night or as they’re trying to sleep.

So CBT-I incorporates a good deal or can incorporate a good deal of work in the cognitive portion to help people manage those sleep interfering thoughts at night. A nice contribution would be to actually engage more of the anxiety literature, the anxiety treatments and combine them a bit more with CBT-I.

Moderator: Thank you. Is sleep disturbance possibly related to agitation, which recently was found to be associated with suicide attempts?

Wilfred Pigeon: So the breath and pause if you heard that was I would be going out on a limb if I said that there was anything convincing that I’m aware of. So certainly when we think about bipolar disorder and manic episodes and that level of disturbance, insomnia and sleep disturbance is often a precursor of a manic episode. And we know that suicide rates among patients with bipolar illness are quite high. That’s also true in folks with schizophrenia. But I hesitate to say I can draw a good connection that I’m aware of in the literature between agitation and sleep disturbance. Although it makes sense that might be the case.

Moderator: Thank you. Is there a difference in sleep disorder between women veterans and men veterans with mental health disorders or even in the treatment plans?

Wilfred Pigeon: In the treatment plans, I don’t know. I imagine we have some unconscious biased approaches to how we funnel folks through various treatment approaches. But insomnia is far more prevalent in women than in men. And obstructed sleep apnea is far more prevalent in men than in women. Not exactly, but the ratio is about two to one in each of those cases, with respect to insomnia, women having more insomnia than men.

That’s largely associated with depression and with other mental health conditions. So if you look in a sample of depressed patients and try to note if there’s a difference in prevalence of insomnia between the genders, the difference is not great. So the difference in insomnia rates is driven more so by the prevalence of mental health comorbidities.

Moderator: Thank you. Any reason to believe that CBT-I is any less effective in non-vet populations?

Wilfred Pigeon: Oh not at all, no. It’s…how to say this scientifically. It works really darn well for just about anyone who is in front of you. So it works equally well in younger adults and older adults, civilian and non-civilian populations, and across a number of comorbidities. So as I mentioned, substance abuse disorders, alcohol use disorders are one of the places where it doesn’t seem to work as well.

Moderator: Thank you. What would you recommend for dementia patients that have sleep disturbance?

Wilfred Pigeon: So here we want to spend a good deal of time looking at the environment that the patient is in. So if it’s a nursing care facility or floor, some simple to say but difficult to change factors could be explored. So when are nurses rounding? When are medications given? What is the lighting on the unit or in the home environment?

So things that you might expect with [Audio cuts out] downing for instance can also contribute to sleep disturbance. So folks who are more active during the day, and this true across populations, sleep better at night. So to the extent that we increase activity levels, that we keep routines the same, but that they’re not routines that have people sleeping for two hours in the afternoon and then getting their nighttime meds at 7pm when they’re actually not ready to fall asleep.

So they take their meds but they don’t fall asleep until midnight and now their meds are starting to be metabolized. So those are some environmental factors that can be addressed. Although it’s difficult to do so.

Moderator: Thank you. I know we’re past the top of the hour. We have a few remaining questions. Are you able to stay on and respond to those?

Wilfred Pigeon: I can.

Moderator: Excellent, thank you. If any of our attendees need to drop off, when you do exit please wait just a second while the feedback questions populate on your screen. And please take a moment just to answer those few questions. Next question is I heard that if someone takes melatonin in pill form, their brain stops making its own. Is that correct?

Wilfred Pigeon: I don’t know the answer to that. I’m reaching here. I doubt that’s the case. It could be and this is true for many substances that we begin to down regulate production. And I don’t know enough to say.

Moderator: Thank you. What are your thoughts on natural products like tart cherry juice to assist in the production of melatonin?

Wilfred Pigeon: Either somebody planted that question or they didn’t know that I did the only randomized trial of tart cherry juice for insomnia. And despised doing the study because I had more media calls from that thing than any study I did which actually worked. So tart cherry juice includes, as the questioner noted, some naturally occurring melatonin. So the thought was well that might be a nice way to treat insomnia.

So in this one study, very small study, published the improvement. There was a small improvement and it was statistically significant. But unlike the data I showed you, there were people improving sleep by 30 minutes to fall asleep and 30 less minutes awake in the middle of the night. Total improvement was in the order of 12 minutes or so. So not a huge improvement on insomnia. So there’s not a lot of data yet.

So having said that, whether melatonin is delivered in pill form or in a food nutrient form, it’s still delivering melatonin. What we really need to know about melatonin is, in its use for insomnia, is when to deliver it. So and I noted when I was talking about melatonin, delivering it three to four hours before bedtime might be the most beneficial. And what we really need is to know what an individual’s melatonin levels are across a 24 hour period and if they look normal, then melatonin enhancement, we’re not sure what we’re doing.

If they are, if the melatonin levels are low or if the circadian rhythm of melatonin production is off by an hour or two in one direction or another, either occurring too early or occurring too late, then indeed we would want to supplement their melatonin. Potentially melatonin or another approach and the other approach, by the way, is light therapy. But in that case, we could use melatonin to help folks.

Moderator: Thank you. I promise I didn’t plant that question. The next one is can you please expand on the link between hypnotic medications and suicidality?

Wilfred Pigeon: Yes. So it’s not a…well depending on who you ask it’s a strong link or it’s not a strong link, but there is a link. So in very small numbers we have clinical trials in the FDA trials for medications that show that people have a little bit more suicidal ideation on medication than not. However if you look at large data sets, there does appear to be an association between the use of hypnotics and ideation and attempts, as well as all cause mortality. So for a lot of us, it feels like there’s enough smoke there to be concerned.

Moderator: Thank you. Would you recommend the CBT-I Coach app with treatment?

Wilfred Pigeon: As a complement to treatment, yes, and certainly…so I saw 2.0 before it was out. I assume it looks as good as it did when I saw it and I very much would recommend the current version of CBT-I Coach as an adjunct to treatment. I would also recommend, although it costs money, some web based platforms. And I’ll name them.

There are two programs and I don’t receive any money for them. One is called Shuti, spelled S-H-U-T-I. If you just Google that, you’ll find it and the other is called Sleepio, S-L-E-E-P-I-O. I don’t know how much they charge. It isn’t thousands, but it’s not $20. It’s something, but those two programs are full-fledged CBT-I programs that you can do without a therapist and you can do those online. We don’t at this point have any free versions.

Moderator: Thank you and then a final question; I heard that tryptophan in honey, about one tablespoon, sublingually helps with insomnia. Have you heard of this?

Wilfred Pigeon: I’ve not heard of tryptophan in that formulation I guess. But the data on tryptophan is even poorer than it is with melatonin. So unless there’s something really special about the level of tryptophan in honey or the root of administration, I suspect it might be…the placebo response might be fairly significant.

Moderator: Thank you. Do you have any concluding comments you’d like to make before we wrap up?

Wilfred Pigeon: I do not. I actually have to jump.

Moderator: No problem. Thank you so much.

Wilfred Pigeon: Great questions by the way.

Moderator: Great. Thank you so much. You have a great rest of the day and for our attendees, please wait just a second. I’m going to close out the meeting and the feedback survey will populate on your screen. It’ll take just a moment to fill out those questions. It does help us improve the presentations we provide as well as gives us ideas for new ones. Thank you everyone. Have a great rest of the day.