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KNOWLEDGE AND CLINICAL PRACTICE OF THERAPISTS TREATING  
COMORBID ANXIETY AND INSOMNIA

by

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## **Dedication**

To Andrea

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ABSTRACT

KNOWLEDGE AND CLINICAL PRACTICE OF THERAPISTS TREATING  
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The purpose of this study was to explore the extent to which therapists who treat anxiety also treat comorbid insomnia. A survey was created to test therapists' knowledge about insomnia and their expertise related to effective treatment methods. Results indicate that the majority of therapists in this study have not kept up with research that shows that anxiety and insomnia are bidirectionally causative, interactive, and exacerbating. They have not altered the way they treat clients to ensure that, when treating anxiety, issues related to insomnia are identified and specifically addressed. Additionally, they have failed to learn best practices for treating insomnia. Of the therapists in this study, 59% reported that they do not treat insomnia when it is comorbid with anxiety, and 82% do not use the most efficacious treatment for insomnia, Cognitive Behavioral Therapy for Insomnia (CBT-I), when their clients are experiencing it. A subgroup of therapists who treat insomnia with CBT-I showed superior performance on every measure of the test and

on self-reported treatment outcomes. Further exploration of the results, recommendations for future research, and practical implications are discussed.

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## CHAPTER I: INTRODUCTION

### **Context**

Over the last two decades, ongoing research into the relationship between anxiety and insomnia has engendered a paradigm shift. The idea that insomnia is a symptom of anxiety has been supplanted by the recognition that insomnia is a mental disorder and that the relationship between anxiety and insomnia is bidirectional—each is able to cause and exacerbate the other.

For therapists who treat anxiety, the high prevalence of insomnia in anxious clients makes their knowledge of insomnia and their ability to treat it critical. According to *The Diagnostic and Statistical Manual of Mental Disorders* (5<sup>th</sup> ed., text rev., American Psychiatric Association [APA], 2015, p. 364), 33% of the adult population experiences insomnia each year. Up to 80% of adult patients with coexisting mental disorders experience insomnia (Insomnia, Sleep and Mental Health, 2009; Smith et al., 2002). More specifically, for those who meet the criteria for anxiety disorders, 70-90% exhibit insomnia (Soehner & Harvey, 2012; Van Mil et al., 2010; Uhde & Cortese, 2009). Furthermore, in over 50% of cases in which anxiety and insomnia are comorbid, insomnia appeared at the same time or prior to the anxiety (Ohayon & Roth, 2003; Staner, 2003).

### **Purpose**

This thesis examines the understanding and clinical practice of therapists who treat anxiety regarding the bidirectional interactions of insomnia and anxiety. I address these questions: Do therapists who treat anxiety disorders also treat insomnia disorder. Are they cognitively competent, in terms of their knowledge about insomnia and their understanding of therapeutic practices, to choose and utilize best practices for treating it?

Specifically, utilizing a survey to assess knowledge and behaviors, I pose this question: To what extent does the knowledge and therapeutic practice of a convenience sample of clinical therapists who treat anxiety align with the knowledge and treatment recommendations of experts related to the treatment of insomnia (i.e., derived from *DSM-5*, APA (2015), the training manuals of sleep and insomnia clinician experts, university faculty, clinical psychologists, recommended insomnia-focused training resources provided by the American Psychological Association training website, and peer-reviewed articles and books).

A secondary purpose of this research is to raise the awareness of study participants about the importance of treating insomnia when it coexists with anxiety. I hope to achieve this through the participant's experience of completing the survey and by providing them with an opportunity to learn about its findings.

### **Hypothesis**

My hypothesis is that a survey of a convenience sample of therapists who treat comorbid anxiety will find that fewer than 50% also treat insomnia and that they lack both basic subject-matter “knowledge” about insomnia and clinical “know-how” about how to treat it. This hypothesis focuses the spotlight on the cognitive aspects of clinical therapeutic competence, which are foundational for treating insomnia. It does not focus on the behavioral aspects of competence, which must also be included to provide a more comprehensive measure of it. The behavioral aspects of competence are gained through experience and can be measured through the observation of a therapist by supervisors and by tracking client outcomes. Nevertheless, focusing on the cognitive aspects of insomnia—factors that can be examined through a survey—is a crucial starting point, providing the foundational knowledge required for a therapist ultimately to become effective when treating it.

## Definitions

Insomnia. “Insomnia” refers to “Insomnia Disorder,” as defined in *DSM- 5* (APA, 2015, pp. 362-368). It is one of a class of sleep-wake disorders and is identified by the complaints of clients associated with one or more of the following symptoms: (1) difficulty initiating sleep, (2) difficulty maintaining sleep, characterized by frequent awakenings or problems returning to sleep after awakenings, (3) early-morning awakening with inability to return to sleep. It is distinguished from other sleep disorders such as narcolepsy, a breathing-related sleep disorder, a circadian rhythm sleep-wake disorder, or a parasomnia.

Anxiety. “Anxiety” is a general term to used refer to a class of disorders characterized by intrusive negative and worrying thoughts, feelings of tension, avoidance, and physiological changes (e.g., high blood pressure) (APA, 2015, p. 189). These disorders include separation anxiety disorder, selective mutism, specific phobia, social anxiety disorder (social phobia), panic disorder, agoraphobia, generalized anxiety disorder, substance/medication-induced anxiety disorder, and anxiety disorder due to another medical condition. Not classified as an anxiety disorder but closely related to it are obsessive-compulsive disorder (included in the obsessive-compulsive and related disorders), acute stress disorder, and posttraumatic stress disorder (included in the trauma and stress-related disorders). All these diagnoses can have a bidirectionally causative and exacerbating relationship with insomnia (Edinger & Carney, 2015; Staner, 2003).

Therapist(s). “Therapist(s)” refers to the broad range of professionals to whom a client might come for help with a mental health problem. This includes Licensed Professional Counselors (LPC and LPC Associates), Psychiatrists, Family Practice Physicians, and other medical doctors, Licensed Marriage and Family Therapists (LMFT and LMFTA), Licensed Clinical Social Workers (LCSW), Doctors of Psychology in

Health Service Psychology (PsyD), Neuropsychologists, and Pastoral Counselors. Some states use terms such as “licensed clinical mental health counselors” or “licensed clinical professional counselors” or “licensed mental health counselors.” Within the “field of study” for this research were “therapists,” according to this broad definition.

Client(s). “Clients” is used inclusively to refer to the range of people who seek help from “therapists.” Depending on the context of help, “clients” might also refer to “patients.” Generally, psychiatrists and clinical psychological therapists treat “patients,” while counseling psychologists, psychotherapists, clinical social workers, and marriage and family counselors treat “clients.” Pastoral counselors treat “parishioners,” “members,” “persons” (or some other general designation).

Cognitive Behavioral Therapy for Insomnia (CBT-I). CBT-I is an evidence-based, multicomponent treatment for insomnia that combines cognitive, behavioral, and psychoeducational elements. Treatment normally takes from 6-8 sessions. Elements of the treatment include cognitive restructuring, stimulus control, sleep restriction and compression, relaxation training, sleep hygiene, education, and homework. CBT-I is efficacious—as many as 70-80% of clients with insomnia experience benefits, which are maintained over time (Trauer et al., 2015). CBT-I is widely recognized as a best practice, the frontline treatment for insomnia.

## CHAPTER II: LITERATURE REVIEW

### Overview

This review of pertinent literature includes five discussions.

1. “A Paradigm Shift in the Understanding of Coexisting Insomnia and Anxiety.”

Research has evolved views about the relationship between anxiety and insomnia, from the perspective that anxiety leads to insomnia, to the view that the relationship is bidirectional—each is capable of initiating and influencing the other.

2. “Insomnia and Anxiety: Guidance on Clinical Practice.” While revisions to *DSM-5* (APA, 2015) acknowledge scientific findings regarding the bidirectional interactions of insomnia and anxiety, a change in the way therapists treat comorbid anxiety and insomnia was the priority. When anxiety and insomnia are comorbid, both should be treated.

3. “CBT-I, the Front-line Treatment for Insomnia.” Cognitive Behavioral Therapy for Insomnia (CBT-I) is a widely recommended, evidence-based best practice for treating insomnia. Its efficacy for treating insomnia, comorbid insomnia, and other mental disorders, and specifically, insomnia and comorbid anxiety has been found in numerous controlled studies.

4. “Evidence of Change in Treating Comorbid Insomnia and Anxiety.” Since the stated purpose of *DSM-5*’s (APA, 2015) revisions concerning comorbid insomnia and other mental disorders was to change clinical practice, have therapists changed? Are they treating both disorders? This section reviews research related to the uptake of treatment recommendations for comorbid insomnia and anxiety among therapists.

5. “Insomnia and Comorbid Anxiety: Urgency.” Both the prevalence of comorbid anxiety and insomnia during “normal” times, and particularly now, given the increase in



these cases during the Covid-19 pandemic, requires a significant increase in the number of therapists who can treat insomnia effectively.

### **A Paradigm Shift in the Understanding of Coexisting Insomnia and Anxiety**

Research has evolved understanding about the relationship between anxiety and insomnia from believing that the relationship is unidirectional, anxiety leads to insomnia, to the realization that insomnia can exacerbate the symptoms of anxiety, to more recently realizing that anxiety and insomnia are bidirectionally causative and interactive—each is capable of initiating and influencing the other.

### **Anxiety Causes Insomnia**

That anxiety causes insomnia and other sleep disorders is an established canon of psychology and medicine. Lichstein (2004) reviewed fifty epidemiological studies of sleep. All viewed the relationship between anxiety and insomnia as unidirectionally; disturbed sleep was considered a secondary and direct consequence of primary psychiatric disorders such as anxiety or depression (p. 34). In his classic book, *The Promise of Sleep*, Dement (1999) identified psychological, emotional and psychiatric problems as a major cause of persistent insomnia (p. 144). These precipitating causes include “phobias, anxieties, and neuroses” (p. 144). Prior to the revisions of *DSM-5* (APA, 2015), the *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed., text rev., DSM-IV, American Psychiatric Association [APA], 2000) described insomnia as either primary or secondary to other disorders. Both post-traumatic stress disorder (PTSD) and generalized anxiety disorders (GAD) have sleep disturbance as a diagnostic criterion. *DSM-IV* (APA, 2000) did not list anxiety as a diagnostic criterion of primary insomnia, suggesting that the then current understanding of the relation of anxiety to insomnia was unidirectional--anxiety causes the symptoms of insomnia.

## **Insomnia Exacerbates Symptoms of Anxiety**

Some causal models of the relationship between anxiety and insomnia that maintained unidirectional influence from anxiety to insomnia at least allowed that insomnia could exacerbate the presentation, course, or outcome of anxiety. This position is evident in Chanin (2010), who begins his discussion on the relationship between sleep and psychiatric disorders emphatically, “There is no evidence that sleep disorders are a cause of psychiatric disorders” (p. 1). Nevertheless, he goes on to assert that difficulties with sleep can make psychiatric disorders worse by making the person confused or frustrated, as well as more sensitive to pain and other medical problems. Similarly, Bourne (2005) omits insomnia from his discussion of the major causes of anxiety (pp. 30-52), but later includes “Sleeplessness (Insomnia)” in his discussion of health conditions that may contribute to anxiety (pp. 350-356). Such “contributors” are “common physical conditions that can aggravate anxiety or tax your system and make you more vulnerable to its effects” (p. 332).

A significant thread of research into the etiology of insomnia’s impact on the symptoms of anxiety focused on circadian rhythms that control sleep through a process called “clock dependent alerting.” (Dement, 1999, pp. 83-85; Dement, 2000, pp. 102-124; Foster & Kreitzman, 2004, pp. 177-200; Goldbeter, 1997, pp. 460-464; Kalat, 2009, pp. 259-268). Cortisol production peaks in the morning and declines throughout the day. Then, around 3 pm and 7 pm, additional bursts of alerting hormones rev up the body’s energy, helping us counter the effects of sleep debt and achieve a high level of functioning during the evening. Research shows a correlation between the times when alerting hormones are released and the intensity of symptoms related to anxiety. Greaves-Lord et al. (2007) found that individuals with persistent anxiety problems had higher morning cortisol levels and a higher cortisol awakening response. Adam et al.

(2010) found that clinical diagnoses of stress-related diseases were predicted from the cortisol awakening function gathered one year earlier. Cameron et al. (1986) found that anxiety symptoms tended to be severe in the afternoon and evening, with symptoms appearing at 3 p.m. and 7 p.m., matching when alerting hormones are released (p. 215).

### **Insomnia and Anxiety: Bidirectional Interaction**

The movement away from understanding the causal relationship between anxiety and insomnia as unidirectional, with or without exacerbating influences, to bidirectional, in which anxiety may contribute to the development of insomnia and insomnia may contribute to the development of anxiety, has gained momentum through numerous studies that demonstrate comorbidity between anxiety and insomnia. Ohayon and Roth (2003) found that in those with no previous history of anxiety disorders, insomnia occurred before the current anxiety disorder in 18% of the cases and appeared at about the same time in 39%. In 43% of the cases, anxiety appeared before insomnia. Gregory et al. (2005) found that sleep problems before nine years of age were strongly predictive of later anxiety disorders, but not depression. In their review of the National Comorbidity Survey Replication, Roth et al. (2006) found that insomnia was observed in 32.5% of those who had anxiety disorders. Those having anxiety disorders were four times more likely to have insomnia than those without these disorders. Neckelmann et al. (2007) found significant associations between the long-term course of chronic insomnia and the development of anxiety disorders and depression. They concluded that insomnia may be a trait marker for those at risk for the development of anxiety disorders. Several research studies suggest that an underlying genetic or biological vulnerability related to circadian rhythms can predispose humans to anxiety disorders. Sipilä et al. (2010) conducted a genetic association analysis on 13 circadian-clock-related genes. The results showed a specific genetic association of some genes to specific anxiety disorders and the

association of two genes to all anxiety disorders--circadian genes play a role in genetic predisposition to anxiety disorders (pp. 1169-1170). Vreeburg et al. (2010) examined whether hypothalamic-pituitary-adrenal (HPA) axis dysregulation represents a biological vulnerability for depressive and anxiety disorders. Results showed that individuals with diagnosed parental history of depression or anxiety exhibited a significantly higher cortisol awakening curve that was similar to that observed in the participants with depression or anxiety disorders. This finding suggests that a higher cortisol awakening curve reflects a genetic trait marker, indicating vulnerability for the development of depressive and anxiety disorders. After reviewing some of the more important studies on the bidirectional relationship between anxiety and insomnia, Dahl and Bjorvsatn (2009) conclude, "the most parsimonious interpretation of these findings is that insomnia can predispose for anxiety and vice versa" (p. 44).

In his review of the current state of research into the bidirectional interactions of insomnia and psychiatric disorders, Khurshid (2018) describes the neurological correlates of insomnia and psychiatric disorders. The various neuronal regions, which produce the hormones that support sleep and wakefulness, are the same regions and chemicals that promote psychiatric disorders such as anxiety (p. 1). Today, in psychological and medical circles, the view that insomnia and anxiety interact bidirectionally is widely accepted.

### **Insomnia and Anxiety: *DSM-5*, Guidance on Clinical Practice**

The paradigm shift toward bidirectional interaction between coexisting anxiety and insomnia provided the foundation and impetus for revisions to the Sleep-Wake Disorders Section of *DSM-5* (APA, 2015). It was not, however, the priority. The science behind bidirectional interaction was acknowledged (p. 361), but the focus was on treatment (p. 361). Changes to the Sleep-Wake Disorders section—the introduction of

the new diagnosis, Insomnia Disorder (p. 362), and the requirement to specify with “other non-sleep disorder mental comorbidity” (p. 362)—were made to emphasize the fact that when insomnia and anxiety coexist, there is comorbidity. Two separate disorders exist and both need to be treated. Reynolds III and O’Hara (2013) state:

The *DSM-5* sleep-wake disorders classification has moved away from the causal attributions that were inherent in the logic of *DSM-IV*. In order to underscore the reality that patients in psychiatric practice frequently have sleep disorders that warrant an independent clinical confirmation, *DSM-5* calls for clinicians to specify comorbid conditions that are present. The aim is to simply acknowledge the bidirectional and interactive effects between sleep disorder and coexisting medical and psychiatric conditions [so that] the management and treatment plan can address both issues. Unless the sleep complaint is also addressed, the patient will be at higher risk for failure to achieve remission and to suffer a relapse (p. 1100).

### **CBT-I: The Frontline Treatment for Insomnia**

Cognitive Behavioral Therapy for Insomnia (CBT-I) is widely recognized as the most effective treatment for insomnia (Koffel et al., 2020; Siebern & Manber, 2011; Trauer et al., 2015). In 2016, when the American College of Physicians endorsed CBT-I, it became the first psychological treatment ever recommended as a preferred treatment by a medical organization (Quaseem et al., 2016; DeAngelis, 2016). The Society for Clinical Psychology (The American Psychological Association) cites “Strong Evidence” for its efficacy, provides descriptions of the elements of CBT-I therapy, and training resources (Boness et al., 2020; [div12.org/diagnosis/insomnia](https://div12.org/diagnosis/insomnia)). The American Academy of Sleep Medicine (Edinger et al., 2021) gives CBT-I its highest recommendation for the treatment of chronic insomnia disorder in adults; all other treatments receive a

conditional recommendation. Based on its efficacy, the National Institutes of Health consensus (NIH, 2005), the British Medical Association (Siebern & Manber, 2011), and the British Association for Psychopharmacology (Wilson et al., 2019) all recognize CBT-I as a first-line treatment. The American Academy of Family Physicians (Matheson & Hainer, 2017) recommends behavioral therapy as the “mainstay” of treatment for insomnia; pharmacological interventions are recommended only if behavioral treatments have not effectively addressed the insomnia.

CBT-I is endorsed by top U.S. medical schools: Harvard, “the frontline treatment for insomnia” (<https://www.health.harvard.edu/blog/cognitive-behavioral-therapy-for-insomnia>); Stanford, “the first line treatment for chronic insomnia” (<https://med.stanford.edu/insomnia/clinicalservices.html>); The University of California, San Francisco, “The gold standard, the frontline treatment for insomnia” (<https://magazine.ucsf.edu/best-treatment-insomnia>); Yale, “The recommended first line treatment for chronic insomnia” ([https://medicine.yale.edu/core/current\\_projects/nest/research/](https://medicine.yale.edu/core/current_projects/nest/research/)); the Mayo Clinic, “Effective treatment for insomnia, recommended as the first line of treatment, equally or more effective than sleep medications” (<https://www.mayoclinic.org/diseases-conditions/insomnia/diagnosis-treatment>).

The efficacy of CBT-I as a treatment for chronic insomnia has been established through several controlled research studies (Newsom & Dimitriu, 2020; Trauer et al., 2015). Benefits include improved ability to fall asleep, stay asleep, and wake up less during sleep, with fewer side effects and better results maintained over time than other treatments (Trauer et al., 2015). In direct comparisons with sleep medications, CBT-I achieves more long-term, durable gains, without the negative side-effects of sleep medications (Brasure et al., 2015; Morin et al., 1999; Jacobs et al., 2004; Sivertsen et al.,

2006). CBT-I is also effective with people who have sub-threshold, nonchronic insomnia (Denis et al., 2015).

The efficacy of CBT-I with comorbid mental disorders has also been demonstrated. Wu et al. (2015) found CBT-I to be efficacious for (1) remission from insomnia, (2) self-reported sleep quality (total sleep time; getting to sleep, waking up after sleep, subjective sleep time), and (3) reduction of comorbid symptoms. These findings held across comorbid conditions. Geiger-Brown et al. (2014) examined twenty-three randomized control trials conducted from 1985-2014 on the use of CBT-I in comorbid insomnia. They found that CBT-I improved sleep quality related to measures of sleep onset latency, wake after sleep onset, total sleep time, and sleep efficiency. These effects lasted up to 18 months post-treatment and were consistent across comorbid conditions (pp. 56-64).

Specifically, the use of CBT to treat comorbid insomnia and anxiety has also been shown to be efficacious (Jansson-Frojmark & Norrell-Clarke, 2016; Belleville et al., 2011; Belleville et al., 2016). A study of the impact of CBT-I alone on the symptoms of anxiety found positive but moderate effects (Belleville et al., 2011). Subsequent research conducted after *DSM-5* (2015) guidance to clinicians to treat both disorders, found that sequential treatments of CBT for generalized anxiety disorder (GAD) and CBT-I for insomnia produced superior clinical benefits in both anxiety and sleep (Belleville et al., 2016; Jansson-Frojmark & Norrell-Clarke, 2016). After the use of CBT for GAD, clinically-significant change was measured for anxiety, worry, and sleep. Then, the addition of CBT-I led to an increase in improvements particularly for sleep, but also, to a lesser extent, for anxiety and worry.

Two other treatments, commonly used by therapists to treat anxiety, have also been shown to be effective in treating insomnia. In a review of controlled studies

conducted by Salari et al. (2020), Acceptance and Commitment Therapy (ACT), a therapy built on CBT-I, showed positive short-term outcomes in relieving the symptoms of insomnia (Salari et al., 2020). However, when the stability of sleep improvements over different time periods was evaluated, the results were mixed.

Relaxation Therapy was shown to have minimal impact on improving sleep onset, on increasing sleep duration, on decreasing frequent awakening during the night, and on early awakening without the ability to get back to sleep (Brasure et al., 2015; Informed Health.org., 2017). Brasure et al. (2015) reported the results of two randomized trials of the efficacy of relaxation therapy on adults with insomnia as similar to placebo in reducing sleep onset latency and total sleep time. In addition, researchers found that relaxation therapy for insomnia had no impact on improving daytime functioning—a diagnostic criterion for insomnia (Means et al., 2000).

### **Evidence of Change in Treating Comorbid Insomnia and Anxiety**

Given the *DSM-5*'s (APA, 2015) guidance to clinicians to treat both comorbid insomnia and other mental disorders (Reynolds & O'Hara, 2013), do therapists in clinical practice follow this guidance? Six years have passed since *DSM-5*'s (APA, 2015) revisions called for therapists to treat both disorders. Since CBT is the most widely used treatment for anxiety disorders, since CBT-I is widely recognized as the best practice for treating insomnia, since CBT for anxiety and CBT-I have common scientific underpinnings and treatment methodologies, and since the sequential use of CBT and CBT-I for comorbid anxiety and insomnia has been shown to be efficacious, one could expect to find evidence that a shift in clinical practice is occurring. Evidence is scant, but suggests that that adoption of the practice of treating both comorbid insomnia and anxiety is slow, and that CBT-I is severely underutilized.



Seow et al. (2018) examined the acceptance of the *DSM-5*'s (APA, 2015) guidance among psychiatrists, assessing the extent to which psychiatrists were treating insomnia disorder in the presence of other mental disorders. Their study found that one-third of the patients studied had *DSM-5* (APA, 2015) insomnia disorder, that these patients suffered significantly higher impairment related to their mental disorder than those who did not have insomnia, but that little difference was found in the way patients were treated, whether they had or did not have insomnia. The authors recommended that clinicians place greater emphasis on insomnia treatment in this population, that patients should be educated on the importance of reporting and treating their sleep complaints, and that nonmedical (cognitive and behavioral) interventions for insomnia be increasingly utilized.

Ulmer et al. (2017) conducted a significant study on the perceptions of primary care providers (PCPs) about treating insomnia in the context of comorbid conditions at the VA, the largest health care system in the U.S. Within the VA system, CBT-I is the recommended treatment for insomnia, it is readily accessible, and 86% of the PCPs report that they are aware of the efficacy of CBT-I. While the rate of insomnia and the frequency of its comorbidity with other mental disorders are higher among veterans than in the general population, and while 39% of veterans reported an insomnia complaint to their PCP, Ulmer et al. found that only 29% of PCPs utilize CBT-I, while 70% depend on sedative hypnotics. Furthermore, only 46% of the PCPs document insomnia complaints in the medical record, and 43.1% were uncertain if CBT-I was available at their facility (Koffel et al., 2019). Related to insomnia, the situation at the VA has been described as “Don’t Ask, Don’t Treat” (Ganguly, 2018).

Koffel et al. (2018) asked why patients with insomnia are rarely referred to CBT-I when the treatment is ubiquitously recommended and significantly efficacious. Relevant

to this research, they focused on a barrier related to clinical practice. Therapists are not adequately screening for sleep issues and are not treating insomnia due to lack of knowledge and negative treatment beliefs about CBT-I, which prevent clients from engaging with it.

Perlis et al. (2021) focus on the barriers that keep clients with insomnia from being treated with CBT-I. Why are there too few therapists who treat insomnia? First, therapists do not know that a paradigmatic shift in our understanding of insomnia requires that it be treated as a disorder, either when it presents alone or comorbidly with another disorder. Second, therapists have not been trained sufficiently in the assessment of insomnia or the treatment of it with CBT-I. Third, therapists do not know enough about other sleep disorders to recognize when CBT-I would be contraindicated. Fourth, referral for insomnia care can be difficult, in that it depends on the therapist's knowledge of and experience with local specialists. Fifth, there are too few providers because therapists are unaware of or have not taken advantage of opportunities for developing competence, made available by mandates that extend training and certification down to the master's level. Continuing education opportunities include certification processes for non-physicians and non-Ph.D. psychologists; continuing education on CBT-I training, and membership in societies dedicated to CBT-I and sleep medicine.

### **Urgency**

For those who meet the diagnostic criteria for anxiety disorders, 70-90% exhibit insomnia (Soehner & Harvey, 2012; Van Mil et al., 2010; Uhde & Cortese, 2009). Certainly, the prevalence of such comorbidity makes urgent the need for a therapist to be competent in treating both disorders. This urgency is intensified today by the impact of Covid-19.

Franceschini et al. (2020) studied the bidirectionality of anxiety and insomnia in relationship to the COVID-19 pandemic in northern and central Italy. Social isolation altered sleep patterns and was found to be causative of higher levels of anxiety. More than half (55.32%) of participants reported disrupted sleep quality as a result of the pandemic. They found markedly changed sleep–wake rhythms characterized by earlier or postponed habitual bedtime, earlier habitual awakening time, and a reduced number of afternoon naps. Compared to good sleepers, poor sleepers experienced significantly higher levels of stress, anxiety, and depression.

### **Literature Review Implications**

The literature review demonstrates that research has evolved the understanding of the relationship between anxiety and insomnia from a view that anxiety causes insomnia—insomnia is a symptom of it—to the view that insomnia and anxiety interact bidirectionally—either can cause or exacerbate the other. In its revision of *DSM-5* (APA, 2015), the American Psychiatric Association acknowledges this paradigm shift and focuses on its clinical implications for treating insomnia when comorbid with another mental disorder, such as anxiety. Treatment plans for both disorders should be developed and executed. CBT-I is efficacious in treating insomnia, in isolation, when comorbid with another mental disorder, and specifically with anxiety. It is ubiquitously recommended as a best practice for treating insomnia. Nevertheless, research shows that the uptake of CBT-I, particularly among physicians in hospital settings, has been slow. Finally, there is an urgency to the question of therapist competence to treat comorbid anxiety and insomnia given an increase in its prevalence caused by the disruptions of the current global pandemic.

Much of the research cited above focuses on primary care providers, including psychiatrists and medical doctors, who operated in a hospital setting. Perlis et al. (2021)

refers to opportunities for non-physicians to learn to practice CBT-I, and describes the need for more providers, but does not focus specifically on or provide data about therapists who are not physicians, who regularly treat clients with comorbid anxiety and insomnia. What do those who practice therapy in the field of psychology know about insomnia and how to treat it?

## CHAPTER III:

### METHOD

#### **Participants**

One hundred twenty-two therapists who treat anxiety responded to a survey developed to test their knowledge of insomnia and their approach to treating it. Participants were recruited from a group of 6000 therapists, who practice in Texas, treat anxiety, and are listed in the Psychology Today Directory of Therapists. The email addresses of 1553 of these therapists were identified by following links from the Psychology Today website to their personal or business websites. These addresses were then transferred to contact lists in Qualtrics, through which invitations to take the survey were sent. Reminder emails to those who had not completed the survey were sent after two weeks and a final reminder was sent one week before the survey closed. In addition, 501 personal invitations with a link to take the survey were sent directly to therapists through Psychology Today email (apart from the Qualtrics distribution process). Then 29 personal emails were sent to the leaders of counseling groups or centers, who manage multiple therapists, asking them to distribute the survey to members of their team, as they thought appropriate. No reminder emails were sent to those who were contacted outside the Qualtrics distribution process.

Two weeks after I sent out the first 500 invitations, only 12 responses were recorded. I revised the invitation to address a potential objection, namely, that therapists with little knowledge of insomnia or with no experience treating it, might think that they had nothing to contribute to the research and, consequently, would not complete the survey. The new invitation and subsequent reminders included the following sentence: “Also important is the input of those who treat anxiety, but not insomnia. For many questions, there is an option that says, ‘To answer this, I would only be guessing!’ That

honest answer is very important information to me.” Participation increased significantly after making this change. Incentives to take the survey included an opportunity to enter a drawing for a \$25 gift card and to receive a summary of our findings.

Of the 122 therapists who responded to the invitation, gave informed consent, and recorded responses to the survey, 54 therapists, who did not respond to all of the items, were eliminated from our analysis. Sixty-eight therapists completed the survey; their responses were analyzed. Of these, two therapists, who did not identify their method for treating insomnia, were eliminated from the parts of the analyses that focused on treatment preferences.

Efforts were made to recruit participants with no preference toward race, ethnicity, or gender. Since the participant’s identity was anonymized on Qualtrics, and the survey did not ask participants to identify any personal identifying information, the diversity of those who took the survey was not quantifiable.

The years in practice for the therapists in this study are described in Table 1.

Table 1:  
*Years Practicing as a Therapist, Number and Percentage of Participants*

Years	N	%
0-5	23	34.80
6-10	11	16.67
11-15	12	18.18
16-20	11	16.67
21+	9	13.67

## Materials

### Developing the Survey

From the time of Miller’s (1990) seminal article on the assessment of clinical competence to Gyll and Ragland’s (2018) article on how to build a best-in-class

competency-based assessment, standards of validity and reliability with regard to assessments of competence have been a matter of dispute. There is little agreement on what “competence” is, as the components of competence depend on the context of performance. Determining competence involves both testing at formative stages of competence development, but must also expand beyond multiple-choice questions, to observations of therapists in actual practice by supervisors and by tracking and analyzing their client outcomes with short- and long-term cases (Gyll & Ragland, 2018; Newble, 2004; Wass, et al., 2001). Miller (1990) describes this comprehensive understanding of clinical competence utilizing a pyramid of cognitive competencies, on the basis of which behavioral competence is built. At the base of the pyramid is knowledge of foundational subject matter (“Knows”). Built on this is knowledge about how to treat (“Knows How”). Then, moving to the top of the pyramid, follow the behavioral competencies (“Shows How” and “Does”).

This research focuses on the cognitive aspects of clinical therapeutic competence related to insomnia and the best practices for treating it, which are foundational for actually treating insomnia. By focusing here on “**Knows**” and “**Knows How**”—factors that can be examined through a survey—information is gained about an important starting point, the foundational knowledge required for a therapist ultimately to become effective when treating it.

To increase the likelihood that this survey measures what it purports to measure, I followed some of the design principles set out in Gyll and Ragland (2018) for building a best-in-class competency-based assessment.

*1. Survey purpose.* The purpose of the survey is to assess the extent to which a therapist who treats anxiety understands insomnia (“Knows”) and understands how to treat it (“Knows How”). The assessment is norm-referenced in two ways: first, it

compares the knowledge and know-how scores of therapists to a norm derived from experts who treat insomnia; second, it compares and draws inferences about the knowledge and know-how scores of therapists to a norm consisting of the top performers on the assessment.

**2. *Job/Task Analysis.*** To learn what a therapist who treats insomnia should know about it and what they should know about how to treat it, I consulted: (1) literature on insomnia, bidirectional interaction, practice guidance, and CBT-I described above in the literature review, (2) *DSM-5* (APA, 2015) and guidance based on it to clinicians (Reynolds III & O'Hara 2013), (3) recommendations of and resources provided by the Society of Clinical Psychology (div12.org) regarding best practices for treating insomnia, (4) books and training programs written by recognized experts on the treatment of insomnia, and (5) consultations with psychology professors and practicing therapists. Appendix B sets out for Sections 2 and 3, the survey sections that test knowledge and know-how, the specific resources that validate the correct answer for each item. Based on the “job analysis” of an insomnia therapist, drawn from CBT-I training manuals, I developed a preliminary conceptual framework that set out the survey’s domains of content. I then consulted with practicing therapists and faculty members to test and then revise the framework.

**3. *Create the Test Blueprint.*** The Competency Taxonomy for a therapist who treats insomnia (Table 2) includes the table of specifications—the major content areas to be included in the assessment.



Table 2:  
*Competency Taxonomy*

<b>“Know” (Subject Matter Competence)</b>					
<b>Sleep</b>	<b>Insomnia</b>	<b>Bidirectional Interaction</b>	<b>Other Sleep Disorders</b>	<b>CBT-I</b>	<b>Other Treatments</b>
<ul style="list-style-type: none"> <li>• Optimal sleep duration</li> <li>• Four sleep stages</li> <li>• Basic neurological processes</li> </ul>	<ul style="list-style-type: none"> <li>• Prevalence</li> <li>• <i>DSM-5</i> diagnostic criteria and coding requirements</li> <li>• Three-factor framework</li> </ul>	<ul style="list-style-type: none"> <li>• Prevalence of co-morbid A &amp; I</li> <li>• Know that A &amp; I have hormonal/genetic antecedents</li> <li>• Links of I to all anxiety disorders</li> <li>• Hyperarousal common</li> </ul>	<ul style="list-style-type: none"> <li>• Distinguish I from other sleep disorders:               <ul style="list-style-type: none"> <li>– Sleep Apnea</li> <li>– Restless Leg Syndrome</li> <li>– Circadian Rhythm Disorders</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• CBT-I is the "Standard Model" for treating Insomnia</li> <li>• Case for its effectiveness</li> <li>• CBT-I components</li> </ul>	<ul style="list-style-type: none"> <li>• ACT definition and efficacy</li> <li>• Over-the-counter meds and other meds not recommended</li> <li>• Relaxation therapy techniques</li> </ul>
<b>“Know How” (Clinical Practice Competence)</b>					
<b>Conduct Intake Interview</b>		<b>Use CBT-I to Treat Insomnia</b>		<b>Provide Education</b>	
<ul style="list-style-type: none"> <li>• Objectives of interview</li> <li>• When to conduct insomnia-focused interview</li> <li>• Topics to cover</li> <li>• Client complaints that suggest need to conduct insomnia interview</li> <li>• Psychometric sleep assessments as a part of interview</li> <li>• Sleep studies recommended as a part of initial fact gathering</li> </ul>		<ul style="list-style-type: none"> <li>• Use CBT-I as frontline treatment for insomnia</li> <li>• When to treat insomnia or refer to sleep specialist</li> <li>• Use of sleep log when treating insomnia</li> <li>• Timing to introduce specific treatments or techniques</li> <li>• Number of sessions to complete therapy</li> <li>• Ability to describe, prescribe and monitor sleep hygiene</li> </ul>		<ul style="list-style-type: none"> <li>• Explain the purpose of sleep education</li> <li>• Explain basic science of sleep and insomnia</li> <li>• Explain bidirectional interaction between A &amp; I</li> <li>• Explain the keys to relapse prevention</li> <li>• Explain the A-B-C model of CBT-I</li> </ul>	

**4. Develop the items.** Based on the Competency Taxonomy, I then developed the items for each domain of knowledge and know-how—a total of 92 quantitative items. Items are set out in five sections: (1) information about therapist’s clinical practice (15 items), (2) the therapist’s assessment of her/his own sleep habits (10 items), (2) the extent of the therapist’s knowledge about sleep and insomnia (41 items), (4) the extent of the

therapist's understanding of best practices in the clinic for treating clients with insomnia (20 items), (5) the therapist's desire to learn more about insomnia and how to treat it (6 items). Appendix C provides a comprehensive version of the Competency Taxonomy, with survey items set out under their respective domains of knowledge.

The items in sections 1, 2 and 5 used Likert Scale methodology: multiple response options that span a 5-point range of responses, (e.g., 1= "strongly agree" to 5 = "strongly disagree,"). These were employed for descriptive purposes and to quantify independent variables for inferential analysis (e.g., treatment preference, therapist-reported treatment outcomes, context of learning about insomnia, personal sleep habits and health). Sections 2 and 3 constituted, respectively, a test of knowledge about insomnia and a test of knowledge about how to treat it. The item type for these sections was primarily multiple choice, due to its ability to be used as a measure of higher cognitive skill. For each item in sections 2 and 3, responses fell into one of three categories: (1) correct answer, (2) incorrect answer (3) an admission by the therapist that they would only be guessing.

**5. *Review the items.*** The items were reviewed by members of my thesis committee and other experts that they and I asked to review it. This review focused on accuracy (correctness of answers for test questions), usefulness for measurement, clarity, grammar, and fairness. Revisions were made based on their comments. Finally, survey items and procedures were reviewed and approved by the UHCL CPHS committee (CPHS 21-104).

### **Survey Validity**

In developing the survey, I took only the first steps to validate it. To develop a form of construct validity, I developed a theoretical framework, based on the writings of experts, which was reviewed by a sleep subject matter expert. Some degree of face validity was achieved by having a small group of experts review the questions for form,

clarity, and, where relevant, accuracy/correctness. While my advisors and I reviewed the survey for content validity, the question of whether the test comprehensively measures what should be known about insomnia or covers topics that are irrelevant measures of knowledge or know-how, was not adequately examined. Finally, criterion and predictive validity, necessary to predict clinical practice and outcomes were not addressed.

## **Procedures**

### **Administration**

The survey was administered through Qualtrics and was set up to ensure anonymity with regard both to responses and identifying information. Upon navigating to the website, participants were presented with the informed consent form. A description of the survey's purpose and information about their rights and responsibilities was provided. My contact information was given so that participants could ask questions about their rights or the purpose of the study. Information was also provided about incentives and participants were given opportunity to learn about the findings derived from the study. If informed consent was not given, participants were thanked and dismissed from the website. Participants who indicated their willingness to participate in the study, were immediately taken to the first section. Instructions were provided for each section. Qualtrics calculated the mean number of minutes that participants spent on the survey as 47 minutes. Completed surveys and surveys in process were tracked by Qualtrics. The Qualtrics version of the survey is included as Appendix A.

### **Scoring**

Survey responses, number and text, were first downloaded into Excel, where I hand-scored the results of the test. Section 3 (test of knowledge about insomnia) provided the participants an opportunity to admit that they would be "guessing" if they did not know the correct answer. I scored the test by counting only the correct answers,

for each section (Section 3=41 questions; Section 4=20 questions) and then for the total test (61 items) (See Appendix B).

For some questions I counted 2 answers as correct. For example, in section 3, question 45 asks about the prevalence insomnia in clients who are diagnosed with anxiety. The literature that I reviewed puts the estimate at 70-90%; *DSM-5* (APA, 2015) provides a more conservative estimate at 50%. I counted both responses as correct. Likewise, in several questions in Section 4, treatment option choices sometimes set out responses of which two responses could indicate competence: (1) the therapist correctly uses a practice, and (2) the therapist uses the practice, but with discretion, given the needs of a particular client. For questions that offered these response choices, I counted both responses as correct.

### **Variables**

For the creation of variables and for analysis, I transferred data into SPSS.

***Test Score Variable (Scale).*** For the purposes of this study, I wanted to observe the relationship of test scores to other variables such as treatment preference, treatment outcomes, and how other characteristics of the top of performers on the test compared to others, whose scores were not as high. For this variable, I arranged scores from highest to lowest. This score was then treated as the participant identifier for all variables. Participant responses for every variable were aligned with the participant's test score rank. For example, the highest score on the test was 48. For this participant, all responses in columns for each variable were listed in that row. The process was followed for all participants, down to the two therapists who scored 4 on the test.

***Treatment Preference Variable (Ordinal).*** I created the Treatment Preference Variable by comparing participant responses to two questions. Q6 asks if, when treating comorbid anxiety and insomnia, does the therapist treat both disorders or only the

anxiety? Two subgroups can be observed in participant responses: “Does Not Treat” and “Treats.” Then for the group that “Treats,” I observed their responses to Q67, in which those who treat insomnia indicate their “frontline treatment.” There, 12 therapists indicated that they use CBT-I, 12 use relaxation techniques, two use ACT, and two use other treatments. I reduced this to two groups: (1) CBT-I (12 responses) and ACT (two responses) were joined into one group with 14 therapists (CBT-I), as ACT was significantly underrepresented in the sample of convenience, as these treatment options both derive from a common cognitive-behavioral theoretical framework, and as these treatments have demonstrated similar efficacy in empirical studies; and (2) Treatment with Relaxation Techniques (12 responses). Eliminated from this variable were the two respondents who indicated “Other.”

The word “Preference” is key to understanding that this variable restricts analysis to a therapist’s self-selected frontline treatment. It is reasonable to assume that some therapists have competence in more than one treatment method for insomnia. The purpose Q13 was to identify a therapist’s treatment capabilities behind the frontline treatment, by giving them an opportunity to choose a temporal qualifier (frequency) for several treatment methods: always, most of the time, half the time, rarely, never. This question was defective, however, in that it allowed participants to make the same choice for multiple treatments, which some therapists did. Therefore, for example, a therapist could choose “most of the time” for more than one treatment, rendering frequency of use analysis meaningless. The question, however was useful in one regard. When I analyzed therapists outside the CBT-I subgroup who had scored very high on the test, Q13 was useful as an indicator that a therapist knew and had used a particular treatment method other than the one that was their frontline treatment.

The Treatment Preference Variable therefore contains three subgroups: (1) Do Not Treat; (2) Treats with Relaxation Techniques; (2) Treats with CBT-I. While these treatment preferences could be coded as nominal, I coded them as ordinal, ranking them lowest to highest, according to the comparative empirically-demonstrated efficacy of these treatments, discussed in the literature review: (1) Does Not Treat, lowest, (2) Treats with Relaxation Techniques, middle, and (3) Treats with CBT-I (3), highest.

***Treatment Outcome Variable (Scale).*** This variable was derived from participants responses to: Q4, “How many clients do you treat in a given year?”; Q6, “Of all the clients, how many do you treat for insomnia?”; and Q12, “Please estimate the percentage of the clients you treated for insomnia whose insomnia resolved so that they no longer needed therapy?” For these questions, I was able to derive an estimate of the number of clients a therapist treats for insomnia during a given year. The variable was created by including participants who treated, in a given year, at least five clients for insomnia and had also entered a response to Q12. Twenty-four of the 68 participants were included in this variable.

***DSM-5 Knowledge Variable (Ordinal).*** The development of this variable involved an analysis of three survey items: Q10, Q39, Q40. Early in the survey (Q10), participants were asked to rate their knowledge and understanding of the insomnia classification in *DSM-5* (APA, 2015). They were given the option to acknowledge that (1) they were not aware that changes were made, (2) they were aware that changes were made but were not confident that they knew or understood what they were, (3) they were aware and understood most of them, (4) they knew the changes and understood them. Later in the survey, two questions provide opportunity to confirm or revise that response. Q39 asked participants to identify the major changes to the insomnia classification; and Q40 provided an opportunity to choose a response that would indicate that they knew the

diagnostic criteria. To develop this variable, I took the total of the three scores added together.

## **Analysis**

Descriptive and inferential statistics were used to explore the following topics:

- Treatment Approach to Comorbid Anxiety and Insomnia
- Treatment Preference and Comorbid Anxiety and Insomnia
- Treatment Preference and Test Scores
- Therapists' Insomnia, Problems with Sleep, and Daytime Fatigue
- Treatment Preference and Treatment Outcomes
- Treatment Outcomes, Interview Frequency and the Context of Learning
- Context of Learning and Knowledge about Insomnia
- Treatment Outcomes and Core Knowledge about Insomnia
- Statistically Significant Correlations among Variables
- High Test Scores outside the CBT-I Subgroup
- Therapists' Interest in Learning More about Insomnia and How to Treat It

## CHAPTER IV:

### RESULTS

#### **Treatment Approach to Comorbid Anxiety and Insomnia**

Q8 asked therapists to identify their approach to treating clients when anxiety and insomnia are comorbid. Of the 68 therapists, 40 therapists (58.82%) do not treat the insomnia (“No Treat”), and 28 therapists (41.18%) treat both disorders (“Treat”). Within the “No Treat” group, 27 therapists treat only the anxiety and watch to see if the insomnia goes away. Also, within the “No Treat” group, 12 therapists responded that they do not treat the anxiety, but they do refer the client to a sleep specialist.

#### **Treatment Preference and Comorbid Anxiety and Insomnia**

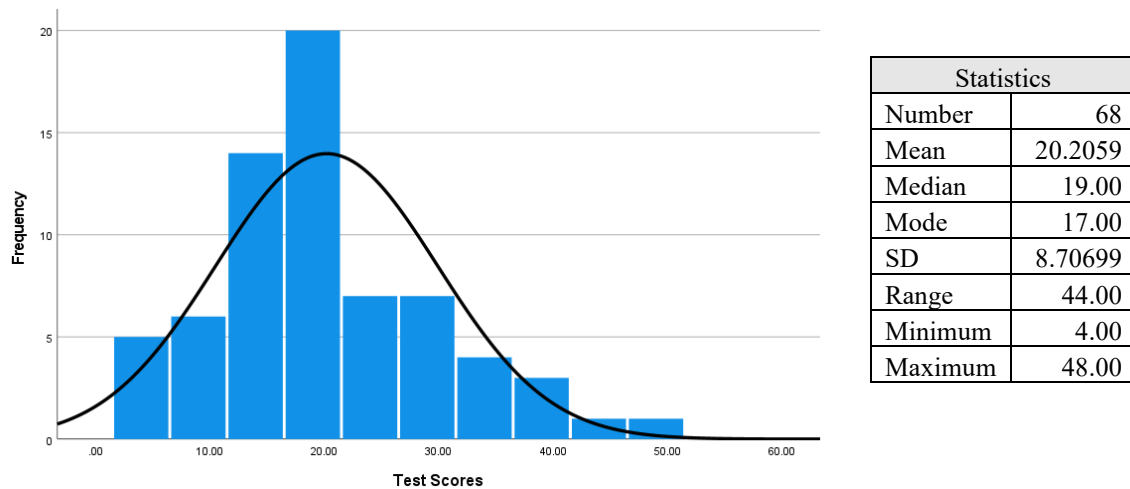
To find the treatment preference for each therapist in the “Treat” subgroup, responses to Q66 (“What is your frontline treatment for treating insomnia?”) were analyzed. Twelve therapists of the 28 who treat insomnia (42.86%) answered “CBT-I”, 12 (42.86%) answered “Relaxation Techniques”, two (7.14%) answered “ACT”, and two (7.14%) answered “Other.” To create the variable “Treatment Preference”, the two participants who treat with “Other” were excluded, as “Other” is not defined treatment type. Also, because ACT was underrepresented in the sample (two respondents), and because it shares a methodological underpinning with CBT-I, I combined the two therapists who treat with ACT with those who treat with CBT-I. The Treatment Preference Variable therefore consists of the responses of survey participants, divided into three subgroups: (1) No Treatment (40 therapists), (2) Treat with Relaxation Techniques (12 therapists), and (3) Treat with CBT-I (14 therapists).

#### **Treatment Preference and Test Scores**

Descriptive observations of the test scores examined relationship between Treatment Preferences and Test Scores. Figure 1, Frequency Distribution of Test Scores,

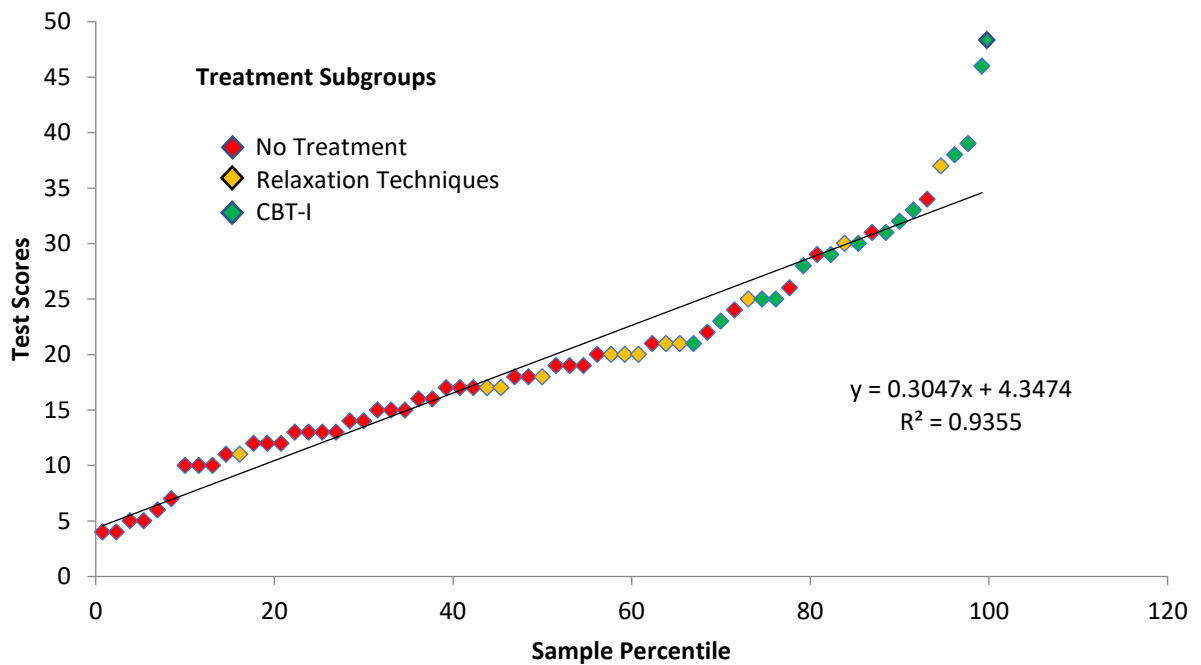


shows a fairly symmetrical bell curve positively skewed to the right (mean = 20.21, median = 19, Skewness = .678). At two deviations to the right of the mean, several very high scores (48, 46, 39, 38, 37) create a long tail.



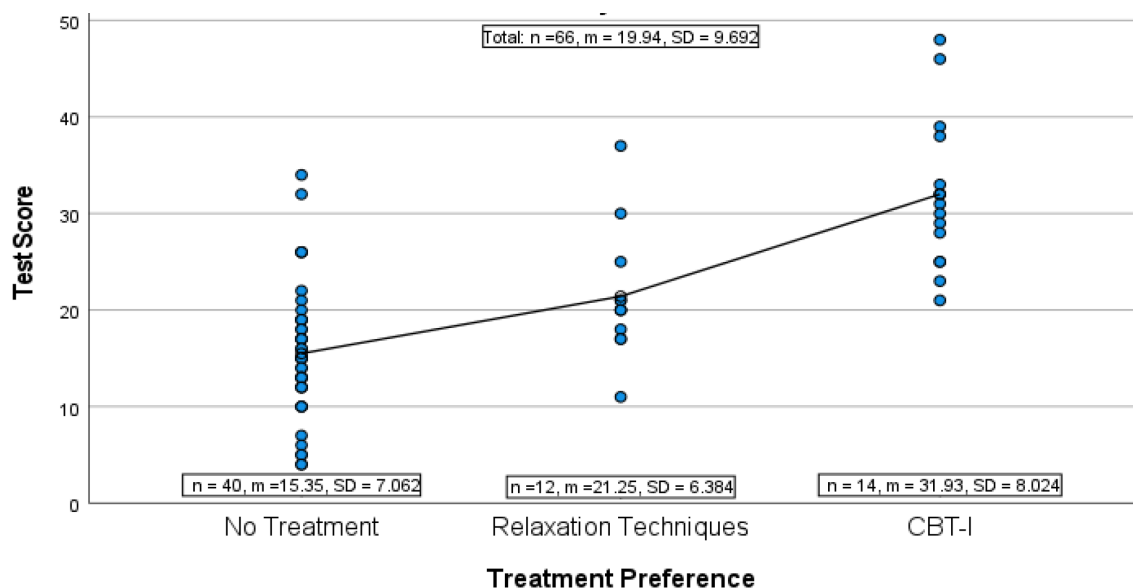
*Figure 1:*  
Frequency Distribution of Test Scores

Seven of the top 10 scores belong to therapists who use CBT-I as a preferred treatment for insomnia. This distribution is illustrated in the probability plot of all scores (Figure 2), which color codes the scores of each subgroup. Two of the CBT-I scores (48, 46) are significantly higher than other participants, respectively 9 and 7 points higher than the third highest score. The relationship between tests scores and the treatment preferences of therapists who treat comorbid insomnia and anxiety was further analyzed because of the distribution by treatment preference.



*Figure 2:*  
Normal Probability Plot of Test Scores, Treatment Preference Color-Coded

As the data for both Test Scores and Treatment Preferences are not normally distributed ( $KS = .008$ ,  $KS = <.001$ ), a chi-square test was conducted to explore the differences in the mean test scores of the three treatment preference subgroups (Figure 3). As the scores of the two therapists who indicated that they treat insomnia with “Other” were eliminated from analysis (see Method Section), the test scores of 66 participants were assessed, 61.8% in the No Treat subgroup, 17.6% in the Relaxation subgroup, 20.6% in the CBT-I subgroup. The results were statistically significant ( $\chi^2 = 86.897$ ,  $df = 64$ ,  $p = .030$ ). The test scores differed by treatment preference.



*Figure 3:*  
Test Scores and Treatment Preferences, Difference of Means

Table 3 displays the test scores and ranks all participants under their preferred treatments for insomnia. Observations of the tabular distributions of test scores among the three groups also indicate that both scores and ranks were lowest for the No Treat subgroup, highest for the CBT-I subgroup, with scores for the Relaxation subgroup in the middle. There were very high scores outside the CBT-I subgroup, both in the Relaxation subgroup and in the No Treat subgroup, which will be discussed below.

Table 3:  
*Treatment Preferences, Raw Scores, and Rank*

<b>Treat Only Anxiety</b>		<b>Treat with Relaxation</b>		<b>Treat with CBT-I</b>	
Score	Rank	Score	Rank	Score	Rank
34	6	37	5	48	1
32	9.5	30	11.5	46	2
29	13.5	25	18	39	3
26	16	21	24.5	38	4
26	17	21	24.5	33	7
24	20	20	28.5	32	8
22	22.5	20	28.5	31	9.5
21	24.5	20	28.5	30	11.5
20	28.5	18	35	29	13.5
19	32	17	39	28	15
19	32	17	39	25	18
19	32	11	56.6	25	18
18	35			23	21
18	35			21	24.5
17	39				
17	39				
17	39				
16	42.5				
16	42.5				
15	45				
15	45				
15	45				
14	47.5				
14	47.5				
13	50.5				
13	50.5				
13	50.5				
13	50.5				
12	54				
12	54				
12	54				
11	56.5				
10	59				
10	59				
10	59				
7	61				
6	62				
5	63.5				
5	63.6				
4	65.5				
4	65.6				

### Therapist's Sleep Quality: Insomnia, Sleep Problems and Daytime Fatigue

In Part Two of the survey, “Your Own Experience with Sleep and Insomnia,” Q24 provided a brief summary of the *DSM-5* (APA, 2015) diagnostic criteria for insomnia and asked participants to indicate whether or not they thought they had insomnia: (1) I get all the sleep I need, (2) I’m tending toward sleeping well, (3) I’m tending toward this disorder, (4) I could be classified as having this disorder, (5) I definitely have this disorder. A review of the distribution of responses for this item revealed that 26.5% of therapists admitted that insomnia was a problem for them. Table 4 shows the frequency distribution of scores across five conditions for all three variables and that therapists reported similar numbers and percentages related to problems with sleep quality (Q19) and high daytime fatigue (Q20), which are indicators of insomnia.

Table 4:  
*Therapists Reporting Insomnia, Poor Sleep Quality and Fatigue*

Question	Response	N	Percentage
Do you think you have insomnia? (Q24)	Sleep Well	28	11.8%
	Tending toward Sleeping Well	22	8.8%
	Tending toward Having Insomnia	8	5.9%
	Could Be Classified as Having Insomnia	6	8.8%
	I Have Insomnia	10	14.7%
How often do you have trouble sleeping? Q19	0 Nights	33	39.7%
	1-2 Nights	9	13.2%
	3-4 Nights	12	17.6%
	5-6 Nights	9	13.2%
	Every Night	4	5.9%
How often do you experience fatigue during the day? (Q20)	0 Days	10	14.7%
	1-2 days	27	39.7%
	3-4 Days	16	23.5%
	5-6 days	4	5.9%
	Everyday	11	16.2%

### **Treatment Preference and Treatment Outcomes**

Q12 asked therapists to estimate the percentage of their clients treated for insomnia, who recovered to the extent that they no longer needed therapy. According to therapists' self-reports, significantly better treatment outcomes for clients with insomnia were achieved with CBT-I ( $m = 74.6\%$ ) than with relaxation techniques ( $m = 25\%$ ).

What is the effect of treatment preferences on treatment outcomes? A Mann Whitney U test revealed that treatment outcomes were significantly higher the CBT-I group ( $md = 74$ ,  $n = 12$ ) compared to the Relaxation Techniques subgroup ( $md = 25$ ,  $n = 12$ ),  $U = 4.000$ ,  $z = -3.933$ ,  $p = <.001$ , with a large effect size,  $r = .80$ .

### **Treatment Outcomes, Interview Frequency, and the Context of Learning**

Is the frequency with which a therapist conducts an insomnia-focused interview at the beginning of therapy (Q66) associated with better treatment outcomes? Participants' mean rank across five conditions of the variable is set out in Table 5. A Kruskal Wallis test revealed no statistically significant difference in treatment outcomes across the five conditions of Interview Frequency,  $\chi^2 = 2.639$ ,  $df = 4$ ,  $p = .620$ . Treatment Outcome and Interview Frequency variables are independent.

Table 5:

*Frequency and Percentage of Therapists who Conduct Insomnia Interviews*

	Frequency	Mean Rank
Never	3	13.17
Sometimes	11	54.2
50%	2	8.3
Most of time	2	4.2
Always	6	12.5

Is the context in which a therapist learns about insomnia associated with better treatment outcomes? Twenty-four therapists who met the criteria for inclusion in the

Treatment Outcomes Variable were included in this analysis. Participants' mean responses across the five conditions of the Context of Learning Variable are set out in Table 6. The results were not statistically significant ( $\chi^2 = 1.77$ ,  $df = 3$ ,  $p = .981$ ). The Treatment Outcome and the Context of Learning variables are independent.

Table 6:  
*Contexts of Learning, Where Therapists Learned to Treat Insomnia*

	Frequency	Mean Rank
Formal Education	9	12.22
Supervisor	4	12.88
Continuing Education	7	13.21
Self-Taught	4	11.50
Never Learned	0	0

### **Context of Learning and Knowledge about Insomnia**

Does the context in which a therapist learns about insomnia have a relationship to their scores on the knowledge portion of the test? As set out in Table 7, Mean Knowledge Tests Scores (where  $m$  = the average number of correct answers on the knowledge portion of the test), were calculated for five contexts of learning, for each subgroup and for the whole sample.

Table 7:

*Context of Learning and Knowledge Scores, Subgroups (Comparison of Mean Scores)*

Context of Learning	No Treatment			Treat with Relaxation			Treat with CBT-I			Total Sample		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Formal Education	7	1.15	3.338	6	9.5	7.120	5	18.8	6.340	18	11.63	7.365
Supervisor Taught	-	-	-	2	9.5	.707	1	20	-	3	13	6.083
Continuing Education	7	7.86	3.237	1	18	-	6	18.67	8.066	14	13.21	7.797
Self-Taught	8	10	3.071	3	11.33	3.215	2	15.50	.707	13	11.15	3.363
Never Learned	16	6.06	3.376	-	-	-	-	-	-	16	6.06	3/376
TOTAL	38	7.42	3.492	12	10.67	5.565	14	18.36	8.246	66	10.68	6.407

### Treatment Outcomes and Knowledge of Three Core Concepts

Within the survey, knowledge was tested related to three core concepts that are therapeutically critical if one who is treating a client's insomnia is to offer a high level of care, specifically when insomnia is comorbid with anxiety. These include: (1) awareness and understanding of the diagnostic criteria for insomnia in *DSM-5* (APA, 2015), important to recognize insomnia and distinguish it from other sleep disorders, (2) the fact that insomnia and anxiety are bidirectionally causative and interactive, and therefore, that both should be treated, and (3) the simple recognition that CBT-I is widely regarded as the standard of care for insomnia. The process for scoring the *DSM-5* Variable is described in the Method Section (the sum of Q10, Q39, Q40). Bidirectionality (Q44) and CBT-I (Q33) are multiple choice items for which there is a correct answer. This section compares the subgroups' performance with regard to these core knowledge variables.

Table 8 compares knowledge measures by subgroup, including mean scores on the three core concepts, overall scores on the knowledge section of the test, years in practice, and treatment outcomes.



Table 8:

*Comparison of Knowledge and Outcome Measures by Subgroup*

Measure Name	Measure	No Treatment	Treat with Relaxation	Treat with CBTI
Number of Therapists	Therapists in Subgroup	38	12	14
Years in practice	Average	6-10	6-10	6-10
Treatment Outcomes, Insomnia	Mean % of recovered clients, self-reports of therapists	Does not treat insomnia	22%	69%
Knows <i>DSM-5</i>	% of group answering correctly (Q10, Q39, Q40)	15.79%	21.43%	50%
Bidirectionality	% of group answering Q44 correctly	34.25%	71.43%	85.71%
Knows CBT-I Status	% of group answering Q33 correctly	13.16%	21.42%	100%
Test Score Know	Mean number items correct	7.95	10.64	18.36

**Statistically Significant Correlations Among Variables**

A bivariate Pearson's correlation test was conducted to analyze relationships among five variables: (1) Treatment Preference (Ordinal), (2) Knowledge of CBT-I's Status (as frontline Treatment for Insomnia) (Ordinal), (3) Knowledge Test Scores (Scale), (4) Overall Test Scores (Scale) and (5) Treatment Outcomes (Scale). Included in this analysis were the scores of 24 therapists who met the criteria for inclusion in the Treatment Outcome Variable. Table 9 shows statistically significant, moderate to strong correlations among all five variables.

Table 9:  
*Statistically Significant Correlations among Five Variables*

		Treatment Preference	Know CBTI Status	Test Scores	Test Scores Knowledge	Treatment Outcomes
Treatment Preference	Pearson Correlation	--				
	N	24				
Know CBTI Status	Pearson Correlation	.775**				
	Sig. (2-tailed)	.000				
	N	24	24			
Test Score	Pearson Correlation	.636**	.562**			
	Sig. (2-tailed)	.001	.004			
	N	24	24	24		
Knowledge Test	Pearson Correlation	.569**	.542**	.962**		
	Sig. (2-tailed)	.004	.006	.000		
	N	24	24	24	24	--
Treatment Outcomes	Pearson Correlation	.817**	.701**	.621**	.556**	
	Sig. (2-tailed)	.000	.000	.001	.005	
	N	24	24	24	24	24

\*\* . Correlation is significant at the 0.01 level (2-tailed)

### **High Test Scores outside the CBT-I Subgroup**

Although CBT-I practitioners tended to perform better on test scores, treatment outcomes, and specific knowledge, among the 13 therapists who answered 30 or more questions correctly on the test, four were outside the CBT-I subgroup. The first and the fourth highest scorers among these therapists selected relaxation techniques as their preferred treatment. The second and the third therapists indicated that they did not treat insomnia. Their test scores were significantly higher than the mean score of therapists in their own treatment subgroup and were higher or equal to the mean scores of CBT-I therapists on both the knowledge of insomnia section and the test overall. The treatment outcomes of those who treat with relaxation techniques were also high relative to their subgroups and within a similar range to CBT-I therapists.

In responding to Q13, all four of the high-scoring therapists outside the CBT-I subgroup indicated that they had used or currently use CBT-I. Their responses in other

parts of the survey strengthen this evidence. Table 10 describes indicators of CBT-I knowledge and know-how for each of these therapists, with reference to their performance, compared to others in their subgroup and to those in the CBT-I subgroup. Scores on all indicators were similar to that of the CBT-I subgroup, with two exceptions. First, both therapists in the No Treat subgroup did not indicate an understanding that anxiety and insomnia are bidirectionally interactive and exacerbating. Second, treatment outcomes of the therapists who treat insomnia with relaxation techniques were significantly below the mean of the CBT-I subgroup (69%). The highest outcome score was (50%).

Table 10:  
*Knowledge of Insomnia and Treatment Expertise outside the CBT-I Subgroup*

Indicators of CBT-I Knowledge and Know-How	Test Scores of High Performing Non-CBT-I Participants			
	Therapist 1	Therapist 2	Therapist 3	Therapist 4
Treatment Preference (Q67)	Relax	No Treat	No Treat	Relax
Can Treat with CBT-I (Q13)	Yes	Yes	Yes	Yes
Their Test Score/Their Subgroup Mean	37/21.35	34/15.25	31/15.25	30/21.3
Their Test Score/CBT-I Subgroup Mean	37/31.93	34/31.93	31/31.93	30/31.9
Knowledge Score/CBT-I Subgroup Mean	22/18.36	20/18.36	18/18.36	18/18.3
Knows <i>DSM-5</i> , Insomnia Classification	Yes	Yes	Yes	Yes
Understands Bidirectionality (Q44)	Yes	No	No	Yes
Knows that CBT-I Is Frontline (Q33) (Q55)	No	Yes	Yes	Yes
Conducts Comprehensive Insomnia Interview Q68)	Yes	Yes	Yes	-
Explains Core Neurological Processes (Q82)	Yes	No	Yes	Yes
Explains ABC model of CBT-I (Q84)	Yes	Yes	Yes	Yes
Recognizes Cognitive Techniques (Q79)	Yes	No	Yes	Yes
Recognizes Behavioral Techniques (Q77)	Yes	Yes	Yes	Yes
Knows Components of CBT-I (Q55)	Yes	Yes	Yes	Yes
Insomnia's Impact on All Anxiety Disorders (Q47)	Yes	Yes	Yes	Yes
Able to Make Sleep Hygiene Recommendations (Q78)	Yes	Yes	Yes	Yes
Knows Common Causative Factors of I & A (Q48)	Yes	Yes	Yes	Yes
Can Recognize Symptoms, Other Sleep Disorders (Q52)	Yes	Yes	Yes	Yes
Treatment Outcomes above 50% (Q12)	No	No	No	No

### Therapists' Interests in Learning about Insomnia and How to Treat It

The final part of the survey asked about the participant's interest in learning more about insomnia and how to treat it. For the purposes of this study, three items were particularly important: "I would like to increase my knowledge and competence in treating my anxiety clients who experience comorbid insomnia" (Q87), "I would like to learn to treat insomnia clients utilizing CBT-I therapy" (Q89), and "I think I need to be more thorough in asking questions about insomnia when treating my clients with anxiety" (Q90). The analysis in Table 11 focuses particularly on the responses of therapists in the Not Treat and the Relaxation subgroups.

Table 11:  
*Desire to Learn More*

Question	Relaxation	No Treat	Total
	Agree	Agree	Agree
Increase competence in treating clients with insomnia? (Q87)	100%	81.58%	86%
Learn to treat insomnia with CBT-I? (Q89)	100%	79.95%	84%
Learn to become more thorough when interviewing clients with insomnia? (Q90)	58.33%	84.21%	78%

The scores of the two participants who treat both disorders with relaxation techniques when comorbid and the two who treat only the anxiety, who were described above as high performing non-CBT-I therapists, were examined to determine if they were a part of the small group who was not interested in learning more, presumably because they were already knowledgeable and competent. All four of these therapists, however, recorded interest in learning more about all three subjects.

## CHAPTER V:

## DISCUSSION

### **Summary**

The purpose of this study was to explore the extent to which therapists who treat anxiety also treat comorbid insomnia. Results indicate that the majority of therapists in this study have not kept up with research that shows that anxiety and insomnia are bidirectionally causative, interactive, and exacerbating. They have not altered the way they treat clients to ensure that, when treating anxiety, issues related to insomnia are identified and specifically addressed. Additionally, when 70%-90% of their anxious clients may be experiencing insomnia as a distinct comorbid mental disorder (Khurshid, 2018; Soehner & Harvey, 2012; Van Mil et al., 2010; Uhde & Cortese, 2009; Staner 2003), they have failed to learn and adopt best practices for treating insomnia.

Of the therapists in this study, 59% reported that they do not treat insomnia when it is comorbid with anxiety, and 82% do not use the most efficacious treatment for insomnia (CBT-I) when their clients are experiencing it. These findings are consistent with the studies of Seow et al. (2018) and Ulmer et al. (2017), who found, following the revisions of *DSM-5* (APA, 2015), that the treatment of comorbid insomnia and mental disorders and the adoption of CBT-I as a standard of care for insomnia was slow among physicians, frontline providers and psychiatrists. The clarion call from Perlis and Smith (2008), “How can we make CBT-I more widely available?” is still very relevant. I am not aware of any published study about the use or rates of adoption of CBT-I within the psychological community.

### **Research Results**

The current findings highlight the differences among three subgroups of therapists who treat insomnia.

First, the performance of the therapists who treat insomnia with CBT-I were superior by every measure. They scored best on the test as a whole and, also separately, for the knowledge and practice sections of the test. Eight of the top 12 scores on the test came from this subgroup. Four of the 12, who were not in the CBT subgroup, had studied CBT-I, two were using it, but not as their frontline treatment.

This level of performance was to be expected, as a basic element of CBT-I requires the therapist to develop a strong underpinning of knowledge about sleep and insomnia (Edington & Carney, 2015; Perlis et al., 2008). A fundamental component of the treatment depends on the therapist's ability, at various times throughout the treatment, to educate clients about a range of topics related to sleep and insomnia. To ensure that CBT-I therapists have sufficient knowledge to impart, the most widely used CBT-I training manuals provide specific knowledge scripts, which therapists are asked to memorize.

The self-reported successful treatment outcomes of the CBT-I group averaged 74%, at the center of the CBT-I efficacy percentage (70-80%) found in the literature (Newsom & Dimitriu, 2020; Trauer et al., 2015). Their mean successful treatment outcome percentage exceeded that of the Relaxation Techniques subgroup by 49%.

Three core knowledge concepts are foundationally critical for a therapist who is treating clients with comorbid anxiety and insomnia: (1) to be able to recognize insomnia and distinguish it from other sleep disorders, a therapist needs an awareness and understanding of the diagnostic criteria for insomnia in *DSM-5* (APA, 2015), (2) knowing that that insomnia and anxiety are bidirectionally causative, interactive, and exasperating is foundational to the adoption of an approach that treats both disorders (Reynolds III & O'Hara, 2013), and (3) the recognition that CBT-I is widely regarded as the most efficacious treatment for insomnia is critical for a therapist to achieve optimal treatment

outcomes with their clients. On all measures related to these concepts, the CBT-I subgroup significantly outscored the other subgroups.

The second subgroup was comprised of therapists who treat anxiety with relaxation techniques. Relaxation techniques are often part of the therapeutic arsenal when treating insomnia. In fact, these techniques often serve as a behavioral component of CBT-I (Edington & Carney, 2015; Perlis et al., 2008). However, as a frontline treatment for insomnia, relaxation techniques are inferior to CBT-I (Brasure et al., 2015; Means et al., 2000; Victor, 2019). Brasure et al. (2015) reported the results of two randomized trials on the efficacy of relaxation therapy for adults with insomnia as similar to placebo in reducing sleep onset latency and total sleep time. In addition, Means et al. (2000) found that relaxation therapy for insomnia had no impact on improving daytime functioning—a diagnostic criterion for insomnia.

Therapists in the Relaxation subgroup did see positive outcomes when using relaxation techniques to treat insomnia with their anxious clients. On the whole, these were significantly lower than those who treat with CBT-I. Also, their knowledge of insomnia and how to treat it lags behind the CBT-I subgroup and is only slightly above the subgroup that does not treat insomnia. As an effective treatment for comorbid insomnia, relaxation techniques are better than not treating the insomnia, but lag far behind CBT-I.

Finally, 40 therapists reported that they only treat anxiety when it is comorbid with insomnia. They performed poorly on the test. Out of 61 test questions, their mean test score was 15.35 correct. Several admitted that they were guessing on every question. More than half admitted they had never taken a formal or continuing education course in insomnia or sleep.

One of the most encouraging findings in the study was that, at the end of the survey, 85% of those in the Relaxation and No Treat subgroups indicated that they wanted to learn more about how to help clients with comorbid sleep and anxiety. They wanted to learn how to conduct a more comprehensive insomnia intake interview (74%), and specifically, they want to learn how to treat insomnia with CBT-I (84%). There was an opportunity for participants to request information about the study when it was completed. Most of participants requested information. I will take that opportunity to provide resources where they can find the training they want.

### **Limitations**

#### **Survey Validity**

As described in the Method Section, while the survey was deemed adequately valid for this level of research, it was not fully validated. Furthermore, the sample size was small, compared to what would be required to make confident inferences from the sample to the general population of therapists from our results. Therefore, throughout this discussion, caution has been taken when drawing conclusions. Our focus here is on the responses of therapists who comprise the sample and what insights might be derived from their responses to survey items, all of which should be viewed as suggestions for further research.

#### **Problems with the Survey and Test**

A more rigorous assessment of the accuracy, functionality, and placement of the survey questions (Gyll & Ragland, 2018) is required to increase confidence in the results of this study. The survey was too long, the identification and construction of variables foundational to our analysis could have been more straightforward, and errors in the functionality of some questions limited their usefulness.



### ***Survey Length.***

The survey was too long. One hundred twenty-two participants signed the informed consent form. Fifty-four started to answer questions and stopped. Sixty-eight fully completed it. Attrition could be due to frustration with an inability to answer the questions—of having to answer “I’m guessing” to most or all of them.

A number of participants quit after (Q64), the point where the survey moves from knowledge about insomnia into knowledge about how to treat it. If a participant had previously answered that they did not treat insomnia, for example in Q8, Q64 could have been perceived as a good place to stop, rather than answering every following question redundantly “I don’t treat insomnia,” as the survey required. If the survey had provided an option to opt out of the treatment questions, and a therapist did, this still would have provided relevant data and possibly added therapists to the list of participants.

In retrospect, to reduce the time it took to complete the survey, there are a number of questions that could have been omitted: (1) all the items in Part Two (therapist’s personal experience with insomnia), which were not directly related to the main purpose of the research, (2) most of the questions in the final section, keeping only the three questions described above, that refer specifically to the therapist’s desire to learn more about how to treat insomnia and coexisting anxiety, (3) at least eighteen questions from the test, two from each of the nine knowledge and know-how categories described in the Competency Taxonomy (Appendix C), (4) debatable are all the questions that require the recognition of percentages: of clients who have insomnia, or have comorbid anxiety and insomnia, or have insomnia and other mental disorders, or whose insomnia appeared before the anxiety.

### ***Placement and Specificity of Items.***

The Treatment Preference Variable was a critical part of the analysis. The foundation for the identification the subgroups was Q8, Q67 and Q13, which were dispersed throughout the survey. As has been described in the Method Section, Q13 did not function properly. More accuracy and confidence in this Variable could have been achieved if these questions had been listed consecutively near the beginning of the survey and revised more specifically to serve their purpose as indicators of treatment preference. As it was, in a few cases, a therapist indicated that they did not treat insomnia in Q8, and then in Q 67 indicated that they treated insomnia with relaxation techniques. I addressed this in two ways. First, Q8 determined whether or not the therapist treated insomnia. If a therapist said they did not treat insomnia in Q8, but Q67 indicated a treatment preference, for that therapist, I scanned through questions in the second part of the test, which provided a specific option for a therapist to indicate whether they treated insomnia or not. In all cases related to this issue, therapists who said in Q8 that they did not treat insomnia, but gave a treatment preference in Q67, later indicated that they did not treat insomnia. Still, my confidence in the accuracy of this variable would increase if the placement, structure and wording of the questions had been different.

### **Participation**

While the results of our analysis concerning the slow adoption of effective treatment methods for insomnia among our participants are consistent with what has been described about the general population of therapists, particularly in the medical field (Seow et al., 2018; Ulmer et al., 2017, Perlis & Smith, 2008), the small size of our participant pool renders it insufficient to generalize our results to general population of therapists who treat anxiety.

Participation in this study was limited to therapists who practice in the state of Texas. Expanding participation to other parts of the country might have produced different results. It would have been interesting to study whether our results would differ in cities where there are well-established training centers for CBT-I (e.g., Philadelphia, Durham, NC, and San Francisco).

Finally, in this study, while we distinguished therapy preferences (e.g., relaxation, CBT-I), we did not ask therapists to indicate their professional treatment branch (e.g., psychology, social work, family practice, pastoral counseling). Each of these have distinct ways of helping clients. It would have been interesting to explore the extent to which these professional choices impact the therapist's knowledge or expertise when treating insomnia.

### **Recommendations for Future Research**

#### **Carry this Work Forward**

In terms of future research, it would be useful to extend and confirm our findings more comprehensively. If confirmed, evidence-based research on this subject could be disseminated throughout the community of professional therapists, who regularly confront insomnia when treating mental disorders. My findings suggest that the current situation is concerning. If future research shows that therapists are not serving their clients well because they do not understand insomnia or how to treat it effectively, such research could motivate therapists to develop competence in this area, and stimulate greater interest in budding therapists to dedicate their professional lives to helping people with sleep issues.

Systemically, within academic institutions, future research that confirms our findings could result in curriculum changes that require insomnia education for all students who are preparing for a professional life as a therapist. Additionally, such

research could lead to more focused and well-publicized continuing education offerings in insomnia, more certification programs in CBT-I, and greater awareness in the general public that effective help is available for the many who struggle to sleep well.

### **Improve and Validate the Survey and Test**

Future research requires an instrument that is widely acknowledged as a valid yardstick for assessing therapist competence in understanding and treating insomnia. To carry this work forward, the survey and its embedded test need to be trimmed down, revised and fully validated. Following the steps set out in Gyll and Ragland (2018), this would involve first, the development and inclusion of a team of experts on sleep, insomnia and treatment methods, who would evaluate and confirm the validity of the theoretical framework (the competency taxonomy), and furnish an operational definition of competence that could be subsequently validated by empirical data. Second, the team of experts should conduct a review of each survey item to ensure that all are accurate, clear, correctly structured, and not technically flawed. Also, the test should be evaluated for fairness, such that it would not disadvantage any subgroup. Third, as a part of the item analysis, the items should be field tested by therapists who are representative of the larger population of therapists to identify, discard or replace items that are not functioning well. Statistical analysis can be performed to show which items are too difficult and which might be good or poor discriminators between survey-takers who are knowledgeable and those who are not. Finally, a process to set test norms should be conducted to determine a passing score and the extent to which scores can be used to classify test takers as competent or not.

### **Expand the Pool of Participants**

Consideration needs to be given to the question of how to increase participation in a study like this when a large percentage of the therapist population is busy, not

necessarily competent in this area, and is not readily accessible. Potentially, this could involve expanding the process that was undertaken for this study, from Texas alone to other states. This process was cumbersome, but I am not aware of another way to identify and find the contact information of psychologists who treat a specific disorder, such as anxiety. Additionally, certainly a more motivational invitation could be sent to potential participants.

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# APPENDIX A:

## SURVEY

10/19/21, 10:30 AM

Edit Survey | Qualtrics Experience Management

Tools ▾

Saved at 6:38 AM

Draft



Preview

Publish

Insomnia: Knowledge and Therapeutic Practice among Therapists Who

iQ Score: Fair

▼ Informed Consent to Participate in Research

Q95

...

### INFORMED CONSENT TO PARTICIPATE IN RESEARCH

You are being asked to participate in the research project described below. Your participation in this study is entirely voluntary and you may refuse to participate, or you may decide to stop your participation at any time. Should you refuse to participate in the study or should you withdraw your consent and stop participation in the study, your decision will involve no penalty or loss of benefits to which you may otherwise be entitled. You are being asked to read the information below carefully, and ask questions about anything you don't understand before deciding whether or not to participate.

TITLE: Insomnia: Knowledge and Clinical Practice Among Therapists Who Treat Anxiety

PRINCIPAL INVESTIGATORS: Paul Feiler, Chris Ward, Ph.D., Angela Kelling, Ph.D.

PURPOSE OF THE STUDY: The purpose of this research is to assess the understanding and clinical practice of therapists who treat anxiety with regard to clients who suffer comorbid insomnia. Specifically, this research project will address three research questions:

1. Among therapists who treat anxiety, what is their level of knowledge about insomnia and methods to treat it?
2. Among therapist who treat anxiety, do they also treat insomnia disorder and if so, what therapeutic practices do they use?
3. Do therapists who treat anxiety practice healthy sleep routines themselves?

You are consenting to be a part of the Insomnia research study. This consent will allow you access to survey, where you can complete it. No personal identifying information will be collected and data (your survey responses) will be handled in an anonymous manner; Internet protocol addresses will not be collected by the survey program.

Additionally, at the end of the survey, you will be given the opportunity to click a button that will take you to a separate website, where you can (1) register for a drawing to win one of twenty \$25 gift cards, and (2) to receive a summary of survey results. Any identifying information you provide for these opportunities, again, is separated from survey data by the survey software. Whether you register for these opportunities or not, your survey responses are anonymous.

EXPECTED DURATION: The total anticipated time commitment will be approximately 30 - 45 minutes.

[https://uhcl.co1.qualtrics.com/survey-builder/SV\\_bDQZ8RZI7FKW5lq/edit?Section=SV\\_bDQZ8RZI7FKW5lq](https://uhcl.co1.qualtrics.com/survey-builder/SV_bDQZ8RZI7FKW5lq/edit?Section=SV_bDQZ8RZI7FKW5lq)

1/34



**RISKS OF PARTICIPATION:** There are no anticipated risks associated with participation in this project.

**BENEFITS TO THE SUBJECT:** Participation in the study has no direct benefits. Survey participants may be motivated to learn more about sleep science and insomnia and to incorporate treatments for insomnia into their treatment of clients with anxiety. Participants may also be motivated to learn more about the importance of sleep for their own mental, emotional and physical well-being.

**CONFIDENTIALITY OF RECORDS:** As stated above ("Procedures"), every effort will be made to maintain the confidentiality of your survey responses. The data collected from the study will be used for educational and publication purposes, however, you will not be identified by name. For federal audit purposes, the participant's responses for this research project will be maintained and safeguarded by Dr. Chris Ward for a minimum of three years after completion of the study. After that time, the participant's responses may be destroyed.

**FINANCIAL COMPENSATION:** There is no financial compensation to be offered for participation in the study. Incentives for participation include (1) the opportunity to register for a drawing to win one of twenty \$25 gift cards and (2) the opportunity for participants to receive a summary of survey results.

**INVESTIGATOR'S RIGHT TO WITHDRAW PARTICIPANT:** The investigator has the right to withdraw you from this study at any time.

**CONTACT INFORMATION FOR QUESTIONS OR PROBLEMS:** The investigator has offered to answer all your questions. If you have additional questions during the course of this study about the research or any related problem, you may contact the Principal Investigator, Paul Feiler, at 713-256-9039 or by email at FeilerP9556@uhcl.edu.

**PROVIDE YOUR CONSENT BY ANSWERING THE QUESTION BELOW:** To protect anonymity, please answer "yes" or "no" to this question. Do you acknowledge your voluntary participation in this research project? (Such participation does not release the investigator(s), institution(s), sponsor(s) or granting agency(ies) from their professional and ethical responsibility to you. You are not waiving any of your legal rights.)

- ☐ YES, I WILL VOLUNTARILY PARTICIPATE IN THIS RESEARCH PROJECT
- ☐ NO, I DO NOT WISH TO PARTICIPATE AT THIS TIME

Import from library

+ Add new question

Information about Your Clinical Practice

----- Page Break -----

Q3

How many years have you practiced as a licensed therapist?

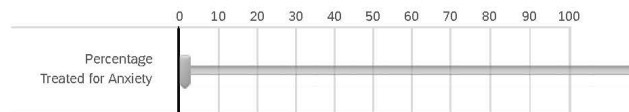
- ☐ Still in Supervision
- ☐ 0-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20
- ☐ 21+

Q4

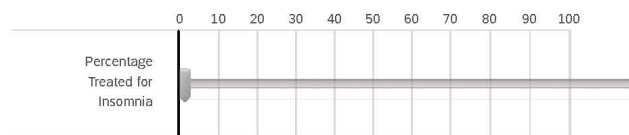
In a typical year, please estimate the number of clients you treat.

- ☐ Fewer than 20
- ☐ 20-39
- ☐ 40-59
- ☐ 60-79
- ☐ 80-99
- ☐ 100+

Q5

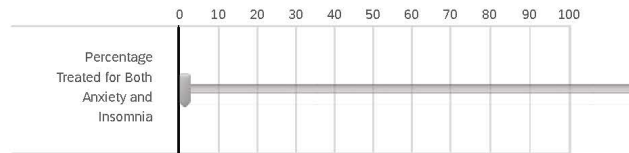
During a typical year, of all the clients you treat, please estimate the percentage of them do you treat for ANXIETY? (slide the bar to the right)

Q6

During a typical year, of all the clients you treat, please estimate the percentage of them do you treat for INSOMNIA DISORDER?

Q7

During a typical year, of all the clients you treat, please estimate the percentage of them that you treat for BOTH anxiety and insomnia disorders.



Q8

When working with clients with both anxiety and insomnia disorders, I generally:

- ☐ Treat both disorders
- ☐ Treat anxiety disorders and refer insomnia issues to a physician or sleep specialist
- ☐ Treat the anxiety and see if the sleep issues resolve
- ☐ Treat the sleep issues and see if the anxiety issues resolve
- ☒ Not applicable

Q9

If you treat insomnia, where did you learn to practice this therapy? Select as many as apply.

- ☐ Part of formal education in preparation to become a therapist
- ☐ My supervisor taught me
- ☐ I completed a continuing education course (online or in-class)
- ☐ I learned it on my own (reading, or personal experience with clients)
- ☐ I have not learned to treat insomnia disorders

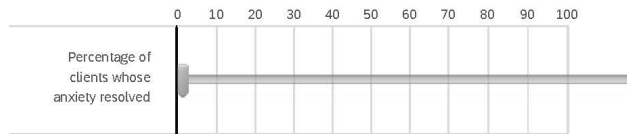
Q10

Based on a significant body of research, DSM-5 (2015) significantly changed its description and classification criteria for insomnia disorder. Please rate your familiarity and understanding of these changes:

- ☐ I wasn't aware that changes were made
- ☐ I'm aware that changes were made, but am not confident that I know what they are or understand them
- ☐ I'm aware that changes were made and understand most of them
- ☐ I know what these changes are and understand them

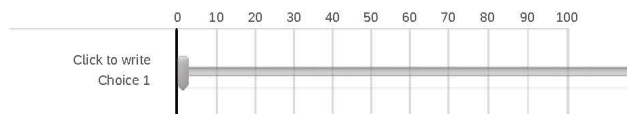
Q11

Over the last year, please estimate the percentage of your clients whose anxiety resolved, so that they no longer needed therapy.



Q12

Over the last year, please estimate the percentage of your clients whose insomnia resolved so that they no longer needed therapy.



Q13



Please complete this matrix to indicate the frequency with which you use the following treatments with clients who have insomnia. Skip this question if you do not treat insomnia.

	Never	Rarely	About half the time	Most of the time	Always
Biofeedback treatments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paradoxical intention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxation training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleep restriction therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Light therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Melatonin or other over-the-counter medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CBT-I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EFT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Another treatment not listed here	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14

I have noticed an increase in insomnia-related issues during the COVID-19 pandemic.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q15

I have noticed an increase in anxiety-related issues during the COVID-19 pandemic.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q16

I have noticed an increase in clients who have both anxiety and insomnia issues during the COVID-19 pandemic.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

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Therapist Sleep Habits.

Q17

**Part Two: Your Own Experience with Sleep and Insomnia**

This section asks you personal questions about your own experience with sleep and insomnia. Again, your responses are completely anonymous and confidential.

Q18

About how many nights per week do you sleep well enough to feel refreshed and ready to go in the morning?

- ☐ No nights
- ☐ 1-2 nights
- ☐ 3-4 nights
- ☐ 5-6 nights
- ☐ Every night

Q19

About how many nights per week do you have trouble sleeping (either not being able to fall asleep, waking up during the night, or getting up too early and not being able to get back to sleep)?

- ☐ No nights
- ☐ 1-2 nights
- ☐ 3-4 nights
- ☐ 5-6 nights
- ☐ Every night

Q20

About how many days per week do you feel fatigue during the day.

- ☐ Never
- ☐ No days
- ☐ 1-2 days
- ☐ 3-4 days
- ☐ 5-6 days
- ☐ Every day

Q21

As part of my normal sleep routine, I do the following (please check all that apply)

- ☐ I don't have a normal sleep routine
- ☐ Almost every night I go to bed near the same time
- ☐ I have a fixed wake-up time, whether it's a weekend or a weekday
- ☐ I limit my naps to a short nap in the early afternoon
- ☐ 30-60 minutes before bed, I unplug from all electronics
- ☐ I practice relaxation, mindfulness or other relaxation techniques to prepare for sleep
- ☐ If I can't get to sleep for 20 minutes, I get up and stretch, read or do something else calming

Q22

As a part of my normal sleep routine, I do the following (please check all that apply)

- ☐ I use my bed only for sleep and sex
- ☐ I limit alcohol 4 hours before bedtime
- ☐ I limit caffeine in the afternoon and the evening
- ☐ I have a comfortable pillow and mattress
- ☐ I have a way to reduce the level of light in my bedroom
- ☐ I have a way to reduce noise levels in my bedroom
- ☐ If my bedmate has a loud snoring problem that keeps me awake, I've asked her/him to get help with it

Q23

When I go to bed, I am able to disengage my mind and heart from the problems of my clients, so that I am not still thinking about their suffering and how I might help them.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q24

The DSM-5 describes insomnia disorder as difficulty going to sleep, staying asleep through the night and waking up early for at least three nights per week over a three-month period. Given this definition,

- ☐ I am getting all the sleep I need to wake up refreshed each morning
- ☐ I'm somewhere in between sleeping well and having insomnia, but tending toward sleeping well
- ☐ I'm somewhere in between sleeping well and having insomnia, but tending toward have this disorder
- ☐ I could be classified as having insomnia
- ☐ I definitely have insomnia

Q25

I have dreams that make me feel uneasy or apprehensive when I wake up.

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always

Q26

My sleep quality has gotten worse during COVID-19.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree



Q27



Please indicate the frequency with which you have used any of the following to help you sleep better.

	Never	Sometimes	About half the time	Most of the time	Always
Prescription medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Over-the-counter medications or melatonin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-counseling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional help (therapist or physician)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxation techniques	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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▼ Understanding Sleep

Q28

**Part Three: Understanding Sleep, Insomnia, and Clinical Treatment Alternatives**

This section assesses your knowledge of the science of sleep, insomnia, the relationship of insomnia and anxiety, and various treatment options for clients experiencing insomnia.

We understand that you may or may not currently treat clients who have insomnia disorder or may not currently be up to speed on the subject. That's OK. Each multiple choice question gives you an opportunity to select a correct answer. If you know it or think you know it, choose the correct response. If you have no idea what the correct answer is, each question has an option for you to select: "To answer this question, I would only be guessing." For the purposes of our research, if you don't know the answer, that would be a helpful response for us.

Q29

When a client complains about insomnia, all of the following are important reasons to screen for other sleep disorders, except . . .

- ☐ Another sleep disorder might cause or worsen insomnia
- ☐ Insomnia might worsen another sleep disorder
- ☐ The insomnia disorder classification includes other sleep disorders
- ☐ The "Standard" approach to treating insomnia is contraindicated for certain untreated sleep disorders
- ☐ To answer this, I would only be guessing

Q30

To maintain optimal cognitive and behavioral functioning, how many hours of sleep per night do people need?

- ☐ 5 to 7 hours
- ☐ 7-9 hours
- ☐ 9-11 hours
- ☐ It depends on the age of the person
- ☐ To answer this, I would only be guessing

Q31

In addition to the amount (hours) of sleep a person gets each night, it's also critical that:

- ☐ a. The person goes through four to six sleep cycles per night
- ☐ b. The person's sleep is not interrupted
- ☐ c. The person's sleep cycles are about the same length
- ☐ Both a and b
- ☐ Both a and c
- ☐ To answer this, I would only be guessing

Q32

Of the four stages of sleep, this sleep stage occurs for longer periods during the first part of the night and is essential for making you feel refreshed in the morning.

- ☐ Stage N1, Non-REM Sleep
- ☐ Stage N2, Non-REM Sleep
- ☐ Stage N3, Non-REM Sleep
- ☐ Stage R, REM Sleep
- ☐ To answer this, I would only be guessing

Q33

The APA, NIH State-of-the-Science Statement, and the American Academy of Sleep Medicine recommend the following evidence-based treatment as the "Standard Model" for front-line treatment of insomnia.

- ☐ ACT
- ☐ CBT-I
- ☐ CBT-ZZZ
- ☐ Relaxation Training
- ☐ To answer this, I would only be guessing

Q34

These brain waves are long and slow and are associated with the deepest levels of restorative and healing sleep.

- ☐ Alpha
- ☐ Beta
- ☐ Gamma
- ☐ Delta
- ☐ To answer this, I would only be guessing

Q35

This chemical is produced during the day as we burn energy and makes us feel increasingly drowsy as the day moves toward night.

- ☐ Cortisol
- ☐ Melatonin
- ☐ Adenosine
- ☐ Serotonin
- ☐ To answer this, I would only be guessing

Q36

This neurological process, often called the "biological clock", is associated with putting us to sleep and waking us up.

- ☐ Homeostatic sleep drive
- ☐ Circadian rhythms
- ☐ Sleep debt
- ☐ Phase-shifted exposure to light
- ☐ To answer this, I would only be guessing

Q37

The neurological process associated with making us tired the longer we are awake is:

- ☐ Homeostatic sleep drive
- ☐ Circadian rhythms
- ☐ Hyperarousal
- ☐ Phase-shifted exposure to light
- ☐ To answer this, I would only be guessing

Q38

Approximately what percentage of the US population experiences acute insomnia each year?

- ☐ Up to 25% of the adult population
- ☐ Up to 50% of the adult population
- ☐ Up to 66% of the adult population
- ☐ Up to 80% of the adult population
- ☐ To answer this, I would only be guessing

Q39

The primary change in the insomnia classification from DSM-4 to DSM-5 is:

- ☐ Insomnia is now distinguished from other sleep disorders
- ☐ Insomnia cannot now be attributable to the psychological effects of a substance
- ☐ Clinicians should now view insomnia less as a symptom of other mental illnesses and treat it as a primary disorder
- ☐ All of the above
- ☐ To answer this, I would only be guessing

Q40

According to DSM-5, a diagnosis of insomnia disorder is justified if all of the following are true, except:

- ☐ The client has difficulty getting to sleep
- ☐ The client wakes up frequently during the night
- ☐ The client has difficulty staying awake at work
- ☐ The client has had an overnight sleep study
- ☐ To answer this, I would only be guessing

Q41

When coding insomnia, therapists are required to specify if:

- ☐ Insomnia is comorbid with a nonsleep mental disorder
- ☐ The disorder has been present for more than three months
- ☐ Other sleep disorders are not present
- ☐ No behavioral impairment is reported by the client
- ☐ To answer this, I would only be guessing

Q42

To characterize the nature of insomnia over time, psychologists have developed a three-factor framework. The factors are:

- ☐ Predisposing, Precipitating, Perpetuating
- ☐ Early, Acute, Chronic
- ☐ Premorbid, Precipitating, Chronic
- ☐ Premorbid, Early, Chronic
- ☐ To answer this, I would only be guessing

Q43

What percentage of adult patients with mental disorders also experience insomnia?

- ☐ Up to 25%
- ☐ Up to 50%
- ☐ Up to 80%
- ☐ Up to 90%
- ☐ To answer this, I would only be guessing

Q44

Which statement best characterizes the relationship between anxiety and insomnia

- ☐ The relationship is unidirectional; anxiety causes insomnia, but insomnia can make anxiety worse.
- ☐ The relationship is unidirectional; insomnia causes anxiety, but anxiety can make insomnia worse
- ☐ The relationship is bidirectional; each can cause and exacerbate the other
- ☐ Insomnia is a comorbid condition associated with anxiety; they often exist side-by-side, but research has not linked them causatively.
- ☐ To answer this, I would only be guessing

Q45

Symptoms of insomnia are present in approximately what percentage of anxiety disorders?

- ☐ 10%-30%
- ☐ 31%-50%
- ☐ 51%-70%
- ☐ 70%-90%
- ☐ To answer this, I would only be guessing

Q46

Anxiety and insomnia are linked because:

- ☐ a. The hormones that regulate sleep and waking are the same hormones that can cause anxiety
- ☐ b. Based on "Clock Dependent Alerting," there is a decrease in the production of alerting hormones and an increase in symptoms related to anxiety.
- ☐ c. Based on the production of sleep/wake hormones, anxiety symptoms are worse in the evening
- ☐ d. Genetic influences on anxiety and insomnia overlap
- ☐ All of the above describe critical links
- ☐ Only a and d describe critical links
- ☐ To answer this, I would only be guessing

A47

Sleep disorders have been associated with which of the following anxiety disorders?

- ☐ a. Generalized anxiety disorders
- ☐ b. OCD
- ☐ c. Panic Disorder
- ☐ d. PTSD
- ☐ All Anxiety Disorders
- ☐ Only a and c
- ☐ To answer this, I would only be guessing

Q48

A key common factor in causation of both insomnia and anxiety is:

- ☐ A state of hyperarousal
- ☐ Low sleep reactivity
- ☐ Lower sensitivity to the effects of insufficient sleep
- ☐ Somatic quieting
- ☐ To answer this, I would only be guessing

Q49

In cases where anxiety and insomnia are comorbid, which statement is true?

- ☐ In over 60% of the cases, insomnia appeared after the anxiety
- ☐ In over 50% of the cases, insomnia either appeared before or at the same time as the anxiety appeared
- ☐ Whether or not insomnia was comorbid with anxiety was not relevant to the severity of the anxiety
- ☐ Features of anxiety do not always comprise signs of increased arousal or alertness that could lead to sleep-wake irregularities
- ☐ To answer this, I would only be guessing

Q50

Which of the following disorders fall under the DSM-5 classification of Insomnia Disorder?

- ☐ Sleep Apnea
- ☐ Restless Leg Syndrome
- ☐ Narcolepsy
- ☐ Sleepwalking
- ☐ None of the above
- ☐ All of the above
- ☐ To answer this, I would only be guessing

Q51

Sleep Restriction is contraindicated for clients with this sleep disorder:

- ☐ Insomnia
- ☐ Sleep Apnea
- ☐ Restless Leg Syndrome
- ☐ Narcolepsy
- ☐ Sleepwalking
- ☐ To answer this, I would only be guessing

Q52

People with this sleep problem have an uncontrollable urge to move, which causes problems with falling asleep, staying asleep or unrefreshing sleep:

- ☐ Insomnia
- ☐ Sleep Apnea
- ☐ Restless Leg Syndrome
- ☐ Night Terrors
- ☐ To answer this, I would only be guessing

Q53

A Circadian Rhythm Disorder may cause problems:

- ☐ a. Falling asleep due to a delayed sleep phase
- ☐ b. Waking up due to an advanced sleep phase
- ☐ c. Falling asleep due to an advanced sleep phase
- ☐ d. Waking up due to a delayed sleep phase
- ☐ Both a and b
- ☐ Both c and d
- ☐ To answer this, I would only be guessing

Q54

CBT-I is an effective treatment for insomnia for all of the following reasons except:

- ☐ It addresses both the precipitating and perpetuating causes of insomnia
- ☐ It has an immediate short-term impact on insomnia
- ☐ It's impact has a lasting effect
- ☐ There is no evidence of side effects
- ☐ There is strong evidence for its effectiveness
- ☐ To answer this, I would only be guessing



Q55

This approach to treating insomnia uses components such as psychology education in sleep health, behavioral interventions such as stimulus control, with a special emphasis on cognitive factors and processes.

- ☐ ACT
- ☐ CBT-ZZZ
- ☐ CBT-I
- ☐ Sensory deprivation
- ☐ To answer this, I would only be guessing

Q56

Which of the following client characteristics would rule out the use of CBT-I with the client?

- ☐ The client is sufficiently motivated to use CBT-I
- ☐ The client is sufficiently intelligent to use CBT-I
- ☐ The client is not an adult
- ☐ The client has no conditions that would contraindicate the use of CBT-I
- ☐ To answer this, I would only be guessing

Q57

Stimulus control therapy could include all of the following instructions except:

- ☐ Use your bed only for sleep or sex
- ☐ After 45 minutes from the time you go to bed, if you are unable to fall asleep, get up and go into another room
- ☐ If you are unable to fall asleep, get out of bed and engage in quiet sedentary activities
- ☐ If you return to bed and cannot fall asleep within 10-20 minutes, again get up and go into another room
- ☐ To answer this, I would only be guessing

Q58

Titration is a component of the CBT-I treatment process that requires the therapist to:

- ☐ Increase or decrease a client's sleep medication based on the client's report of how well it is working
- ☐ Estimate the impact that insomnia is having on the client's performance at home or work
- ☐ Adjust the client's sleep goals, based on the client's performance during the previous week.
- ☐ Measure the effect of sleep hygiene practices on improving sleep quality
- ☐ To answer this, I would only be guessing

Q59

In the Cognitive Therapy Model, the therapist intervenes at which stage?

- ☐ Activator--the event that is experienced as the problem (poor sleep, feeling sleepy or tired during the day)
- ☐ Belief--what the client thinks about the activator
- ☐ Consequence--the feeling that the client has about the insomnia
- ☐ Perpetrators--the ongoing factors that support the recurrence of insomnia
- ☐ To answer this, I would only be guessing

Q60

This treatment for chronic insomnia, includes six treatment processes: acceptance, diffusion, content with the percent movement, self as context, values, and committed action.

- ☐ EFT
- ☐ CBT-I
- ☐ ACT
- ☐ CBT-ZZZ
- ☐ To answer this, I would only be guessing

Q61

Recent research has shown that this treatment method can be as effective as CBT in treating physical and mental disorders such as chronic pain, anxiety, depression and insomnia:

- ☐ Bilateral Tapping
- ☐ EFT
- ☐ Relaxation Therapy
- ☐ ACT
- ☐ To answer this, I would only be guessing

Q62

Which of the following techniques should not be used when treating insomnia in anxious clients.

- ☐ Stimulus control therapy
- ☐ Sleep restriction
- ☐ Remaining passively awake
- ☐ CBT in combination with over-the-counter sleep aids.
- ☐ To answer this, I would only be guessing

Q63

Which of the following statements about the use of medications to treat insomnia is FALSE?

- ☐ Melatonin has a modest impact on sleep quality
- ☐ Benzodiazepines are recommended for treating insomnia
- ☐ No medications should be used as a first-line treatment for insomnia
- ☐ Physician-prescribed adjunctive medications can be used with clients if behavioral treatments are ineffective
- ☐ After behavioral therapy has been unsuccessful at reducing insomnia, Z-drugs and low-dose doxepine are best practice recommendations for improved sleep quality
- ☐ To answer this, I would only be guessing

Q64

Autogenic training, biofeedback, meditation, visualizations, progressive muscle tensing/releasing, and deep breathing practices are often used by therapists to help their clients with insomnia. Collectively these techniques are often called:

- ☐ Stimulus control techniques
- ☐ Relaxation techniques
- ☐ Somatic therapy
- ☐ EFT
- ☐ To answer this, I would only be guessing

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▼ Clinical Practice

Q65

**Part Four: Treating Clients with Anxiety and Insomnia Disorders**

This section provides information about your clinical practices with clients who come to you for help with insomnia, or clients who come to you with anxiety and also present with symptoms of insomnia.

We understand that some of you may not treat clients with insomnia. That's OK. As in other parts of this survey, if you cannot answer the question, because you do not work with clients who suffer insomnia, there is an opportunity with each question to acknowledge that.

Also, many of the questions in this section focus on evidence-based treatments for insomnia. We understand that for some of you who treat insomnia, there may be a question in the survey about a method that you do not use. Nevertheless, you still may be able to answer the questions about methods you do not use. Please do so if you can. If you can't or choose not to, an opportunity is provided to indicate that you don't use that method or that you would only be guessing.

Q66

In treating clients with anxiety, at the beginning of treatment, I conduct an insomnia-focused interview or ask the client to complete a sleep history questionnaire:

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always

Q67

My frontline treatment for clients with insomnia is:

- ☐ ACT
- ☐ CBT-I
- ☐ Relaxation techniques
- ☐ EFT
- ☐ Another form of treatment
- ☐ I do not treat clients with insomnia

Q68



Please use the following frequency matrix to describe the topics you cover when conducting an insomnia-focused intake interview (or topics that are on the sleep questionnaire that you use). Skip this question if you do not conduct insomnia-focused interviews with your anxiety or insomnia clients.

	Never	Sometimes	About half the time	Most of the time	Always
History (onset, course, duration, sleep schedule)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Symptoms (daytime, social, work impact)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perpetuating factors (what makes it worse, bedroom beliefs, bedroom routines, daily lifestyle, partner snoring)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychological factors (anxiety, depression, general stress, grief or loss)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medications and any substance abuse, alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General medical history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other sleep problems (sleep apnea, restless leg syndrome, sleep walking, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treatment expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q69

When conducting an intake interview with a client who complains about anxiety with sleep issues, I try to determine all of the following except:

- ☐ Which type of medication would be best to treat both concerns (anxiety and insomnia)
- ☐ Which came first, the anxiety or the insomnia
- ☐ If the client behaves in ways that are maladaptive for sleep
- ☐ Whether another sleep disorder, besides insomnia, is causing the sleep issues
- ☐ The duration and intensity of the client's sleep issues
- ☐ I do not conduct intake interviews with insomnia clients

Q70

When I conduct an intake interview with any client, I suspect that insomnia could be an issue if the client describes symptoms related to which of the following experiences or disorders?

- ☐ Major depressive episodes
- ☐ Minor depressive episodes
- ☐ Generalized Anxiety Disorder
- ☐ Obsessive Compulsive Disorder
- ☐ All of the above
- ☐ I do not conduct intake interviews with my clients

Q71

When a client complains of sleep issues, I have them complete a psychometric sleep assessment (e.g., Insomnia Severity Index; Epworth Sleepiness Scale, DBAS-16)?

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always

Q72

When suspecting that a client may have insomnia, I recommend an overnight sleep study or ask if they have recently had one.

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always

Q73

When you suspect that a client has insomnia, do you treat them yourself or do you refer them to a sleep specialist?

- ☐ I have a specialty in treating sleep disorders, almost always treat my own clients and only refer for unique cases
- ☐ I treat most of my clients myself and only refer to a specialist if the treatment I give is ineffective
- ☐ I sometimes treat my clients with insomnia and sometimes refer them to a specialist
- ☐ I rarely treat insomnia cases and regularly refer them to a specialist
- ☐ I rarely treat insomnia cases and haven't referred clients to a sleep specialist
- ☐ None of the above options represent what I do in my practice

Q74

I use a sleep log to set goals and track progress with my insomnia clients:

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always
- ☐ I don't treat clients with insomnia

Q75

When treating my insomnia clients with CBT-I, I introduce stimulus control and sleep restriction techniques:

- ☐ During the first or second session
- ☐ In the middle sessions of therapy
- ☐ Only if other parts of the treatment are not working
- ☐ At the end of treatment to ensure that the therapeutic effect continues into the future
- ☐ I don't use CBT-I to treat clients with insomnia

Q76

When I use CBT-I to treat clients with insomnia, treatment typically involves how many sessions?

- ☐ 4-8
- ☐ 9-12
- ☐ 12-15
- ☐ More than 15
- ☐ I don't use CBT-I to treat clients with insomnia

Q77

When I recommend a standard wake up/go-to-sleep time, using bed only for sleeping, and getting up when you can't sleep, I am making:

- ☐ Cognitive recommendations
- ☐ Behavioral recommendations
- ☐ Emotion-focused recommendations
- ☐ somatic centering recommendations
- ☐ I don't treat clients with insomnia

Q78

With clients with an insomnia disorder, I make sleep hygiene recommendations to promote sleep quality, including restricting caffeine, alcohol, improving fitness level, and making sure that the bedroom is quiet and dark to promote sleep quality:

- ☐ Never
- ☐ Sometimes
- ☐ About half the time
- ☐ Most of the time
- ☐ Always

Q79

When I explain the role of thoughts in perpetuating insomnia, ask the client to keep a thought record, and challenge their irrational thoughts, I am focusing on techniques that are called:

- ☐ Behavioral techniques
- ☐ Sleep hygiene techniques
- ☐ Cognitive techniques
- ☐ Relaxation techniques
- ☐ I don't treat clients with insomnia



Q80

I use sleep education for clients with insomnia for which of the following reasons:

- ☐ To help clients overcome their misconceptions and anxiety-provoking beliefs about sleep so that they may develop realistic expectations about sleep
- ☐ To help them better understand how the human biological sleep system operates
- ☐ To help the client understand the rationale for behavioral changes used in the treatment
- ☐ To motivate the client to adhere to treatment recommendations
- ☐ All of the above
- ☐ I do not use sleep education with my clients

Q81

As a therapist, in a simple way, do you explain to your clients who suffer from insomnia how the core neurological processes related to sleep contribute to or are able to cause insomnia?

- ☐ I do not understand how these neurological processes work and therefore do not explain them to my patients
- ☐ I understand how these processes work, but do not think that it's important to explain these processes to my clients
- ☐ I understand how these processes work, but I'll only provide this education if I think it would be useful to my clients, given their circumstances
- ☐ I understand these processes, and regularly explain them to my clients as a foundation for cognitive and behavioral changes that might resolve their problems
- ☐ I do not treat clients with insomnia disorder

Q82

As a therapist, in a simple way, do you explain to your clients who suffer from both insomnia and anxiety, how the core neurological processes related to sleep contribute to or are able to cause anxiety and vice versa?

- ☐ I do not sufficiently understand how these neurological processes work and therefore do not explain them to my patients
- ☐ I understand how these processes work, but do not think that it's important to explain these processes to my clients
- ☐ I understand how these processes work, but I'll only provide this education if I think it would be useful to my clients, given their circumstances
- ☐ I understand these processes, and regularly explain them to my clients, as a foundation for cognitive and behavioral changes that might resolve their problems
- ☐ I do not treat clients with insomnia disorder

Q83

At the end of therapy with clients who have insomnia, do you provide education on relapse prevention?

- ☐ I don't know enough about this to adequately educate my clients
- ☐ I regularly educate my clients on insomnia relapse prevention
- ☐ I provide education, but could do a better job if I learned more about this
- ☐ I do not treat clients with insomnia disorder

Q84

When working with clients who have insomnia, do you explain the A-B-C model of CBT-I?

- ☐ I do not sufficiently understand this model to try to explain it to my patients
- ☐ I understand this model, but do not think that it's important to explain it to my clients
- ☐ I understand this model, but I'll only provide this education if I think it would be useful to my clients, given their circumstances
- ☐ I understand this model, and regularly explain it to my clients, as a foundation for cognitive changes that might resolve their problem
- ☐ I do not use CBT-I to treat clients with insomnia disorder

Q85

Are you able to explain to your clients who have insomnia the importance of developing and keeping a sleep log?

- ☐ I do not sufficiently understand this tool, so I don't use it or try to explain it to my patients
- ☐ I understand this tool but don't think that it's important to explain it to my clients
- ☐ I understand this tool, but don't always use it; I'll only provide this education if I think it would be useful to my clients
- ☐ I understand the tool, and regularly explain it to my clients, as a foundation for cognitive changes that might resolve their problem
- ☐ I do not treat clients with insomnia disorder

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▼ Therapist Survey Opinion Questions

Q86

**Part Five: Questions about the Future**

One of the purposes of this survey is to raise consciousness about insomnia and the bidirectional relationship between anxiety and insomnia, among therapists who treat anxiety. It is our hope that more and more, therapists will add the treatment of insomnia to their toolkit for helping clients.

This final set of questions evaluates the extent to which we have achieved this goal.

Q87

I would like to increase my knowledge and competence in treating my anxiety clients who experience comorbid insomnia.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q88

I would like to learn more about the relationship between insomnia and anxiety.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q89

I would like to learn how to treat insomnia clients utilizing CBT-I therapy.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q90

I think that I need to be more thorough in asking questions about insomnia when treating my clients with anxiety.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q91

I already know a lot about insomnia and treat it; but do not advertise that I have this area of competence in my marketing material (e.g., website, Psychology Today profile).

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree or disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q92

I already know a lot about insomnia and treat it; I do not advertise that I have this area of competence in my marketing material (e.g., website, Psychology Today), but will start advertising this now.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

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Drawing for Gift Card and Summary of Results

Q93

Would you like to enter a drawing for a \$25 gift card and receive a summary of our research findings?

- ☐ Yes  
☐ No

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End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

Q90

I think that I need to be more thorough in asking questions about insomnia when treating my clients with anxiety.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q91

I already know a lot about insomnia and treat it; but do not advertise that I have this area of competence in my marketing material (e.g., website, Psychology Today profile).

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree or disagree
- ☐ Somewhat agree
- ☐ Strongly agree

Q92

I already know a lot about insomnia and treat it; I do not advertise that I have this area of competence in my marketing material (e.g., website, Psychology Today), but will start advertising this now.

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Somewhat agree
- ☐ Strongly agree

[Import from library](#)[+ Add new question](#)

Drawing for Gift Card and Summary of Results

## APPENDIX B:

### TABLE OF CORRECT TEST ANSWERS WITH REFERENCES

#	Question	Correct Answer	Reference
	<b>KNOWLEDGE</b> Section Starts		
29	When a client complains about insomnia, all of the following are important reasons to screen for other sleep disorders, except . . .	The insomnia disorder classification includes other sleep disorders	<i>DSM-5</i> (2015)
30	To maintain optimal cognitive and behavioral functioning, how many hours of sleep per night do people need?	It depends on the age of the person	Eugene & Masiak (2018)
31	In addition to the amount (hours) of sleep a person gets each night, it's also critical that:	a. The person goes through four to six sleep cycles per night b. The person's sleep is not interrupted	Patel et al. (2020) Perlis et al. (2008) Edinger and Carney (2015)
32	Of the four stages of sleep, this sleep stage occurs for longer periods during the first part of the night and is essential for making you feel refreshed in the morning.	Stage N3, Non-REM Sleep	National Institute of Neurological Disorders and Stroke (2019). Perlis et al. (2008) Edinger and Carney (2015)
33	The APA, NIH State-of-the-Science Statement, and the American Academy of Sleep Medicine recommend the following evidence-based treatment as the "Standard Model" for front-line treatment of insomnia.	CBT-I	NIH Consensus and State-of-the Science Statements (2005) Boness et al. (2020) Society of Clinical Psychology, Division 12 (2021) Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
34	These brain waves are long and slow and are associated with the deepest levels of restorative and healing sleep.	Delta	Division of Sleep Medicine at Harvard Medical School (2020) Patel et al. (2020) National Institute of Neurological Disorders and Stroke (2019)
35	This chemical is produced during the day as we burn energy and	Adenosine	Walker (2017) Saper (2005)

#	Question	Correct Answer	Reference
	makes us feel increasingly drowsy as the day moves toward night.		
36	This neurological process, often called the "biological clock", is associated with putting us to sleep and waking us up.	Circadian rhythms	National Institute of Neurological Disorders and Stroke (2019). Perlis et al. (2008) Edinger and Carney (2015)
37	The neurological process associated with making us tired the longer we are awake is:	Homeostatic sleep drive	National Institute of Neurological Disorders and Stroke (2019). Perlis et al. (2008) Edinger and Carney (2015)
38	Approximately what percentage of the US population experiences acute insomnia each year?	Up to 25% of the adult population	Seow et al. (2018). University of Pennsylvania School of Medicine (2018). Edinger & Carney (2015).
39	The primary change in the insomnia classification from DSM-4 to DSM-5 is:	a. Insomnia is now distinguished from other sleep disorders b. Insomnia cannot now be attributable to the psychological effects of a substance c. Clinicians should now view insomnia less as a symptom of other mental illnesses and treat it as a primary disorder	Substance Abuse and Mental Health Services Administration (2016) DSM-5 (2015) Reynolds & O'Hara (2013)
40	According to DSM-5, a diagnosis of insomnia disorder is justified if all of the following are true, except:	The client has had an overnight sleep study	DSM-5 (2015) Runko (2020)
41	When coding insomnia, therapists are required to specify if:	No behavioral impairment is reported	DSM-5 (2015) Runko (2020)
42	To characterize the nature of insomnia over time, psychologists have developed a three-factor framework. The factors are:	Predisposing, Precipitating, Perpetuating	Perlis et al. (2008) Runko (2020)
43	What percentage of adult patients with mental disorders also experience insomnia?	Up to 80% Up to 50%	Smith et al. (2002) Insomnia, Sleep and Mental Health (2009) Papadimitriou, G.N. & Linkowski (2005) DSM-5 (2015)



#	Question	Correct Answer	Reference
44	Which statement best characterizes the relationship between anxiety and insomnia	The relationship is bidirectional; each can cause and exacerbate the other	Thielscha et al. (2015). Alvaro & Harris, (2013) Seow et al. (2018). DSM-5 (2015) Reynolds & O'Hara (2013)
45	Symptoms of insomnia are present in approximately what percentage of anxiety disorders?	Accepted two answers 51%-70%; 71%-90%	Khurshid (2018) Staner (2003)
46	Anxiety and insomnia are linked because:	a. The hormones that regulate sleep and waking are the same hormones that can cause anxiety b. Genetic influences on anxiety and insomnia overlap	Chang-Myungmet et al. (2019).
47	Sleep disorders have been associated with which of the following anxiety disorders?	All Anxiety Disorders	Edinger & Carney (2015) Staner, L. (2003)
48	A key common factor in causation of both insomnia and anxiety is:	A state of hyperarousal	Kalmbach et al. (2018) Bonnet & Arand (1997) Reimann et al. (2010)
49	In cases where anxiety and insomnia are comorbid, which statement is true?	In over 50% of the cases, insomnia either appeared before or at the same time as the anxiety appeared	Ohayon & Roth (2003) Staner (2003)
50	Which of the following disorders fall under the DSM-5 classification of Insomnia Disorder?	None of the above (Not Sleep Apnea, Restless Leg Syndrome, Narcolepsy, Sleepwalking)	DSM-5 (2015) Runko (2020)
51	Sleep Restriction is contraindicated for clients with this sleep disorder:	Sleep Apnea	Pigeon (2010) Runko (2020)
52	People with this sleep problem have an uncontrollable urge to move, which causes problems with falling asleep, staying asleep or unrefreshing sleep:	Restless Leg Syndrome	National Institute of Neurological Disorders and Stroke (2021) Runko (2020)
53	A Circadian Rhythm Disorder may cause problems:	a. Falling asleep due to a delayed sleep phase b. Waking up due to an advanced sleep phase	American Academy of Sleep Medicine (2021) Runko (2020)
54	CBT-I is an effective treatment for insomnia for all of the following reasons except:	It has an immediate short-term impact on insomnia	Edinger and Carney (2015) Perlis et al. (2008)
55	This approach to treating insomnia uses components such as psychology education in sleep health, behavioral interventions such as stimulus control, with a	CBT-I	Edinger and Carney (2015) Perlis et al. (2008)

#	Question	Correct Answer	Reference
	special emphasis on cognitive factors and processes.		
56	Which of the following client characteristics would rule out the use of CBT-I with the client?	The client is not an adult	McCrae & Lichstein (2001) Edinger and Carney (2015) Perlis et al. (2008) Runko (2020)
57	Stimulus control therapy could include all of the following instructions except:	After 45 minutes from the time you go to bed, if you are unable to fall asleep, get up and go into another room	Edinger and Carney (2015) Perlis et al. (2008) Runko (2020)
58	Titration is a component of the CBT-I treatment process that requires the therapist to:	Adjust the client's sleep goals, based on the client's performance during the previous week.	Perlis et al. (2008) Spielman et al. (2011) Runko (2020)
59	In the Cognitive Therapy Model, the therapist intervenes at which stage?	Belief--what the client thinks about the activator	Perlis et al. (2008) Edinger and Carney (2015)
60	This treatment for chronic insomnia, includes six treatment processes: acceptance, diffusion, content with the present moment, self as context, values, and committed action.	ACT	Salariet et al. (2020)
61	Recent research has shown that this treatment method can be as effective as CBT in treating physical and mental disorders such as chronic pain, anxiety, depression and insomnia:	ACT	Salariet et al. (2020) Riemann & Espie (2018)
62	Which of the following techniques should not be used when treating insomnia in anxious clients.	CBT-I in combination with over-the-counter sleep aids.	Matheson & Hainer (2017)
63	Which of the following statements about the use of medications to treat insomnia is FALSE?	Benzodiazepines are recommended for treating insomnia	Matheson & Hainer (2017)
64	Autogenic training, biofeedback, meditation, visualizations, progressive muscle tensing/releasing, and deep breathing practices are often used by therapists to help their clients with insomnia. Collectively these techniques are often called:	Relaxation Techniques	National Center for Biotechnical Information (2020)
	<b>KNOW-HOW</b> Section Starts		
66	In treating clients with anxiety, at the beginning of treatment, I conduct an insomnia-focused interview or ask the client to	Most of the time Always	Edinger & Carney (2015) Perlis et al. (2008)

#	Question	Correct Answer	Reference
	complete a sleep history questionnaire:		
67	My frontline treatment for clients with insomnia is:	Accepted answers based on efficacy studies): CBT-I, ACT, Relaxation Techniques, based on efficacy studies. This question was used to define subgroups.	Therapist's Choice
68	Please use the following frequency matrix to describe the topics you cover when conducting an insomnia-focused intake interview (or topics that are on the sleep questionnaire that you use). Skip this question if you do not conduct insomnia-focused interviews with your anxiety or insomnia clients.	Mean of 8 possible responses ranged between 4-5 (most of the time, always)	Edinger & Carney (2015) Perlis et. al (2008) Runko, V. (2020)
69	When conducting an intake interview with a client who complains about anxiety with sleep issues, I try to determine all of the following except:	Which type of medication would be best to treat both concerns (anxiety and insomnia)	Edinger & Carney (2015) Perlis et. al (2008)
70	When I conduct an intake interview with any client, I suspect that insomnia could be an issue if the client describes symptoms related to which of the following experiences or disorders?	All: Major depressive episodes Minor depressive episodes Generalized Anxiety Disorder Obsessive Compulsive Disorder	Edinger & Carney (2015) Perlis et. al (2008)
71	When a client complains of sleep issues, I have them complete a psychometric sleep assessment (e.g., Insomnia Severity Index; Epworth Sleepiness Scale, DBAS-16)?	Most of the time Always	Edinger & Carney (2015) Perlis et. al (2008)
72	When suspecting that a client may have insomnia, I recommend an overnight sleep study or ask if they have recently had one.	Most of the time Always	Edinger & Carney (2015) Perlis et. al (2008)
73	When you suspect that a client has insomnia, do you treat them yourself or do you refer them to a sleep specialist?	Most of the time Always	Edinger & Carney (2015) Perlis et. al (2008)
74	I use a sleep log to set goals and track progress with my insomnia clients	Most of the time Always	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
75	When treating my insomnia clients with CBT-I, I introduce stimulus control and sleep restriction techniques:	During the first or second session	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)

#	Question	Correct Answer	Reference
76	When I use CBT-I to treat clients with insomnia, treatment typically involves how many sessions?	4-8 9-12	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
77	When I recommend a standard wake-up time, using the bed only for sleeping, and getting up when you can't sleep, I am making:	Behavioral Recommendations	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
78	With clients with an insomnia disorder, I make sleep hygiene recommendations to promote sleep quality, including restricting caffeine, alcohol, improving fitness level, and making sure that the bedroom is quiet and dark to promote sleep quality:	Always	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
79	When I explain the role of thoughts in perpetuating insomnia, ask the client to keep a thought record, and challenge their irrational thoughts, I am focusing on techniques that are called:	Cognitive Techniques	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
80	I use sleep education for clients with insomnia for which of the following reasons:	All: a. To help clients overcome their misconceptions and anxiety-provoking beliefs about sleep so that they may develop realistic expectations about sleep b. To help them better understand how the human biological sleep system operates c. To help the client understand the rationale for behavioral changes used in the treatment d. To motivate the client to adhere to treatment recommendations	Perlis et al. (2008) Edinger and Carney (2015) Runko (2020)
81	As a therapist, in a simple way, do you explain to your clients who suffer from insomnia how the core neurological processes related to sleep contribute to or are able to cause insomnia?	I understand how these processes work, but I'll only provide this education if I think it would be useful to my clients, given their circumstances I understand these processes, and regularly explain them to my clients as a foundation for cognitive and behavioral changes that might resolve their problems	Perlis et al. (2008) Edinger and Carney (2015)
82	As a therapist, in a simple way, do you explain to your clients who suffer from both insomnia and	I understand these processes, and regularly explain them to my clients, as a foundation for	Perlis et al. (2008) Edinger and Carney (2015)

#	Question	Correct Answer	Reference
	anxiety, how the core neurological processes related to sleep contribute to or are able to cause anxiety and vice versa?	cognitive and behavioral changes that might resolve their problems I understand how these processes work, but I'll only provide this education if I think it would be useful to my clients, given their circumstances	Runko (2020)
83	At the end of therapy with clients who have insomnia, do you provide education on relapse prevention?	I regularly educate my clients on insomnia relapse prevention	Edinger & Carney (2015) Perlis et al. (2008)
84	When working with clients who have insomnia, do you explain the A-B-C model of CBT-I?	I understand this model, and regularly explain it to my clients, as a foundation for cognitive changes that might resolve their problem	Edinger & Carney (2015) Perlis et al. (2008)
85	Are you able to explain to your clients who have insomnia the importance of developing and keeping a sleep log?	I understand the tool, and regularly explain it to my clients, as a foundation for cognitive changes that might resolve their problem	Perlis et al. (2008) Edinger & Carney (2015) Runko (2020)

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APPENDIX C:  
COMPETENCY TAXONOMY

Knowledge and Know-How					
Know (Subject Matter Competence)					
Sleep	Insomnia	Bidirectional Causation	Other Sleep Disorders	CBT-I	Other Treatments
<ul style="list-style-type: none"> <li>• optimal duration</li> <li>• four sleep stages</li> <li>• key neurological processes</li> </ul>	<ul style="list-style-type: none"> <li>• prevalence</li> <li>• diagnostic criteria</li> <li>• coding requirements</li> <li>• three-factor framework</li> </ul>	<ul style="list-style-type: none"> <li>• prevalence of co-morbid A &amp; I</li> <li>• common hormonal/genetic antecedents</li> <li>• links to all anxiety disorders</li> <li>• hyperarousal common</li> </ul>	<ul style="list-style-type: none"> <li>• other sleep disorders are distinguished from insomnia:</li> <li>• distinguish Sleep Apnea, Restless Leg Syndrome, Circadian Rhythm Disorders</li> </ul>	<ul style="list-style-type: none"> <li>▪ CBT-I is the "Standard Model" for treating Insomnia;</li> <li>• Case for its effectiveness</li> <li>• Definitions, CBT-I components;</li> </ul>	<ul style="list-style-type: none"> <li>• ACT definition and efficacy</li> <li>• Over the counter meds and other meds not recommended</li> <li>• techniques of relaxation therapy</li> </ul>
(30) Optimal duration of sleep depends on age	(38) Prevalence: 33% of adults report insomnia symptoms	(43) Prevalence of comorbid insomnia and mental disorders up to 80% of clients	(29) Certain treatments for insomnia are contraindicated for other sleep disorders	(33) CBT-I is the "standard model" for treating insomnia	(60) Identify the treatment components of ACT
(31) Quality sleep depends on un-interrupted sleep through all four sleep stages	(39) DSM-5 now identifies insomnia as a primary mental disorder	(44) The causative bidirectional relationship between A & I	(50) DSM-5 distinguishes Insomnia from other sleep disorders	(54) Reasons why CBT is an effective treatment for insomnia	(61) Efficacy of ACT equal to CBT-I

Knowledge and Know-How					
Know (Subject Matter Competence)					
(32) Restorative and healing sleep occurs during Stage 3 Non-REM Sleep	(40) DSM-5 diagnostic criteria. .	(45) Insomnia comorbidity with anxiety up to 70%	(51) Sleep restriction, is contraindicated with Sleep Apnea	(55) Components of CBT-I	(62) Over-the-counter meds not recommended for treating insomnia
(34) Gamma Waves are associated with Stage 3, Non-REM Sleep	(41) Therapists must code if insomnia is comorbid with other mental disorders	(46) Common hormones and genetics link insomnia and anxiety	(52) Definition, Restless leg syndrome = uncontrollable urge to move	(56) Client characteristics that rule out CBT-I	(63) Benzodiazepines not recommended for treating insomnia, due to negative side effects
(35) Adenosine is the chemical produced during the day that makes us tired as the day moves into night	(42) The three-factor model: <ul style="list-style-type: none"> <li>• predisposing,</li> <li>• precipitating,</li> <li>• perpetuating</li> </ul>	(47) Insomnia linked to all anxiety disorders	(53) How Circadian Rhythms Disorder impacts falling asleep and waking?	(57) Definition of Stimulus Control Therapy	(64) Identify the techniques of relaxation therapy
(36) “Circadian rhythms” is the neurological process that puts us to sleep and wake us up		(48) hyperarousal is common in both anxiety and insomnia		(58) Definition of titration	
(37) Homeostatic Sleep Drive is the neurological process that makes us tired the longer we are awake		(49) Occurrence of insomnia before or simultaneously with anxiety in over 50% of cases		(59) Cognitive Therapy intervenes at the level of belief--what the client thinks about the activator	

Competency Taxonomy		
Know-How (Clinical Practice Competence)		
Intake Interview	CBT-I	Ability to Educate Clients
<ul style="list-style-type: none"> <li>• frequency conducting insomnia-focused interview</li> <li>• topics covered</li> <li>• objectives of interview</li> <li>• client complaints or other disorder that suggest insomnia interview (other disorders)</li> <li>• psychometric sleep assessments as a part of interview</li> <li>• sleep studies recommended as a part of initial fact gathering</li> </ul>	<ul style="list-style-type: none"> <li>• use CBT-I as frontline treatment for insomnia</li> <li>• treat insomnia or refer to sleep specialist</li> <li>• use of sleep log when treating insomnia</li> <li>• timing to introduce specific treatments or techniques,</li> <li>• number of sessions to complete therapy</li> <li>• ability to describe, prescribe and monitor sleep hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Explain the purpose of sleep education</li> <li>• Explain basic science of sleep and insomnia</li> <li>• Explain the</li> <li>• Bidirectional relationship between A &amp; I</li> <li>• Explain the keys to relapse prevention</li> <li>• Explain the</li> <li>• A-B-C model of</li> <li>• CBT-I</li> </ul>
(66) Frequency of conducting an insomnia intake interview with anxious clients who complain about sleep	(67) Recognition of CBT-I as the frontline treatment for insomnia	(80) Reasons to use sleep education with insomnia clients
(68) Topics covered in insomnia intake interview	(73) Treat or refer to a sleep specialist	(8) Ability to explain basic core neurological processes related to sleep and insomnia to clients
(69) Key objectives of intake interview	(74) Know how to design and use a sleep log with clients	(82) Ability to explain the bidirectional relationship of A & I
(70) Symptoms of other mental disorders that signal to inquire about insomnia	(75) Know when hen to introduce sleep restriction or stimulus control techniques?	(83) Ability to provide education on relapse prevention
(71) Use psychometric sleep assessments	(76) How many sessions?	(84) Ability to explain the A-B-C model of CBT-I
(72) Recommend an overnight sleep study to rule out or include other sleep disorders	(77) Distinguishing behavioral from cognitive recommendations	(85) Ability to explain the importance of keeping a sleep log
	(78) Frequency of utilizing sleep hygiene recommendations	
	(79) Able to identify cognitive treatment techniques	