

TREATING POST-TRAUMA NIGHTMARES

A COGNITIVE
BEHAVIORAL APPROACH



JOANNE L. DAVIS

Treating Post-Trauma Nightmares

A Cognitive Behavioral Approach

JOANNE L. DAVIS, PhD

Editor

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Preface

Researchers are increasingly pointing to sleep disturbance following a traumatic event as a key factor in maintaining psychological and physical problems over time. Psychological and physical effects of trauma may be particularly vulnerable to chronicity with the loss of sleep's restorative functions. This suggests the essential importance of identifying interventions that restore quality sleep. While several interventions are found to be efficacious in the treatment of posttraumatic stress disorder (PTSD), both sleep disturbances and nightmares may be resistant to such treatments that broadly target PTSD (Davis, DeArellano, Falsetti, & Resnick, 2003; Forbes, Creamer, & Biddle, 2001; Johnson et al., 1996; Scurfield, Kenderdine, & Pollard, 1990; Zayfert & DeViva, 2004). Indeed, several authors have suggested the need to target sleep disturbances and nightmares directly (e.g., Halliday, 1987). Kramer and Kinney (2003) found that Vietnam veterans with disturbed dreaming showed hyperresponse during sleep and suggest that "desensitization therapies may have their success limited if sleep responsivity is not altered" (p. 686). For some individuals, therapies that do not specifically target sleep and nightmares may not affect this aspect of trauma response.

The past decade has seen a significant increase in efforts to develop and evaluate treatments that specifically target sleep disturbance and nightmares in trauma-exposed persons. As part of this effort, this book describes a treatment that brings together literature, theory, and techniques from behavioral sleep medicine and psychological perspectives. This interdisciplinary treatment, Exposure, Relaxation, and Rescripting Therapy (ERRT), specifically targets chronic nightmares experienced by trauma-exposed persons. Several articles have been published describing ERRT (Davis & Wright, 2006) and presenting results of the research on ERRT (e.g., Davis & Wright, 2005; 2007). Information about treatment outcome for related treatments and the development of ERRT is addressed in chapter 5.

The purpose of this book is to present therapists and scientists with information that formed the basis for the development of ERRT and to describe the treatment, step by step, for those interested in the utilization and further evaluation of ERRT. The book begins with an overview of traumatic events and their impact on clients. A brief summary of information on night terrors and nontrauma nightmares is presented, including difficulties related to defining nightmares. The nature and characteristics of post-trauma nightmares are presented. Theoretical formulations of post-trauma nightmares by leading sleep and trauma experts are outlined, and a new three-factor model is proposed. Important assessment considerations are outlined, including guidance in the assessment of traumatic events, differential diagnosis of sleep events, and a review of sleep and nightmare assessment tools.

Treatments for nightmares are then reviewed and ERRT is introduced. Information is provided on the development of the treatment, including the influence of the literature from the fields of behavioral sleep medicine, trauma, and anxiety disorders. The treatment is then presented session by session. After describing the treatment in full, a special section on treatment considerations addresses potential difficulties that therapists or clients may encounter, and suggestions for handling these situations are provided. Finally, the efficacy of ERRT is reviewed, and potential critical components and mechanisms of change are discussed.

The full patient manual is presented in appendix A. The manual includes all components of the treatment explained in the book, written in layman's language. It also includes space for clients to write notes, as well as some of the assessment forms used by our research group. The accompanying patient manual may be copied for each client. In our own center, we put the manual in three-ring binders so we can add a chapter to the binder at each session. This is done so that clients do not get ahead in treatment and are able to proceed along with the therapist. Many of the homework assignments are included at the end of the chapters and can be easily removed and submitted. We generally keep the homework assignments for data analysis purposes, while the clients keep the remainder of the manual. This allows clients to maintain the information presented in the treatment in the event they want to look back and reread sections.

Case examples are provided throughout the book to illustrate various aspects of the treatment and the struggles and triumphs of the clients we have treated with ERRT. We are very appreciative of all who participated in the research trials that informed the development of the treatment.

To protect the identity of these individuals, the case examples presented in this book represent amalgamations of the many participants who were part of the clinical research that serves as the basis for this work. Often, stories of several clients are combined into one case example. Names, situations, and ages have been changed, and any resemblance to one individual person is unintended.

Given the burgeoning empirical and theoretical literature on trauma-related nightmares and sleep disturbances, the information provided must be viewed as preliminary. The proposed theory underlying the development and maintenance of trauma-related nightmares, as well as the potential critical components and mechanisms of change, are based on data where available. Thus, this work does not represent an endpoint but rather another step in the ongoing effort to better understand the nature and function of post-trauma nightmares and to assist those who suffer from them. We hope that it also serves as a point of departure for new research efforts.

The components of ERRT are drawn from the best practices across the trauma, sleep, and anxiety fields. Although the treatment is presented as a manualized approach, therapists should consider flexible administration of the treatment components depending on the presenting complaints of their clients. Considering that many individuals reporting nightmares also report other difficulties, a thorough case formulation is necessary to determine whether the treatment should be utilized as a stand-alone intervention, a concurrent intervention, or an integration with ongoing therapy. Finally, while this treatment was developed for and assessed with individuals exposed to traumatic events, similar treatments have been used successfully with idiopathic (non-trauma-related) nightmares.

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1

Overview of Trauma and Post-Trauma Nightmares

I'm lying in bed—something has awakened me, but I'm not quite sure what it is. Then I hear it again. Someone is in my house, walking through the living room. It is pitch black, and I hear whispering. It sounds like two men. I feel very scared—what if they go upstairs? I hear the bottom stair creak, and I feel paralyzed. They are going upstairs to get my kids—I have to go stop them, but I can't move. I break out in a sweat, and my heart pounds. I know that I have to get to my kids before they do. I realize that someone is coming down the hall toward my room. And I hear someone else moving upstairs in the kids' room. One is almost at my door. I slide out of bed onto the floor. I can't breathe, I feel like they must be able to hear my heart pounding—they know I'm in here. I can't move, and I am trembling so hard I can't stand up. I'm trying to move, trying to get to the door. I hear my youngest mumbling as if he's being awakened from sleep. I don't know who they are, but I know they are going to take my kids and kill me. I have to get up there, but I still can't move. I see my kids' faces in my mind . . . so little. I have to help them. I hear a hand on the bedroom door. One is coming in. One is going to kill me. I am frantic now as the door is opening. I see a hand and a foot, and then I hear my youngest scream. . . .

People have been fascinated by dreams—why we have them, what they mean—since ancient times. While we still do not understand the exact nature and function of dreams, numerous theories abound. The

ancient Greeks believed that dreams were messages from the gods; Aristotle was among the first to propose that dreams were products of the mind (Gallop, 1990); and Sigmund Freud argued that dreams were disguised expressions of unconscious impulses and protectors of sleep (1900/1955). Current theories include those that focus on the neurological correlates of dreaming, such as Hobson and McCarley's (1977) activation synthesis theory, which states that dreams are epiphenomena of sleep, story lines created by the brain to make sense of signals from the brain stem and limbic system. Similarly, Seligman and Yellen (1987) describe dreams as series of primarily unrelated visual and emotional episodes and cognitive attempts to make sense of those, and Stickgold (2005) suggests that dreams are the conscious experience of memory reprocessing during sleep. Focused more on the function of the dream mentation, Revonsuo (2000) argues that dreams are defense mechanisms evolutionarily designed to help prepare the dreamer to perceive and avoid threatening events. Several researchers suggest dreams function to diffuse strong emotion (Cartwright & Lloyd, 1994; Kramer, 1991), while others suggest that they provide a means of establishing networks and recontextualizing emotions (Hartmann, 1998b).

As confusing as the current state of knowledge on dreams is, even less understood is the nightmare. Theorists and researchers have generally attempted to understand nightmares utilizing existing theories of dreams. Indeed, some researchers have considered nightmares failed dreams, as they generally awaken people, disrupting sleep processes (Kramer, 1991), or as "the dream gone 'wild' or 'bad'" (Erman, 1987, p. 668). Hartmann (1998a), however, suggests that research should actually flow the other way, starting with understanding the nightmare and extending to dreams. He asserts that the precipitator of nightmares, particularly post-trauma nightmares, is obvious. Examining the manner in which our minds process a known entity (a traumatic or stressful event) through nightmares may shed light onto the murkier waters of dreams, for which possible influences are less certain.

An extreme type of nightmare—which may actually be a phenomenon unto itself or the extreme end of a continuum—is the nightmare that follows the experience of a traumatic event. Post-trauma nightmares, often reflecting the traumatic event to varying degrees of veracity, have received increased clinical, theoretical, and scientific interest in the past 2 decades. Initiated or exacerbated by a traumatic event, these nighttime horrors may have a haunting impact on the dreamer, affecting not only

the quality and quantity of sleep the individual experiences, but also the cognitive, emotional, behavioral, and physiological functioning of the individual during the day. This book explores the nature of the post-trauma nightmare, bringing together literature across various specialties in an attempt to grasp the phenomenon of the trauma-related nightmare; and describes a step-by-step approach to mitigating the frequency and severity of nightmares in a cognitive behavioral treatment. We start with a brief examination of traumatic events themselves and their impact on the functioning of adult survivors.

THE PREVALENCE AND NATURE OF TRAUMA

The third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association [APA], 1980) defines traumas as those stressful events that are outside the range of usual human experience. Subsequent research suggested this was not the case, however. By experiencing such events as being a victim of terrorist activity, surviving a severe car accident, hearing of the unexpected loss of a loved one, or experiencing molestation or physical abuse, far too many people will struggle through horrific events. The specific definition of a traumatic event has changed over time, and the current version of the DSM (APA, 2000) provides the following criteria for classifying an experience as a traumatic event: “(1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others; (2) the person’s response involved intense fear, helplessness, or horror. NOTE: In children, this may be expressed instead by disorganized or agitated behavior” (p. 467). This definition provides for a wide array of events to be considered traumatic (indeed, some would argue too wide of an array) and better reflects and informs the body of empirical data suggesting that approximately 60% to 70% of individuals will experience a traumatic event in their lifetimes.

Norris (1992) surveyed 1,000 adults in four southeastern cities about their experience with 10 types of potentially traumatic events. Of the respondents, 69% reported that they experienced a traumatic event in their lifetimes, and 21% experienced a trauma in the previous year. Interviews conducted with a national representative sample of 5,877 adults found that 61% of men and 51% of women reported experiencing a traumatic

event in their lifetimes (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), while 89% of adults in an urban area reported lifetime exposure to a traumatic event (Breslau et al., 1998). The most common events reported across epidemiological studies include witnessing someone being badly injured or killed, being involved in a fire or natural disaster, and being involved in a life-threatening accident (Solomon & Davidson, 1997). Prevalence rates for various events differ significantly by gender. For example, the most frequent types of events reported by women included natural disasters (15.2%), witnessed violence (14.5%), accidents (13.8%), great shock (12.4%), and sexual assault (12.3%). The most frequent types reported by men included witnessed violence (35.6%), accidents (25%), threats with a weapon (19%), natural disaster (18.9%), and great shock (11.4%; Kessler et al., 1995). Numerous investigations demonstrate that most trauma-exposed people report experiencing multiple traumatic events (e.g., Breslau, 1998).

Large scale studies of children also find that a significant proportion report experiencing traumatic events. In interviews with a nationally representative sample of 4,008 adolescents ages 12 to 17, nearly half of the sample reported experiencing some form of violent victimization, including sexual assault/rape (8.1%), physical assault (17.4%), physically abusive behavior (9.4%), and witnessed violence (39.4%; Kilpatrick, Saunders, & Smith, 2002). Other national studies reported similar findings (Finkelhor, Ormrod, Turner, & Hamby, 2005).

IMPACT OF TRAUMA

Although a response of fear, helplessness, or horror is required for an event to be considered a trauma (APA, 2000), the impact of experiencing a traumatic event may range from short-term shock and distress to a chronic struggle with emotional, psychological, physiological, and behavioral difficulties. While many assume that traumatic events typically result in long-term problems, research indicates that people are generally quite resilient in the face of potentially traumatic experiences. As Bonanno (2005) states, “resilience (not recovery) is the most common response to potential trauma” (p. 135). Increasingly, people who study trauma conceptualize resilience as a normal response to trauma, not an anomaly. Bonanno suggests that 10% to 30% of trauma-exposed individuals will experience chronic problems, 5% to 10% will have a delayed

response (initial experience of moderate symptoms for some period of time that begin to increase over time), 15% to 35% will recover (moderate initial symptoms that steadily decrease over time), and 35% to 55% will demonstrate resilience (may experience mild to moderate initial symptoms that fairly quickly dissipate and do not interfere substantially with normal functioning). Indeed, even following the devastating September 2001 terrorist attack in the United States, researchers found that 65% of Manhattan residents met criteria for resilience (defined as experiencing zero to one posttraumatic stress disorder [PTSD] symptom in the 6 months following the attack); over 50% of individuals who had witnessed the attack or were in the World Trade Center buildings when the attack occurred and 33% of those injured in the attack met criteria for resilience (Bonanno, Galea, Bucciarelli, & Vlahov, 2006).

Although most people will not experience clinically significant long-term problems following traumatic events, a considerable number will. Exploring the type, nature, and predictors of negative outcome from trauma exposure has constituted the bulk of trauma studies over the past 3 decades. Numerous psychological disorders, including depression, substance abuse and dependence, other anxiety disorders, and sleep disorders, are associated with experiencing a trauma (Breslau, 1998; Breslau et al., 2004; Kessler et al., 1995; Neria et al., 2007). Among the most widely studied areas of difficulty following a traumatic event are acute stress disorder (ASD) and PTSD. These two disorders will be addressed further due to their association with nightmares.

ACUTE STRESS DISORDER

Symptoms that arise within a month of a traumatic event may fall under the category of ASD. ASD was added to the *DSM* in 1994 (APA, 1994) to describe symptoms observed in trauma survivors in the first month following the trauma. To meet criteria for ASD, a person must experience a traumatic event, experience three dissociative symptoms, one reexperiencing symptom (including dreams of the event), marked avoidance, and marked hyperarousal for 2 days to 4 weeks following the traumatic event. ASD has been the subject of considerable debate since its inception, most notably regarding its emphasis on dissociative symptoms and its ability, relative to other symptom combinations, to predict the development of PTSD (see Bryant, 2000; Bryant & Harvey, 1997).

POSTTRAUMATIC STRESS DISORDER

Derek

Derek was the youngest of four children. His mother committed suicide when he was 7, after suffering severe physical and psychological trauma at the hands of Derek's father for 20 years. While she was alive, Derek's father would physically abuse the children on occasion, though most of the abuse was directed toward Derek's mother. After her death, the children became the prime targets of the father's aggression, and Derek and his siblings experienced years of severe physical and psychological abuse. Derek entered therapy in his early 20s as a college junior. He suffered from severe nightmares several times a week. He also reported occasional flashbacks to abusive situations, particularly when in the presence of strong authority figures. He was unable to maintain relationships due to feeling that he could not "love like other people can." He reported significant problems with anger and faced losing his scholarship, as he was failing several classes due to sleep deprivation and an inability to concentrate on his studies.

Studied and conceptualized under a number of different terms throughout history—including "shell shock," "war neuroses," and "rape trauma syndrome"—common problems reported by individuals following a traumatic event are codified in the third edition of the *DSM* (APA, 1980) as PTSD. After several revisions, the most recent edition of the *DSM* (APA, 2000) considers PTSD to be comprised of three primary categories of symptoms. The first category includes various ways in which someone may reexperience the traumatic event, such as having nightmares about the event, experiencing intrusive thoughts or memories of the event, behaving or feeling as if the event is happening again, experiencing significant distress when exposed to stimuli related to the traumatic event, and having physiological reactions when exposed to stimuli related to the traumatic event. The second category includes both emotional numbing and avoidance criteria, such as avoiding thoughts and feelings about the event; avoiding people, places, and situations that remind the individual of the event; being unable to recall certain parts of the event; decreased interest and participation in activities; feeling detached from others; having a restricted range of emotions; and having a sense of foreshortened future. The third category includes symptoms of arousal, such as problems initiating or maintaining sleep, feeling irritable or having angry outbursts, having trouble

concentrating, being hypervigilant, and exhibiting an exaggerated startle response.

Prevalence of PTSD

Prevalence rates of PTSD vary considerably, in part due to the various populations sampled and the differing methods of assessing PTSD and trauma exposure. Overall, population prevalence estimates of past-year PTSD range from 2.3% to 4.2%, and estimates of lifetime PTSD range from 7.8% to 18.3% (Breslau, Davis, Andreski, & Peterson, 1991; Breslau et al., 1998; Kessler et al., 1995; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Breslau et al. (1998) found the risk for lifetime PTSD in trauma-exposed populations to be approximately 9%, and Kessler and colleagues (1995) found lifetime PTSD rates for trauma-exposed individuals to be 8% for men and 20% for women. Results of epidemiological surveys in postconflict areas report higher rates of PTSD (15.8% to 37.4%; de Jong et al., 2001).

Risk Factors for Chronic Problems

As reported above, while many individuals will experience a potentially traumatic event, only a minority will suffer long-term problems. Research studies have identified a number of risk factors that may indicate the potential for heightened negative responses to trauma, including degree of exposure (magnitude or severity of an event, proximity to the event, degree of loss; e.g., Breslau, 1998), female gender (e.g., Breslau et al., 1991; Norris, 1992; Tolin & Foa, 2006), younger age (Norris, 1992), a non-Caucasian ethnicity (Kulka et al., 1990; Norris, 1992), history of personal or familial psychopathology (including neuroticism, major depression, and anxiety disorders) (e.g., Breslau et al., 1991; de Jong et al., 2001; Kessler et al., 1999; Koren, Arnon, & Klein, 1999), negative reactions of others to the victim, avoidance coping (Ullman et al., 2007), previous history of trauma or adversity (e.g., Breslau et al., 1991; Davidson et al., 1991; de Jong et al., 2001), higher initial PTSD symptoms (Koren et al., 1999), and peritraumatic reactions (e.g., Lawyer et al., 2006). The type of traumatic event experienced is also a significant factor. Breslau and colleagues (1998) found that, overall, assaultive violence results in the

highest risk of PTSD (20.9%), compared to other injury or shocking experience (6.1%), learning of a trauma occurring to someone else (2.2%), and the sudden unexpected death of a loved one (14.3%). Of the different types of assaultive violence, rape is associated with the greatest risk for developing PTSD (49%), followed by severe physical assault (31.9%) and other sexual assault (23.7%; Breslau et al., 1998; see also Kessler et al., 1995; Norris, 1992).

Although men are more likely to experience traumatic events, women typically report higher rates of PTSD (Breslau et al., 1991; Norris, 1992; Tolin & Foa, 2006). For example, a national study found that 10% of women and 5% of men from the general population met *DSM-III-R* criteria for PTSD (Kessler et al., 1995). Breslau and colleagues (1998) found that 18.3% of women and 10.2% of men met *DSM-IV* criteria for PTSD. In their review, Tolin and Foa (2006) found that women reported greater rates of PTSD for accidents, nonsexual assaults, combat, war or terrorism, disaster or fire, witnessing death or injury, and illness or unspecified injury. When gender differences for PTSD were examined within types of trauma, no differences were found for adult sexual assault. Overall, no gender differences were found for victims of child sexual abuse, although the authors noted some studies found greater PTSD rates for women. Finally, women reported greater rates of PTSD for traumatic events most frequently experienced by men.

THEORIES OF PTSD DEVELOPMENT

Numerous therapists and researchers have attempted to explain the nature and course of typical reactions to traumatic events. These theories draw on research and literature from psychological and biological realms, with varying degrees of supporting evidence. Among the most influential theories to date are those based on the work of behaviorists, cognitive behaviorists, and social-cognitive theorists. Mowrer's (1947) two-factor theory and Lang's (1968) multisystem theory of emotion have been utilized to understand the nature of response to trauma (e.g., Foa & Kozak, 1986; Kilpatrick, Veronen & Resick, 1982; Kilpatrick, Veronen, & Best, 1985). Specifically, the first part of Mowrer's theory suggests that salient stimuli or cues (conditioned stimuli) present during the traumatic event are associated with dangerous stimuli (unconditioned stimuli) and result in the conditioned response of fear and other negative affect through classical conditioning. For example, during combat, the sound of gunshots,

shrapnel wounds, and seeing friends killed are unconditioned stimuli that initially elicit feelings of fear and terror. The reaction of fear is considered an automatic reaction to these experiences and is not learned. At the same time, other stimuli that are inherently not dangerous or threatening but are present in the environment during combat experiences (e.g., people, places, time of day, odors, tastes, sounds, and so forth) also become able to elicit the fear response. Therefore, these are conditioned stimuli, and their ability to elicit the fear response may generalize to additional, similar stimuli over time. For example, a soldier who experienced an intense fear response to the sound of gun fire during combat might respond with fear and anxiety to similar sounds (e.g., fireworks) even long after the combat experience is over. Likewise, this response may generalize to other loud, unexpected noises (e.g., door slamming).

The second part of Mowrer's (1947; 1960) theory incorporates the role of operational conditioning in the maintenance of fear and anxious response over time. In order to dampen the negative affect associated with the traumatic event and the related conditioned stimuli, individuals may begin avoiding places, people, or situations that remind them of the trauma and elicit the fear response. Thus, a veteran may not walk through heavily forested areas, watch war movies, or go to fireworks displays; a victim of domestic violence may not become involved in intimate relationships; a motor vehicle accident victim may refuse to drive again or refuse to drive near the particular place at which the accident occurred. A sense of relief and reduction of fear and anxiety often follows the process of escaping a feared situation or avoiding reminders of a trauma. This relief subsequently negatively reinforces avoidance behaviors, does not allow for corrective emotional experiences to occur, and maintains the posttrauma response over time (Foa & Kozak, 1986). The avoidance and numbing responses may also be used to counter the ongoing hyperarousal symptoms (Litz & Keane, 1989).

An information processing approach builds on the work of Mowrer (1947) and Lang (1968). Foa and Kozak (1986) and Foa and Rothbaum (1998) describe a fear structure, a network of associations in the brain that develops following a trauma and includes information about the feared event (and stimuli associated with it), the individual's responses to the event (including behavioral, verbal, and physiological), and the meaning of the event and responses to the event. The information encoded in the fear structure works to aid in the survival of the individual by serving as an alarm system when potential danger exists. The individual typically responds to the activation of the network through escape and avoidance.

For example, Vietnam veterans may experience distress when walking through wooded areas that remind them of Vietnam and subsequently avoid such areas. Unfortunately, as described above, stimuli are encoded in this fear structure that were associated with the event but are not inherently dangerous, including stimuli previously considered safe. The activation of the fear network in response to the myriad emotional, behavioral, physiological, and cognitive stimuli results in many false alarms. Further, if responses to this activation include only escape and avoidance, no corrective information is available or attended to in order to modify the structure, causing problems to continue.

Another information processing approach highlights the impact of trauma exposure on individuals' schemata. Schemata are defined as ways of thinking about one's self, others, and the world (Janoff-Bulman, 1989; McCann, Sakheim, & Abrahamson, 1988; Resick & Schnicke, 1993; Roth & Newman, 1991). Schemata influence the way people think and feel, as well as how they respond to stimuli in their environment. Janoff-Bulman and Frieze (1983) note three assumptions that are affected by experiencing a traumatic event: "1) the belief in personal invulnerability; 2) the perception of the world as meaningful and comprehensible; 3) the view of ourselves in a positive light" (p. 3). Similarly, McCann and colleagues (1988) identify five schemata that are vulnerable to distortion by traumatic events, including safety, trust, intimacy, power, and esteem. Resick and Schnicke (1993) purport that responses to trauma exposure are related to difficulties integrating trauma experiences into existing schemata. Individuals confronted with schema-incongruent events—those that do not fit with previous beliefs—may be overcome by the experience and its accompanying emotions (Resick & Schnicke, 1993), especially if schemata are particularly rigid (Feeny & Foa, 2006). Information processing theory holds that individuals must either alter the information to fit the schema (assimilate) or alter the schema to fit the information (accommodate). For example, if a child's parental schema suggests that parents should love and protect their children, and the child is physically abused by a parent, the child may assimilate, or alter, the information by convincing him- or herself that he or she is to blame for the abuse. Indeed, children will often staunchly defend abusive parents and deny the abuse occurred. If the child were to accommodate the information, he or she may change the parental schema to suggest that sometimes parents may hurt their children. A third possible response is over-accommodation. This process involves an extreme distortion of the belief system. For example, instead of changing the schema to suggest

that sometimes parents may hurt their children, the child may believe that all adults want to hurt children, are dangerous, and can never be trusted. Over-accommodation may result in dichotomized thought processes (black and white thinking) and restrict the cognitive flexibility with which individuals interpret and evaluate future information (Feeny & Foa, 2006).

The emotional, cognitive, and behavioral impact of the traumatic event may vary considerably, depending on the information processing method employed. The resultant schema will continue to affect the manner in which the survivor responds to the world. Indeed, research has identified the importance of cognitive appraisals, based on schema, in the role of the development and maintenance of posttrauma problems. For example, studies find differences by trauma status on risk recognition (Wilson, Calhoun, & Bernat, 1999) and appraisal of risky behaviors (Smith, Davis, & Fricker-Elhai, 2004) that may enhance an individual's chance of revictimization and promote risk-taking behaviors (e.g., risky sexual behavior, substance use). These may serve as a means of escaping negative affect, maintaining the chronicity of posttrauma problems.

OTHER POSTTRAUMA PROBLEMS

Of course, not everyone who experiences a trauma will develop PTSD—many have symptoms of PTSD without meeting the full criteria. And the impact of trauma may extend well beyond PTSD to a plethora of other concerns in mental, physical, social, interpersonal, and occupational areas of functioning. Indeed, it is rare that PTSD symptoms are the only complaints reported by clients. Further, much evidence exists to suggest that experiencing multiple traumas has a cumulative negative impact in terms of mental and physical health (Anda et al., 2006). According to the *DSM*, individuals with PTSD may also report difficulties in self-harming behaviors, feelings of guilt and shame, dissociative symptoms, somatic complaints, interpersonal relationship dysfunction, and problems modulating affect, to name a few. PTSD is associated with numerous disorders, including higher rates of panic disorder, agoraphobia, obsessive-compulsive disorder, social phobia, specific phobia, major depressive disorder, somatization disorder, and substance-related disorders (APA, 1994). The National Comorbidity Study (Kessler et al., 1995) found that 88% of men and 79% of women had a comorbid disorder in

addition to lifetime PTSD. The most common comorbid disorder was major depression.

The temporal relationship of onset among these disorders is somewhat unclear, however. That is, traumatic events may increase the risk for multiple types of mental health problems, developing PTSD may create a vulnerability to other forms of psychological difficulties, and the presence of other psychopathology may create a vulnerability to PTSD or trauma. The National Comorbidity Study (Kessler et al., 1995) sheds some light on this issue. Specifically, the study found that in more cases, PTSD was the original diagnosis for individuals with comorbid affective and substance use disorders overall, and with conduct disorder in women. In another study, Brady, Dansky, Sonne, and Saladin (1998) examined the order of onset of traumatic events, PTSD, and cocaine dependence in a treatment-seeking sample. They found a fairly even number of individuals who developed cocaine dependence prior to PTSD and those who developed PTSD prior to cocaine dependence, although the developmental pathways appeared to differ by gender. Specifically, the primary PTSD group included more women and was more likely to experience a sexual assault, while the primary cocaine group was more likely to witness a trauma or experience a physical assault. In fact, the investigators noted that most of the traumatic events in the primary cocaine group were related to obtaining and using the drug, while the primary PTSD group's traumatic events were mostly assaults in childhood. More information is needed to better understand the temporal relationships of these conditions, as the findings may have significant implications for treatment and preventative efforts.

The impact of trauma reaches beyond the realm of mental health. Although a full review of the impact of trauma on physical health is beyond the purview of this book, research has increasingly demonstrated that trauma exacts a terrible toll on physical health (for reviews, see Friedman, 1999; Gill & Page, 2006; Resnick, Acierno, & Kilpatrick, 1997; Schnurr & Green, 2003, 2004; Yehuda & McFarlane, 1997). While this may occur in the absence of PTSD, the effect appears worse in its presence. For example, Boscarino (2004) found that chronic PTSD was associated with numerous physical health conditions, including rheumatoid arthritis, psoriasis, diabetes, and thyroid disease, in a sample of Vietnam veterans. Other health and physiological problems associated with PTSD include cardiovascular disease (e.g., Boscarino & Chang, 1999; Felitti et al., 1998), acute physical injury (e.g., Goodman, Koss, & Russo, 1993), sexually transmitted diseases (e.g., Irwin et al., 1995), irritable bowel syndrome

(e.g., Irwin et al., 1996), chronic pain (e.g., Walker & Stenchever, 1993), impairment of the hypothalamic-pituitary-adrenocortical axis (e.g., Pfeffer, Altemus, Heo, & Jiang, 2007), and reduced hippocampal volume (e.g., Bremner, 2006; Hedges & Woon, 2007). An exciting new area of research is demonstrating that some physiological impairment (e.g., levels of some stress hormones) may be alleviated following the treatment of trauma-related psychological symptoms (e.g., Lindauer et al., 2005; Olf, de Vries, Guzelcan, Assies, & Gersons, 2007).

Part of the impact of trauma on physical health may result from the increased involvement in risk behaviors (e.g., smoking, poor eating, use of illicit drugs, self-harming behaviors) in individuals exposed to trauma. A copious body of research demonstrates the link between trauma and health-risk behaviors (e.g., Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997), although this relationship is not a simple one. Indeed, some research has found that while victimization may increase the risk of engaging in health-risk behaviors, the involvement in health-risk behaviors may also increase the risk of victimization (e.g., Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997). Regardless of the temporal relationship of trauma exposure and risk involvement, engaging in risk-related behaviors serves as a risk factor for numerous acute and chronic health conditions.

An additional consideration in understanding the impact of trauma on physical health is its association with health-care utilization. Studies find that, in contrast to nonexposed persons, trauma-exposed individuals report greater utilization of medical health-care services and perceive their health status as poorer (e.g., Golding, Stein, Siegel, Burnam, & Sorenson, 1988; Resnick et al., 1997; Stapleton, Asmundson, Woods, Taylor, & Stein, 2006). Mixed findings are reported on comparative use of mental health-care services (e.g., Golding et al., 1988; Kimerling & Calhoun, 1994). In a review of the health impact of interpersonal violence, Resnick and colleagues (1997) suggest that inappropriate health-care utilization may stem in part from the mischaracterization of mental health problems as physical health problems.

SLEEP DISTURBANCES

Sleep disturbances are not uncommon in our society. Sleep disturbances may include disturbances in the quality, timing, or quantity of sleep, or behaviors or physiological events during sleep. They may be primary

disorders or be secondary to another mental or physical condition or disorder (APA, 2000). Primary sleep disorders are classified as either dyssomnias (i.e., insomnia, hypersomnia, narcolepsy, breathing-related sleep disorder, circadian rhythm sleep disorder, and dyssomnia not otherwise specified [NOS]) or parasomnias (i.e., nightmare disorder, sleep terror disorder, sleepwalking, and parasomnia NOS; APA, 2000). The most recent edition of the *International Classification of Sleep Disorders* (American Sleep Disorders Association, 2005) recognizes eight categories of sleep disorders, including insomnia, sleep-related breathing disorders, hypersomnias of central origin, circadian rhythm sleep disorders, parasomnias, sleep-related movement disorders, isolated symptoms/apparently normal variants/unresolved issues, and other sleep disorders.

Community surveys of the general population find that 35% to 52% report sleep disturbances (Ford & Kamerow, 1989), and up to one third meet criteria for a sleep disorder, although many are not diagnosed and do not seek treatment (Doghranji, 2004; Hearne, 1991). Women tend to report higher rates of sleep disturbance than men (e.g., Coren, 1994; Hublin, Kaprio, Partinen, & Koskenvuo, 1999; Klink & Quan, 1987). Rates reported in the literature vary considerably, in part due to the nature of the questions asked, the sleep disturbances queried, the population sampled, and the time frame utilized (Ford & Kamerow, 1989). The National Institutes of Health (NIH) estimate that up to 70 million Americans may suffer from sleep loss and sleep disorders, with resulting health-care costs up to \$15 billion annually. Further costs result from loss of productivity due to sleep problems (NIH, 2004). Sleep disturbances are commonly associated with a variety of psychiatric and medical conditions (e.g., Ford & Kamerow, 1989; Spoomaker & van den Bout, 2005).

While sleep disturbances are relatively common in the general population, numerous studies find even higher rates of sleep disturbances reported immediately following and long after a traumatic event (Ross, Ball, Sullivan, & Caroff, 1989). In fact, sleep disturbances are the putative “hallmark” of PTSD (Ross et al., 1989) and delayed PTSD (Kramer, 1979), although they may occur with or without PTSD diagnosis (Helzer, Robins, & McEvoy, 1987). Many consider nightmares and sleep problems to be key factors in the development and maintenance of posttrauma problems (e.g., Kramer, Schoen, & Kinney, 1987; Ross et al., 1989). Currently, sleep disturbances are included in two of the three symptom clusters of PTSD. Specifically, “recurrent distressing dreams of the event” is included in the reexperiencing cluster, and “difficulty falling or staying asleep” is included in the heightened arousal cluster (APA, 2000, p. 468).

Normal Sleep

Before reviewing the literature on sleep problems, nonpathological sleep is briefly outlined. Sleep is divided into two primary types: rapid eye movement (REM) and nonrapid eye movement (NREM). REM sleep is often referred to as paradoxical sleep, as electroencephalogram (EEG) recordings during REM resemble those during wake time. Also unique to REM are muscular atonia, eye movement, and muscle twitches. NREM sleep is further divided into four stages. Throughout the night, people typically progress from Stage 1 to Stage 4 NREM sleep, back through stages 3 and 2 and then to REM sleep. The initial REM latency (time until the first REM period starts) is approximately 70 to 110 minutes. The cycle through NREM and REM sleep happens four to six times a night, with REM sleep periods becoming longer as the night progresses and slow-wave sleep becoming shorter. People spend approximately 20% to 25% of sleep in REM sleep. Dreaming occurs in both REM and NREM sleep, although the most vivid dreams are thought to occur in REM (Ross et al., 1989).

Subjective Studies

North and colleagues (1999) surveyed survivors 6 months after the 1995 Oklahoma City bombing and found that nearly 70% of survivors reported insomnia and just over 50% reported nightmares. Roszell, McFall, and Malas (1991) found that sleep disturbances, separate from nightmares, were the most common symptom reported in a group of 116 treatment-seeking Vietnam veterans (91% of veterans with current PTSD). Similarly, Neylan and colleagues (1998) found that 44% of veterans reported difficulty falling asleep and 91% endorsed difficulty staying asleep. In a survey of disaster survivors, Green (1993) also found that “trouble sleeping” was the most commonly endorsed symptom. Overall, survivors of traumatic events, such as combat, natural disasters, and physical and sexual abuse, are most likely to report sleep disturbances (Woodward, 1995). A medical record review of inpatient children revealed that sexually abused children had worse sleep difficulties than physically abused or nonabused children, according to parental reports. However, no differences were noted while the children were in the hospital (Sadeh, Hayden, McGuire, Sachs, & Civita, 1994). In a later study of this group of hospitalized children, researchers using actigraphy, a small sensor used to assess sleep, found that physical abuse was associated with worse sleep problems

than sexual abuse and no abuse (Sadeh et al., 1995). The number of traumatic events also appears to impact sleep. In a study of adult members of an HMO, Anda and colleagues (2006) found that the percentage of participants reporting sleep disturbances increased with the number of adverse childhood events reported, from 36% of people reporting no adverse events to 56.1% of people reporting four or more events.

As with many other mental and physical health problems, sleep disturbances appear to be worse in the presence of PTSD. Data from the National Comorbidity Study reveal that 80% of individuals with chronic PTSD also reported insomnia (Leskin, Woodward, Young, & Sheikh, 2002). Ohayon and Shapiro (2000) examined the prevalence of sleep disturbances, PTSD, and psychiatric disorders in a general population sample of 1,832 participants. They found that 70% of those with PTSD reported sleep disturbances, and 76% met criteria for another psychiatric diagnosis. Individuals with PTSD were more likely to report 9 of 10 types of sleep disturbance, including nightmares occurring at least once per month (18.8% of PTSD; 4.2% of non-PTSD). Further, while insomnia and excessive daytime somnolence were more likely to occur prior to the trauma in individuals with PTSD who experienced these problems (in 61% and 71% of participants respectively), parasomnia symptoms, including nightmares, were more likely to occur following a trauma (60%).

Pretrauma Sleep Problems Predict Increased Difficulties

Most studies of sleep difficulties and trauma do not consider sleep problems that may have been present prior to the traumatic event. Mellman, David, Kulick-Bell, Hebding, and Nolan (1995) retrospectively assessed sleep problems before and after 1992's Hurricane Andrew. These authors found that reports of "disturbing dreams" and sleep disturbances in individuals were associated with greater psychiatric problems following the hurricane. They suggest that pretrauma sleep and nightmare problems may be predisposing factors for increased difficulties posttrauma. This vulnerability may be mediated through neurophysiological impairment, a tendency toward heightened arousal, negative emotionality, or difficulties regulating emotion. Individuals who were suffering from sleep problems pretrauma also may be experiencing associated difficulties, including sleep deprivation or other life stressors, that may impede their ability to cope with the traumatic event.

Immediate Posttrauma Sleep Problems Predict Increased Difficulties

Although sleep problems and nightmares will dissipate over time for the majority of trauma-exposed persons, sleep disturbances may become a chronic condition for some, usually in the presence of PTSD. In their five-stage model of the phases of PTSD decompensation, Wang, Wilson, and Mason (1996) suggest that sleep problems typically precede significant decline in other areas, exacerbate symptomatology, and may actually propel the decompensation process. Several investigators have examined sleep disturbances immediately after the event and generally find that they predict future problems. For example, Koren, Arnon, Lavie, and Klein (2002) followed 102 motor accident victims and 19 control participants from 1 week to 12 months after the accident to prospectively assess possible predictors of PTSD. At 1-month posttrauma, significant differences were found in participants, according to their PTSD status; those meeting criteria for PTSD reported higher insomnia and daytime somnolence than those not meeting criteria for PTSD. These differences were maintained at the 12-month follow-up.

SLEEP DISORDERS

The experience of trauma and a diagnosis of PTSD are associated with several sleep disorders (see Table 1.1), including sleep disordered breathing (SDB), periodic limb movement (PLM), sleep onset and sleep maintenance insomnia, sleep terrors, sleep paralysis, and REM sleep behavior disorder. Not only are trauma exposure and various sleep disorders highly associated, their association is related to worse functioning. For example, Krakow and colleagues (2006) compared symptoms of patients of a sleep clinic and crime victims, both meeting criteria for SDB. Subjective measures indicated that the crime victim group reported worse functioning in several areas of sleep. Objective measures found crime victims had more incidents of upper airway resistance syndrome, but less obstructive sleep apnea. Both groups also reported high rates of daytime somnolence, frequent awakenings to urinate, and headaches and dry mouth in the morning. Among trauma victims, those with SDB reported worse sleep quality, PTSD symptoms, depression, and suicidality than those without SDB (e.g., Krakow, Artar, et al., 2000; Krakow, Germain, et al., 2000).

Table 1.1

SLEEP DISORDERS

SLEEP DISORDER	CHARACTERISTICS*	REFERENCES FOR STUDIES THAT INDICATE ASSOCIATION WITH TRAUMA
Sleep disordered breathing	Cessation of or reduction in airflow and subsequent reductions in oxygen saturation; frequent arousals during the night to restore airflow; daytime fatigue and numerous physical and mental difficulties	Krakow, Melendrez, Johnston, Warner, et al., 2002; Krakow, Melendrez, et al., 2001
Periodic limb movement	Stereotyped and repetitive involuntary movements, typically of the legs and feet, which cause brief arousals	Brown & Boudewyns, 1996; Krakow, Germain, et al., 2000; Mellman, Kulick-Bell, et al., 1995; Ross et al., 1994a
Insomnia	Difficulty initiating or maintaining sleep; having nonrestorative sleep	Krakow, Melendrez, Pedersen et al., 2001; Krakow, Melendrez, et al., 2001; Mellman, Kulick-Bell, et al., 1995; Neylan et al., 1998; Ohayon & Shapiro, 2000
Sleep terrors	Abrupt awakening from sleep, usually with a vocalization; difficulty awakening; little recall of event upon waking	Mellman, Kulick-Bell, et al., 1995
Sleep paralysis	Inability to engage in voluntary movement while falling asleep or waking up	Mellman, Kulick-Bell, et al., 1995; Ohayon & Shapiro, 2000
REM sleep behavior disorder	Violent motor activity during REM sleep	Mellman, Kulick-Bell, et al., 1995

* Characteristics taken from APA (2000), Mehra & Strohl (2006), Khassawneh (2006)

The nature of the relationships among sleep disorders and psychological disorders requires more investigation (see Harvey, Jones, & Schmidt, 2003). However, evidence suggests that some conditions, including insomnia, SDB, and PTSD, may have related neurophysiological impairment via the hypothalamic-pituitary adrenal axis and the amygdala-hippocampal complex (Krakow, Melendrez, Johnston, Warner, et al., 2002; Krakow et al., 2006; Maher, Rego, & Asnis, 2006). Krakow, Melendrez, Johnston, Warner et al. (2002) also suggest that residual sleep problems following PTSD treatment may be related to SDB. Recently, intriguing studies assessed the impact on nightmares of treating sleep-disordered breathing and overall found improvements in nightmares, sleep, PTSD symptoms, and indices of daytime functioning (Krakow, Lowry, et al., 2000). However, a case report by Youakim, Doghramji, and Schutte (1998) in which a Vietnam veteran was successfully treated with continuous positive airway pressure (CPAP) reveals that the nature of the sleep problems and nightmares changed, although they did not resolve. Further, in instances in which the CPAP machine dislodged, the nightmares came back as before. This finding suggests that such patients may still benefit from direct treatment of the nightmares. It remains to be empirically determined, however, whether nightmares treated directly would return with the recurrence of SDB or whether improvements would be noted in SDB upon treatment of PTSD.

Objective Studies

While there appears to be a plethora of evidence demonstrating a link between trauma exposure and self-reported sleep disturbances, objective assessments (e.g., polysomnography and actigraphy) find equivocal results, with some studies finding objective indicators of disturbed sleep (e.g., Calhoun et al., 2007; Germain & Nielsen, 2003a; Mellman, Kumar, Kulick-Bell, Kumar, & Nolan, 1995), while others did not find any indicators or found only minor problems (e.g., Breslau et al., 2004; Klein, Koren, Arnon, & Lavie, 2002). Further, results of objective assessments frequently do not match self-reported sleep problems (e.g., Breslau et al., 2004), a finding demonstrated with other populations as well (e.g., Carskadon et al., 1976). Overall, Krakow, Melendrez, and colleagues (2001) suggest that objective studies find four primary patterns of sleep: stereotypic insomnia, REM deficient sleep, REM surplus sleep, and normal sleep. The authors note, however, that objective studies

typically do not take SDB into account. It is unclear if SDB influences the identified patterns above or represents a separate category. Further, while not all areas of positive findings reported above are found consistently across studies, a body of evidence is accumulating that suggests that disrupted REM sleep may play an important role in chronic PTSD (Mellman, 2006; although see Wittmann, Schredl, & Kramer, 2007). The most recent meta-analysis of 20 studies using polysomnography found that individuals with PTSD spend more time in Stage 1 sleep, less time in slow-wave sleep, and show evidence of more REM density (a measure of rapid eye movement activity during REM sleep) than individuals without PTSD (Kobayashi, Boarts, & Delahanty, 2007). Further, the authors found that gender and comorbidity moderated results. Specifically, studies that included more men and fewer individuals with depression found greater sleep problems in individuals with PTSD. Harvey, Jones, and Schmidt (2003) conclude that those studies that do find differences in objective assessment of sleep attribute the problems to heightened arousal. These authors also suggest that individuals may misperceive the amount of sleep they are getting, similar to insomniacs. A comprehensive description of the results and potential explanations for findings are beyond the scope of this work. However, a number of excellent reviews addressing these are available (e.g., Harvey, et al., 2003; Kobayashi et al., 2007; Lavie, 2001; Maher et al., 2006; Mellman, 2000; Pillar, Malhotra, & Lavie, 2000).

TRAUMA ASSOCIATED WITH BETTER SLEEP?

Further complicating our understanding of sleep and trauma are the perplexing findings suggesting that although trauma-exposed persons report worse sleep, they may actually achieve deeper sleep than non-trauma-exposed persons (although see Klein et al., 2002). For example, Lavie, Katz, Pillar, and Zinger (1998) found evidence of higher awaking thresholds in PTSD patients compared to non-PTSD controls, but they failed to find any other statistically significant differences in sleep measures. The higher thresholds were positively related to anxiety and depression scores. The authors (see also Dagan, Lavie, & Bleich, 1991; Kramer & Kinney, 2003) note the discrepancy between significant complaints of disturbed sleep and higher awaking thresholds and speculate that this higher threshold may be a compensatory measure that develops over time to counter the hyperaroused state during the day and to obstruct

intrusion of trauma stimuli during sleep. The authors suggest that this may also help explain some differences in objective findings, in that sleep proximate to the traumatic event may be characterized more by frequent arousals due to nightmares and night terrors. As the condition continues, the sleep dynamics change to include attempts to deepen sleep, to increase the arousal threshold, and to lengthen time before REM and shorten time in REM, all to allow the individual some respite from memories and nightmares of the traumatic event. Numerous studies also report lower dream recall in individuals with chronic PTSD (e.g., Dagan et al., 1991; Kaminer & Lavie, 1991; see chapter 2), with similar notions that this dynamic develops over time to block nightmares or the recall of nightmares and to enhance sleep. Lower dream recall may also be related to alexithymia, which has been associated with PTSD (Nielsen, 2005).

NIGHTMARES

Although nightmares are typically conceptualized as a ubiquitous post-trauma phenomenon that is often part of PTSD, they may also occur in its absence and often occur in the absence of a traumatic event (although most prevalence studies do not distinguish idiopathic and post-trauma nightmares). Whether or not nightmares occur in the presence of another disorder, they are associated with distress. The presence of nightmares and sleep disturbances in the immediate aftermath of a traumatic event are associated with current and ensuing symptom severity (e.g., Mellman, David, Bustamante, Torres, & Fins, 2001). Specifically, studies find that the presence and severity of nightmares after a trauma are associated with overall levels of reported distress and overall severity of reexperiencing symptoms (e.g., Erman, 1987; Esposito, Benitez, Barza, & Mellman, 1999; Schreuder, Kleijn, & Rooijmans, 2000). Distress tends to be more severe in the presence of PTSD (e.g., Davis, Byrd, Rhudy, & Wright, 2007) and when the content of the nightmare is reflective of the traumatic event itself (e.g., Davis et al., 2007; Mellman et al., 2001).

All post-trauma nightmares are not the same for everyone, and they may not be the same for any individual over time. Nightmares may initially be just like the traumatic event, almost a reenactment of the trauma. Over time, however, the nightmares may begin to include other aspects of life and more recent stressors. They may include people who were not involved in the original trauma. For example, a combat veteran suffered

for many years from nightmares about feeling in constant danger and being killed in combat. He reported that after having children, his nightmares evolved to include his children—specifically, that they were also in danger. Nightmares also may change to reflect potent, unresolved issues related to trauma (e.g., powerlessness, esteem, safety, intimacy, trust).

While nightmares and sleep problems are pervasive for some individuals, lasting years and even decades, their manifestation may change over time. Sleep problems may look quite different immediately following the trauma versus those 10 years out from the trauma. Chronicity, or time since the trauma occurred, is not often taken into consideration in studies examining sleep problems, potentially accounting for some of the differences reported above. Indeed, given that not all individuals continue to suffer sleep problems long term, one might expect differences early on in the manifestation of sleep disorders between those who will continue to suffer and those who recover. For example, Tracy was a 20-year-old college student when she was raped by a friend after a party on campus. She suffered from severe nightmares and sleep problems for months after the rape. Her nightmares occurred early in the sleep cycle, leaving her unable to return to sleep. She began drinking alcohol more frequently; when she presented for treatment, she was consuming two bottles of wine per night. She also reported significant depression, daytime panic attacks, and recent onset of severe panic symptoms upon waking from nightmares. Her alcohol use allowed her to fall asleep easier, but she was still frequently awakened from nightmares later in the sleep cycle.

The impact of nightmares extends far beyond the reach of the bedroom. It is well known that sleep disturbances may have long-term negative effects on mental and physical health. The impact of reduced quality and quantity of sleep is pervasive, and problems with sleep and nightmares are increasingly conceptualized as key components of the development and maintenance of posttrauma problems. Given nightmares' theorized pernicious effects, efforts to develop interventions designed to decrease nightmares and enhance sleep quality may be of the utmost importance.

The remainder of this book is dedicated to understanding the nature and characteristics of post-trauma nightmares, including their development, assessment, and treatment. The study of nightmares and, specifically, post-trauma nightmares has made considerable strides over the past 30 years. In many ways, however, the work in this area has just begun. Numerous methodological and definitional issues remain.

There is no clear unifying theoretical understanding of how idiopathic or post-trauma nightmares develop or are maintained over time. It remains unclear why some people experience transient nightmare problems and others suffer for decades. One of the most exciting areas of inquiry relates to the treatment of chronic nightmares. Although much is left to understand about nightmares' nature, characteristics, and developmental progress, treatments have been developed that significantly reduce the frequency and intensity of nightmares and related distress. One such treatment—Exposure, Relaxation, and Rescripting Therapy (ERRT)—is outlined and its efficacy reviewed. First, however, we take a closer look at the nature and characteristics of nightmares.