

Role of behavioral techniques in patients with insomnia and headache

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Abstract

Behavioral treatments focus exclusively on modifying environmental contexts/contingencies and patterns of behavior that presumably exacerbate symptoms and functional impairment. Cognitive-behavioral treatments (CBTs), by comparison, include a focus on behavior modification and an emphasis on modifying maladaptive patterns of thinking. There are central elements of CBT and self-management, which cut across treatment for specific psychiatric disorders and headache disorders. In many cases, insomnia occurs when there is another problem, such as stress, pain, or a medical condition. In these cases, treatment of the underlying problem may help to improve sleep. In other cases, the causative factor of insomnia is unclear or the insomnia does not improve even after the treatment of the co-existing problem. Hence, the insomnia itself requires to be particularly treated.

Keywords: behavior therapy, cognitive behavior therapy, headache, insomnia, self-management.

Introduction

Insomnia is defined as difficulty falling asleep, difficulty staying asleep, or waking up early in the morning and not being able to return to sleep. In common, sleep in people with insomnia is less or poor in spite of having a satisfactory chance to sleep. The poor sleep gives rise to troubled functioning during the daytime. The number of hours slept does not define insomnia as the quantity of sleep required differs from one person to another.

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Types of Sleep Disorders

According to ICD-10 (WHO, 2001), sleep disorders has been classified as follows:

Nonorganic sleep disorders

This group of disorders includes:

a. **Dyssomnias:** principally psychogenic disorders in which the prime disturbance is in the amount, quality, or timing of sleep owing to emotional causes, i.e., insomnia, hypersomnia, and disorder of sleep-wake schedule; and

b. **Parasomnias:** atypical episodic events happening during sleep; in childhood, these are connected chiefly to the child's development, while in adulthood, they are mainly psychogenic, i.e., sleepwalking, sleep terrors, and nightmares.

Nonorganic insomnia

Insomnia is a complaint of substandard quantity and/or quality of sleep, which perseveres for a significant period of time. People with insomnia define themselves as feeling tensed, anxious, worried, or depressed at sleep time and as if their thoughts are racing. They repeatedly ponder over getting adequate sleep, personal difficulties, health status, and even death. Often, they attempt to cope with their tension by taking medication or alcohol. During morning hours, they recurrently report experiencing tiredness both physically and mentally; throughout the daytime, they typically feel depressed, worried, anxious, irritable, and preoccupied with themselves.

Nonorganic hypersomnia

Hypersomnia condition refers to either extreme daytime sleepiness or sleep attacks (not accounted for by an insufficient quantity of sleep) or extended changeover to the fully aroused state upon awakening.

Epidemiology

The determination of occurrence of insomnia differs according to the definition applied. It is considered to affect about one-third of the general population in the United Kingdom.

- Prevalence is between 1.5 and 2 times higher in women than in men.
- Insomnia is a long-term disorder and many people have had insomnia for more than 2 years.
- Approximately half of all diagnosed insomnia is related to a psychiatric disorder.
- The incidence increases in men and women as they get older.

Headache

“A headache is defined as ‘a pain or ache in the head’ ... It accompanies many diseases and conditions, including emotional distress.” (Baillière’s Nurses’ Dictionary definition for headache, 2007).

The World Health Organization (WHO) notifies that a headache within the last year must have been experienced by about 47% of the world’s adult population. In addition to being symptoms of other

conditions, headache disorders can result in to the development of other illnesses. People with severe headaches experience depression three times more common than healthy people.

Types of Headache

According to International Classification of Headache Disorders (3rd ed., 2013), headache has been classified as follows:

Part one: the primary headaches

1. Migraine: “Migraine is a common disabling primary headache disorder. Epidemiological studies have documented its high prevalence and high socioeconomic and personal impacts. In the Global Burden of Disease Survey 2010, it was ranked as the third most prevalent disorder and seventh-highest specific cause of disability worldwide.”

Migraine has two major subtypes: (1) headache with particular features and related symptoms refer to migraine without aura; and (2) the temporary focal neurological symptoms that generally precede or sometimes accompany the headache refer to migraine with aura.

2. Tension-type headache: “When a headache with tension-type characteristics occurs for the first time in close temporal relation to another disorder that is a known cause of headache, it is coded according to the causative disorder as a secondary headache.” It is very common, with lifetime prevalence in the general population ranging between 30% and 78% in different studies, and it has a very high socioeconomic impact. The exact mechanisms of tension-type headache are not known.

3. Trigeminal autonomic cephalalgias: The trigeminal autonomic cephalalgias share the clinical features of headache, which is generally lateralized, and of frequently noticeable cranial parasympathetic autonomic features, which are again lateralized and ipsilateral to the headache. In experimental and human functional imaging, activation of a normal human trigeminal parasympathetic reflex by these syndromes is reported, with secondary clinical symptoms of cranial sympathetic dysfunction.

4. Cluster headache: “It is a neurological disorder characterized by recurrent, severe headaches on one side of the head, typically around the eye.” Eye watering, nasal congestion, and swelling around the eye, characteristically limited to the side of the head with the pain, are some of the associated autonomic symptoms.

5. Other primary headache disorders:

Sinus headache: The characteristic features are deep and continuous pain in the cheekbones, forehead, or bridge of the nose, which generally strengthens with abrupt head movement or straining. It is typically associated with other sinus symptoms, such as nasal discharge, feeling of fullness in the ears, fever, and facial swelling.

Acute headaches: Being more observed in children, they result unexpectedly and for the first time, with symptoms that subside after a reasonably short period of time. These headaches generally warrant a visit to the pediatrician's office and/or the emergency room. A respiratory or sinus infection is the most common reason for such headaches in children and adolescents if neurological signs or symptoms are absent.

Hormone headaches: Headaches in women are often associated with changing hormone levels that occur during menstruation, pregnancy, and menopause. Chemically induced hormone changes, such as those associated with birth control pills, also trigger headaches in some women.

Chronic progressive headaches: It is also called known as traction or inflammatory headaches, which get worse and occur more frequently over time. Being the least common type of headache, it accounts for <5% of all headaches in adults and <2% of all headaches in kids. An illness or disorder of the brain or skull can lead to chronic progressive headaches.

Part two: the secondary headaches

6. Headache attributed to trauma or injury to the head and/or neck;
7. Headache attributed to cranial or cervical vascular disorder;
8. Headache attributed to nonvascular intracranial disorder;
9. Headache attributed to a substance or its withdrawal;
10. Headache attributed to infection;
11. Headache attributed to disorder of homeostasis;
12. Headache or facial pain attributed to disorder of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cervical structure;

13. Headache attributed to psychiatric disorder.

Part three: painful cranial neuropathies, other facial pains, and other headaches

14. Painful cranial neuropathies and other facial pains;
15. Other headache disorders.

According to WHO, headaches are self-treated by almost 50% of the affected people, which infers means that majority of the people with headache disorders do not obtain the optimal treatment. The WHO has initiated the Global Campaign against Headache that targets to enhance awareness of headache disorders and progresses access and standards of care globally.

Epidemiology

Approximately 64-77% of people experience a headache at some scenario of their lives and, on average, 46-53% of people report headaches during every year. However, majority of these headaches are not hazardous. Only approximately 1-5% of people with headaches who visit the emergency room reveal a serious primary cause.

Primary headaches constitute more than 90% of headaches, with majority being tension headaches. Most people with tension headaches experience "episodic" tension headaches that come and go. Only 3.3% of adults experience chronic tension headaches, which can last for >15 days in a month.

Approximately 12-18% of people in the world have migraines, with women experiencing migraines more than men. In Europe and North America, migraine accounts for 5-9% in men and 12-25% in women.

Being very unusual, cluster headaches disturb only 1-3 per thousand people globally, with three times more in men than women.

Insomnia and Headache

For centuries, both sleep and headache have aroused inquisitiveness within the human brain, exhibiting a complex relationship between them. In 1873, Lieving first noted that headaches were related to sleep, and in 1970, Dexter and Weitzman demonstrated the association between headache and sleep stages. Headache may be essentially associated with sleep and can cause sleep disruption or a development of a sleep disorder

such as obstructive sleep apnea. Systemic dysfunction such as anemia and hypoxemia may lead to headache and sleep disorders. People can experience headaches during sleep, after sleep, and linked to different sleep stages. Both absence of sleep and extreme sleep are regarded to be triggers for migraine. Insomnia is more common among chronic headache patients.

Behavior Therapy

Behaviour therapies are situationally specific, depending on the desired behavior change. Behavior therapists use a variety of techniques, such as systematic desensitization, which can reduce fears and anxieties. Occasionally, behavior therapists treat with the real scenario in which an event has happened; at remaining times, they ask the client to envision a scenario.

Goals of Behavior Therapy

The stress on the goal specificity is a unique feature of behavior therapy. Early in their work with patients, behavior therapists focus on changing target behaviors—that is, behaviors that can be defined undoubtedly and precisely. They recognize the actions or scenarios that clarify why a person perseveres in a specific behavior. In general, clients experience numerous problems, and both the therapist and client resolve on which problem requires therapy first. Behavior therapists work with a variety of goals and target behaviors (Miltenberger, 2008).

A functional analysis is carried out by the behavior therapists regularly. They estimate (assess) the behavior and the backgrounds and significances linked to it (assessment). They recognize the factors (antecedents) related to the behavior or the motives when the patient uses the behavior. The therapist makes suggestions about what factors can aid in governing the behavior. Data from the functional analysis aids in the selection of the behavioral interventions (Miltenberger, 2008).

Description of Behavioral Insomnia Therapies

In the 1950s, official usages of behavioral interventions to treat insomnia were first demonstrated. However, till 1970s, these therapies did not achieve much admiration. Several behavioral insomnia treatments have been

established, verified, and, at times, changed during the past 30 years. The nature and specific focus of these treatments differ in the nature and particular target—some comprise fairly formalized “exercises” intended basically to treat sleep-related performance anxiety and extreme bedtime awakening, whereas others comprise fairly well-ordered behavioral prescriptions intended to eradicate sleep-disruptive habits.

Behavioral Therapy for Insomnia

Frequently, behavioral therapy is suggested as the first-line treatment for insomnia. Initially, only behavioral variations may be suggested, or medication may be prescribed in addition to behavioral changes. Behavioral treatment comprises sleep hygiene education, relaxation, biofeedback, stimulus control, sleep restriction, cognitive therapy, cognitive behavioral therapy (CBT), phototherapy, and / or chronotherapy.

Sleep Hygiene Education

Sleep hygiene educates proper sleeping habits, which comprise the following:

- Sleep only to the required amount and get up.
- Sustain an unvarying sleep schedule (the same bedtime and wake time daily).
- Do not sleep forcefully.
- Evade caffeinated drinks after lunch.
- Evade alcohol close to bedtime.
- Do not smoke (principally in the evening).
- Do not sleep hungry.
- Regulate the bedroom setting (such as light, noise, and temperature) to provide comfortability before you lie down.
- Sought out the anxieties or fears before bedtime. Note the works that to be done for the next day so that stress is lowered at night.
- Exercise habitually, at least 4 or more hours before bedtime.
- Evade extended use of phones or reading devices (e-books) that give off light before bed, which can make it tougher to fall asleep.

Relaxation Therapies

Since the late 1950s, a set of official relaxation therapies comprising progressive muscle relaxation training, autogenic training, imagery training, biofeedback, and hypnosis have been used in treating insomnia. The common factor of these methods is their focus on causes such as performance anxiety and bedtime arousal, which frequently propagate sleep difficulties. Irrespective of the particular relaxation strategy used, treatment involves educating the person with insomnia a formal exercise or set of exercises intended to lower anxiety and arousal at bedtime so that sleep initiation is enabled. Characteristically, many weekly or biweekly therapy sessions are necessary to educate relaxation skills that the patient is stimulated to practice at home to achieve mastery and facility with self-relaxation.

Biofeedback

Biofeedback therapy employs sensors positioned on your skin to monitor muscle tension or brain rhythms. A display visualization of your tension level or activity enables you to device your level of tension and cultivate strategies to lower this tension. As an example, you may slow your breathing, progressively relax muscles, or practice deep breathing to reduce tension.

Stimulus Control

In 1972, Richard Bootzin first reported this strategy based on the postulation that both the timing (bedtime) and setting (bed/bedroom) linked to recurrent ineffective sleep attempts, over time, become conditioned signals that perpetuate insomnia. Hence, the target of this therapy is to reassociate the bed and bedroom with effective sleep attempts. Stimulus control attains this target by restraining sleep-incompatible events in the bed and bedroom and by implementing a constant sleep-wake schedule.

From a practical viewpoint, this treatment has appeal as it is easily understood and usually can be administered in one visit. However, follow-up visits are usually conducted to ensure compliance and achieve optimal success.

Sleep Restriction

Sleep restriction therapy (SRT) is a behavioral insomnia therapy wherein sleep improvements are achieved primarily by limiting or restricting the time selected for

sleep each night so that the time spent in bed narrowly equals the individual's actual sleep requirement. In 1987, Arthur Spielman and colleagues first reported the treatment, which arose from the observation that many patients with insomnia spend extreme time in bed everynight in order to achieve their elusive sleep. Indeed, majority of such patients may experience extreme time awake everynight just because they are rationing far too much time for sleep. Typically, this therapy starts by asking the person with sufferer to sustain a sleep log to record each night's sleep. After the patient has upheld a sleep record for 2-3 weeks, the average total sleep time (ATST) is estimated from the data noted. Consequently, an initial time-in-bed (TIB) prescription may either be defined at the ATST or at a value near to the ATST in addition to an amount of time that is believed to signify normal nocturnal wakefulness. Nonetheless, unless there is convincing proof to propose that the individual requires a remarkably low sleep condition, the initial TIB prescription is not often set <5 h per night. Afterward, the TIB prescription is raised by 15- to 20-min increases following weeks the person with insomnia, on average, is sleeping >85% or 90% of the TIB and endures to report daytime sleepiness. However, TIB is generally lowered by similar increases following weeks wherein the individual, on average, sleeps <80% of the time spent in bed. As TIB tunings are generally required, SRT characteristically entails a first visit to familiarize treatment instructions and follow-up visits to change TIB prescriptions.

- The initial step in SRT is to determine the average number of hours per night that you sleep. Lower the total time permitted in bed per night to that average sleep time, as long as it is not <4h.
- A strict bedtime and awakening time are suggested, and naps are not allowed. This results in incomplete sleep deficiency, which enhances your ability to sleep the next night.
- As soon as sleep improves, you may gradually surge your time in bed to estimate your required hours of sleep.

At the initial phase of few days to weeks, sleepiness during the day and trouble in being alert can be experienced. It can be overcome by enhancing activity levels when sleepy, avoiding inactive actions, and discussing the SRT with your therapist, who can finetune sleeping times. It is best to try SRT with a therapist as decreasing sleep too much can cause sleepiness that can lead to accidents.

Cognitive Therapy

Underlying and supporting performance angst and sleep-disturbing habits of persons with insomnia are a host of dysfunctional opinions and attitudes about sleep. Opinions such as that sleep is random and uncontrollable or that one must get 8 h of sleep at night to be active every day can add to anxiety about sleep and, moreover, hinder the sleep process. In addition, inadequate awareness about how one should react to a night of poor sleep may result in practices such as daytime napping or “sleeping in,” which disturb the subsequent night’s sleep. Given enhanced identification of these types of sleep-related fallacies, therapeutic methods that precisely target these perceptions may be useful in insomnia treatment. Thereby, cognitive therapy intended to correct these dysfunctional opinions, either through official patient education elements or via the cognitive reformation method comparable with that generally used in cognitive therapy with clinically dejected persons, is often used in the treatment of patients with insomnia. Once again, typically, many sessions of such treatments are offered in clinical applications of such cognitive therapies.

Cognitive-Behavioral Therapy

This treatment methodology can best be considered as a second-generation behavioral insomnia therapy that progressed from the above mentioned strategies. Cognitive-behavioral insomnia therapy or CBT generally comprises one of the cognitive therapy methodologies used in permutation with both stimulus control and sleep restriction therapies. One reputed benefit of this therapy is that it contains treatment elements that address the range of cognitive and behavioral mechanisms that prolong insomnia. Hence, this therapy should be more universally efficient across persons with insomnia irrespective of their presenting complaint (i.e., sleep onset complaints versus sleep maintenance trouble). Certainly, CBT is a multicomponent and apparently more complex therapy than those already described. However, in practice, this intermediation generally needs no more therapist or patient treatment time than do the lower complex first-generation therapies described earlier. Often, CBT’s cognitive therapy and behavioral instructions can be provided in no more than eight sessions, but some CBT models utilize as few as two to four sessions in their clinical applications. Nevertheless, most recent CBT followers use several treatment sessions to offer enough support and follow-up for those they treat.

Phototherapy: Phototherapy, also known as light therapy, is an active therapy for people with insomnia caused by delayed sleep phase syndrome. People with this illness experience trouble in their body’s “sleep clock” such that they face problematic time falling asleep until much later in the evening or night than their requirement (and, therefore, wake up later than they expect in the next morning).

Chronotherapy: People exhibiting circadian rhythm sleep disorders can be treated by chronotherapy too, which includes deliberately postponing going to sleep by 2-3 h on successive days until you are able to fall asleep at the anticipated bedtime. This can be challenging to carry out at home and frequently involves taking some days leave from work or school to accommodate the moving sleep period when it happens during the day. After attainment of the anticipated bedtime, you must firmly apply the newly aligned sleep-wake program.

Behavioral Therapies for Headache

A distinction can be made between behavioral and cognitive-behavioral treatments for various disorders. The central elements include patient education, a collaborative patient-provider relationship, self-monitoring, problem solving, cognitive restructuring, behavioral assignments and action plans, and abdominal breathing and relaxation training. A primary goal of these elements is to increase the patient’s sense of self-efficacy and, thereby, improve clinical outcomes and long-term disease management. Self-efficacy is the confidence that one is capable of carrying out a behavior required to attain a desired goal. Self-efficacy is believed to be critical because it determines the degree of effort and persistence a patient will put forth toward behavior change.

Patient Education

Education of patients with headache disorders begins with a biopsychosocial explanation of the disorder. The patient is provided with an explanation of the disorder, genetic predisposition that contributes to the vulnerability to the disorder, and the role of stress (environmental, social, and psychological) in triggering/exacerbating the disorder. Patient education also teaches patients cognitive restructuring and problem-solving skills to enhance their ability to manage their illness and to improve their coping skills.

Self-Monitoring

For most psychiatric disorders and for headache disorders, self-monitoring is recommended for assessing episode frequency, intensity, and symptoms. Self-monitoring also assists patients with identification of triggers for episodes or exacerbations of their disorder(s) and for identification and assessment of the patient's attempts at self-management.

Problem Solving

Problem solving, when utilized in self-management protocols, helps patients identify problems they are having in the management of their illness and provides techniques to improve decision making, take appropriate actions, and alter these actions as they encounter changes in their circumstances or in their illness. The problem-solving approach helps patients to create alternative solutions, especially those that may not have been entertained in the past. The steps include identification of triggers (e.g., for stress, headache, anxiety, depressed mood, and nonadherence) and past maladaptive "solutions," generation of alternative solutions, evaluation of each solution (e.g. consideration of time, effort, and likelihood of success), choice and implementation of the solution, and evaluation of the outcome.

Behavioral Assignments/Action Plans

Out-of-office (homework) behavioral assignments/action plans are central to the success of behavioral interventions and self-management programs. Behavioral assignments/activities not only are important in the acquisition and generalization of new skills but also help patients to learn to take an active role in the management of their headaches or psychological disorder. Activities typically involve collecting information that will be needed in subsequent treatment sessions (e.g., monitoring thoughts, emotions, physical reactions to headache-related stressors; monitoring somatic symptoms of panic attacks), practicing the various skills learned in treatment sessions (e.g., relaxation training, cognitive restructuring, problem solving, and exposure to feared situations/stimuli), or other lifestyle modifications and behavioral changes (e.g., exercise). A central feature of these activities is that the patient works collaboratively with the therapist in their development; these activities are referred to as patient-generated short-term action plans

by some. Treatment typically begins with activities that are small and easy to complete. Action plans are specific and of short duration-1 to 2 weeks.

Cognitive Restructuring

Cognitive restructuring teaches patients to change their reaction to situations by counteracting stress-generating thoughts or cognitive distortions/errors (e.g., catastrophic thinking, overgeneralization, and dismissing the positive) and identifying and challenging the accuracy of the underlying distorted/inaccurate beliefs. Self-talk strategies are used to counteract inaccurate and maladaptive statements and to replace them with realistic and adaptive coping statements. Cognitive restructuring is a mainstay of treatment in stress management, headache self-management, and cognitive therapy for a wide array of psychiatric disorders.

Relaxation and Breathing Retraining

Relaxation and breathing retraining are typically used in conjunction to teach patients to exert control over physiological responses and lower sympathetic arousal in anxiety disorders and headache disorders. Abdominal breathing and relaxation training are common interventions for many anxiety disorders, especially panic disorder and generalized anxiety disorder. These techniques are also useful in patients who endorse frequent physical symptoms of anxiety but do not meet criteria for a specific disorder.

Conclusions

Although a psychologist is not needed for every patient with insomnia and headache who presents for treatment, this review article has attempted to show that providers would benefit from considering psychological principles when making treatment decisions. It is especially important to ensure that the patient's cognitive beliefs about their readiness and ability to actively manage their headaches is such that they will be able to successfully implement the agreed upon treatment plan. Moreover, issues such as medication adherence and trigger management, which are applicable to all patients, are ultimately behavioral issues that can be improved. In addition, this review article noted that there is significant evidence emerging that addressing psychological issues (or psychological principles) can have a significant impact

on the outcome of insomnia and headache management. Finally, it is important to keep in mind that, when certain psychological issues are present, such as psychiatric comorbidities, difficulty coping with headache, significant problems with sleep and/or stress, medication overuse, and a history of abuse, involvement of a psychologist will maximize the likelihood that pharmacologic and lifestyle modifications will be efficacious in reducing headache frequency and headache-related disability and result in optimal headache management.

References

1. The International Classification of Sleep Disorders, Revised Diagnostic and Coding Manual. Westchester, IL 60154-5767, U.S.A: American Academy of Sleep Medicine. 2001
2. **Weller BF.** Headache. In: Baillière's Nurses' Dictionary: For Nurses and Healthcare Workers, 24th ed. Philadelphia: Elsevier; 2007.
3. **Chesson A Jr,** Anderson WM, Littner M, et al. Practice parameters for the nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine report. Standards of Practice Committee of the American Academy of Sleep Medicine. *Sleep.* 1999;22:1128–1133.
4. **Wilson SJ,** Nutt DJ, Alford C, et al. British Association for Psychopharmacology consensus statement on evidence-based treatment of insomnia, parasomnias and circadian rhythm disorders. *J Psychopharmacol* 2010;24:1577–1601.
5. **Digre KB.** Headaches and other head pain. In: Goldman L, Schafer AI, editors. *Goldman's Cecil Medicine*. 25th ed. Philadelphia, PA: Elsevier Saunders; 2015:chap 398.
6. **Edinger JD,** Wohlgenuth WK. The significance and management of persistent primary insomnia: the past, present and future of behavioral insomnia therapies. *Sleep Med Rev.* 1999;3:101–118.
7. **Garza I,** Swanson JW, Cheshire WP Jr, et al. Headache and other craniofacial pain. In: Daroff RB, Fenichel GM, Jankovic J, Mazziotta JC, editors. *Bradley's Neurology in Clinical Practice*, 6th ed. Philadelphia: WB Saunders; 2012.
8. **Nice CKS.** Insomnia, last accessed on June 2014 (UK access only)
9. **Kwiatkowski T,** Friedman BW. Headache disorders. In: Marx JA, Hockberger RS, Walls RM, et al., editors. *Rosen's Emergency Medicine: Concepts and Clinical Practice*, 8th ed. Philadelphia, PA: Elsevier Mosby; 2013.
10. **MedlinePlus.** Headache, last accessed on July 22, 2014.
11. **Morin CM,** Hauri PJ, Espie CA, Spielman AJ, Buysse DJ, Bootzin RR. Nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine review. *Sleep.* 1999;22:1134–1156.
12. **Morphy H,** Dunn KM, Lewis M, Boardman HF, Croft PR. Epidemiology of insomnia: a longitudinal study in a UK population. *Sleep.* 2007;30:274–280.
13. **Murtagh DR,** Greenwood KM. Identifying effective psychological treatments for insomnia: a meta-analysis. *J Consult Clin Psychol.* 1995;63:79–89.
14. **Stepanski EJ.** Behavioral therapy for insomnia. In: Kryger MH, Roth T, Dement EC, editors. *Principles and Practice of Sleep Medicine*, 3rd ed. Philadelphia: WB Saunders; 2000.
15. **WHO.** Headache disorders, last accessed on July 22, 2014.
16. **Nesbitt AD,** Goadsby PJ. Cluster headache. *BMJ.* 2012; 344:e2407.