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ARTICLE

Cultural Variation in the Clinical Presentation of Sleep Paralysis

JOOP T. V. M. DE JONG
Vrije Universiteit Amsterdam

Abstract Sleep paralysis is one of the lesser-known and more benign forms of parasomnias. The primary or idiopathic form, also called isolated sleep paralysis, is illustrated by showing how patients from different cultures weave the phenomenology of sleep paralysis into their clinical narratives. Clinical case examples are presented of patients from Guinea Bissau, the Netherlands, Morocco, and Surinam with different types of psychopathology, but all accompanied by sleep paralysis. Depending on the meaning given to and etiological interpretations of the sleep paralysis, which is largely culturally determined, patients react to the event in specific ways.

Key words culture • ethnic variations • parasomnias • sleep paralysis • transcultural psychiatry

Parkes (1985) describes the parasomnias as 'events surrounding sleep.' DSM-IV defines parasomnias as disorders characterized by abnormal behavior or physiological events occurring in association with either specific sleep stages or sleep–wake transitions (American Psychiatric Association [APA], 1997). The American Sleep Disorders Association describes parasomnias as undesirable physical phenomena accompanying sleep that involve: (i) skeletal muscle activity, (ii) autonomic nervous system changes, or (iii) both (Schenck & Mahowald, 2000; Thorpy, 1990).

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In the older medical literature, sleep paralysis is known in French as *crise de l'état de veille* (crisis of the waking state) or *cataplexi du réveil* (cataplexy of awakening), in German as *verzöchertes psychomotorisches Erwachen* (delayed psychomotor awakening), or in English as 'night palsy.' The term 'sleep paralysis' was first used by Wilson in 1928 in his study on narcolepsy.

Sleep paralysis is one of the lesser-known types of parasomnia – which include *jactatio capitis nocturna* (nocturnal head banging), *enuresis nocturna* (bedwetting during sleep), sleepwalking, *pavor nocturnus* (sleep terrors), bruxism (teeth grinding), restless legs, nocturnal painful erections, cluster headaches, and sleep epilepsy. Except when it occurs in a context of narcolepsy, sleep paralysis per se is a benign, yet sometimes frightening, phenomenon (Vinken, Bruyn, & Klawans, 1969). Sleep paralysis is an easily identifiable event: while waking or falling asleep, total or partial paralysis of the skeletal muscles occurs, with the exception of eye and pharyngeal muscles. The person retains clear consciousness and the state is often accompanied by intense fear. Sometimes, the respiratory muscles are paralyzed, which can cause oppressiveness or a feeling of suffocation; others experience a strangling feeling around the throat (Simons & Hughes, 1985). An attack usually occurs unexpectedly; it typically lasts a few minutes, but episodes of over an hour have been described (Bowling & Richards, 1961). The person may then pass again into sleep (less usual); some may be freed from the sleep paralysis by a touch or a sound; or the individual may break free from the paralysis only by exerting a great effort to move some body part (e.g. the eyes or arms). The paralysis is often accompanied by hallucinations: these are called *hypnagogic hallucinations* when occurring upon falling asleep and *hypnopompic hallucinations* when occurring upon awakening. The hallucinations are described as complex, visual, auditory and somatosensory hallucinations that look like dreams. (Hypnagogic and hypnopompic hallucinations often occur without sleep paralysis; Vinken et al., 1969.) Even after the sleep paralysis episode ends, the person often experiences palpitations, trembling, or shaking with fear, and is left with a feeling of extreme exhaustion. The experiences described in this article are easily distinguished from nightmares. With a nightmare, the person wakes up later in the night with mild autonomic arousal (it being a REM-sleep period) and remembers the details of a fearsome dream. Sleep paralysis should also be differentiated from sleep terrors. Sleep terrors typically arise in the first third of the night (during stage 3 or 4 non-REM sleep) and produce either no dream recall or single images without the story-like quality of nightmares; they often lead to partial awakenings in which the individual is confused, disoriented, partially responsive, has significant autonomic arousal and has amnesia for the event on awakening (APA, 1997).

Sleep paralysis affects a minimum of 40–50% of healthy western individuals at least once in their lives (Lishman, 1978; Parkes, 1985; Vinken et al., 1969). In Japan, where the experience is known as *kanashibari,* a similar lifetime prevalence of 40% has been found (Fukuda, Miyasita, Inugami, & Ishihara, 1987). Goode (1962) reported an incidence of 6.1% and Everett (1963) an incidence of 15.4% of primary or idiopathic sleep paralysis among American medical students and nurses. Men reported the phenomenon twice as often as women (Goode, 1962). Approximately, 1% had 5–15 attacks of sleep paralysis per year; both sleepwalking and talking in their sleep happened more frequently. A study in Newfoundland found that 15% of the population had once had a sleep paralysis attack, with men reporting twice as many episodes as women (Ness, 1978; Simons & Hughes, 1985). Hufford (1982) found that 23% of college students reported having had at least one episode. Bell and Jenkins (1994) mentioned that 41% of African Americans attending a community mental health council in Chicago had experienced at least one episode of isolated sleep paralysis. They asserted that sleep paralysis was more common in African American than in white subjects, and that its incidence was greater in African-American women with panic disorder than in white patients with panic disorder. Bell, Dixie-Bell, and Thompson (1986) noted that African Americans who had what they referred to as isolated sleep paralysis disorder (i.e. one or more episodes of isolated sleep paralysis per month) were statistically more likely to have panic disorder than those who had the more typical occurrence of isolated sleep paralysis. Neal, Rich, and Smucker (1994) also found a high incidence of isolated sleep paralysis in African Americans. Ohaeri, Odejide, Ikuesan, and Adeyemi (1989) found a rate of isolated sleep paralysis of 26% among Nigerian medical students. Regarding the pattern of sleep paralysis, Bell et al. (1986) found that a pattern of frequent episodes over a period of years was not uncommon among the black population they studied. About one quarter of their subjects reported experiencing sleep paralysis once or more monthly. Hufford (1982) observed that:

> The recurrence of the event repeatedly during a single night is uncommon but not unique. Most frequently there is a single attack, either never repeated or repeated infrequently at intervals of months, or more often, years. In other cases a series of attacks may occur frequently, even nightly, for a period of a week or two. Multiple attacks during a single night are most likely during one of these runs. A victim may experience one such run or no more, or a number of these sequences may recur separated by months or years. Least common is the individual who experiences the attacks frequently over a period of years. (p 23)

Similar to findings of a Japanese research group, Bell and Jenkins (1994) found a relation between sleep paralysis and stress, probably caused by

stress disrupting sleep regulation mechanisms (Fukuda et al., 1987; Takeuchi, Miyasita, Sasaki, Inugami, & Fukuda, 1992).

Some studies suggest that sleep paralysis does not necessarily indicate psychopathology. In Newfoundland, Ness (1978) did not find greater levels of psychopathology among victims of the *Old Hag*, as measured using the Cornell Medical Index. The respondents in that study did not consider the 'hag' to be a disease and only mentioned it when asked about it during an epidemiological study (Ness, 1978). However, sleep paralysis may co-exist with serious emotional disorders, as seen in the cases presented in this article.

The influence of culture upon the experience of sleep paralysis is apparent in the following clinical descriptions. The patients were seen in a community mental healthcare setting in Amsterdam, which specialized in the care of immigrants, asylum seekers, and refugees. Apart from showing symptoms of sleep paralysis, the patients were not exceptional in terms of diagnosis or treatment approach, which was rather integrative, eclectic, and directive. In the cases presented, the experience of the sleep paralysis is printed in italics. Some cultural aspects and research questions related to this fascinating phenomenon are be highlighted after the case descriptions.

Examples of Sleep Disorder

Case 1: Sleep Paralysis in a Creole-Surinamese Woman

The first patient, Elisa, is a 35-year-old Creole-Surinamese woman who suffers from severe recurrent episodes of a major depression disorder with both mood-congruent and mood-incongruent psychotic features. In addition, she suffers from a dissociative disorder and sleep paralysis. Elisa was referred by her family physician because of suicidal ideation provoked by fears of being murdered by evil spirits. Elisa sees hearses everywhere that aim to take her away. Elisa's dissociative disorder manifests itself during conversation: she suddenly enters into trance with her body shaking heavily, her pupils rolling upwards, and her arms and hands getting cramped. On such occasions, she mumbles unintelligible words in a strange language and is out of reach and seems oblivious to the outer world. After about five minutes, Elisa comes round again. She remembers nothing of the previous conversation and behaves as if she had just had a tiring experience.

Since arriving in the Netherlands, she has had four depressive episodes. In each depressive episode, Elisa is haunted by evil spirits that push aside her good spirits. Two of those evil spirits come back repeatedly and wish to kill her. One of the evil spirits has the body of a frog and the head of a dog with horns; the other is a tall man with a white hat and white gloves. During her depressive episodes, she also suffers from headaches, backache, stomachache, and pain in her chest. Elisa does not sleep well, lacks energy, has a poor

appetite, and worries a great deal. During one of her prior depressive episodes, Elisa had a sleep paralysis event: '*Just when I fell asleep, the gnome sat heavily on my chest and tried to strangle me by pressing on my throat. But my soul strayed in the room and I saw my body lying on the bed. My soul told me: "They've got your heart, hear it pounding." I thought I would die and when I gained consciousness., I was so afraid I wanted to sleep in my husband's arms.*' According to the patient, the gnome attack took place when she fell asleep and her soul was ready to leave her body. A diviner had explained the event in the following way: someone had bewitched her by sending a gnome (an *apuku)* to attack her.

In contrast to previous episodes, neither a healing session with a Surinamese male healer (*bonuman*) nor one with a female diviner (*lukuvrouw*) relieved her complaints. Stressors in her life included being a few months postpartum (the result of an unplanned pregnancy) and work conflicts, the latter leading to job loss and financial dependence on her husband. Elisa and her husband felt that her mental duress had never been so severe. She explains: 'The evil spirits stray through our house. I see signs of death like a white sheet that floats through the house or a man with a white hat. I see the graveyard where the hearses that follow me want to take me. I hear the bell of my home altar. I can't sleep because the frog turns into a red floating ball that puts his teeth in my arm and drinks my blood. I eat just as much as usually, but the spirits eat me so that I lost eleven kilos. My menstruation has become irregular. Sometimes I feel as if my body has changed and I smell like death. *The tall man with the white hat wants to have sexual contact with me and sometimes lies on top of me. The moment that I fall asleep, he tries to rape me. Then I lie awake, can't move and I'm scared to death. He presses heavily on my chest and sucks my nipples as if we were making love.*'

In the patient's cultural group, an autoscopic or out-of-body-experience, such as the one that occurs during her sleep paralysis, is considered to be an indicator of a high grade of spiritual development. Accordingly, during the current illness episode, a diviner advised Elisa to follow her calling to become a healer. The treating psychiatrist (the author) decided to frame the treatment as a sort of initiation into the role of healer and communicator with the spirit world. For 10 sessions during her psychiatric treatment Elisa was asked to let her ghosts speak, so they could make their wishes knowledgeable. In one session, the patient made a 'spirit genogram' giving the ghosts a place within the Surinamese and West African cosmology. Elisa practiced faithfully when given 'homework assignments' that included the following three tasks: (i) to express some of her discontent with several family members, (ii) to examine her self-deprecatory cognitions, and (iii) to practice changes in handling conflicts with her husband. At one point, Elisa's husband withdrew from the therapy, saying that he already spent thousands of guilders on healers (US $1 equals approximately 2.5 Dutch Guilders). A tape was recorded for him of the last visit in which we rehearsed the newly obtained relational views and changes. Thus impressed, the husband remained supportive of and involved in the therapy. Towards the end of the

therapy, Elisa continued to suffer from several vegetative symptoms related to her depression. Elisa was given a prescription for an antidepressant and was advised to take it with her to Surinam in the event of a relapse. After her therapy, Elisa returned to her home country to undergo her initiation as a healer. For the following six years, she remained asymptomatic. However, she had not yet found the courage to work as a healer, a *bonu-vrouw,* in Amsterdam.

Case 2: Sleep Paralysis in a Moroccan Male

Mohammed, a 35-year-old Moroccan, was referred for treatment by his physician owing to complaints of heart palpitations, nightmares, and chest tightness. His 'heart fears' were so great that he was diagnosed as having a *cardiac phobia* (i.e. fears of a heart attack in the absence of any real cardiac pathology). He had had similar complaints when he was 8 years old after the sudden death of his mother. Following her death, Mohammed was raised by his maternal grandparents. Mohammed's grandfather died when Mohammed was 11; at that time, Mohammed experienced the same cardiac complaints. At the age of 18, after the patient was arrested and tortured for participating in 'political gatherings' in Morocco, he fled to the Netherlands. He was known as a hard worker and a happy lad. However, in the years before his referral, he unexpectedly lost eight friends and relatives. Mohammed felt that it was hard for him to experience pleasure and that he was becoming increasingly isolated. He finally sought psychiatric help for his complaints. He was diagnosed with a major depression disorder with melancholic features and complicated bereavement.

During his intake interview, Mohammed mentioned sleep paralysis events. *Once a week an old lady comes to him without him knowing whether he is awake or asleep. Sometimes it is a being that he cannot describe. It goes on top of him, holds him and tries to strangle him.* During the course of the therapy, this complaint returned. When he complied with his anti-depressant, the sleep paralysis occurred once a month, but when he took medication less regularly, his complaints increased in frequency to once a week. Mohammed described his attack as follows: '*When I lie on my back I either hear ringing in my ears or I hear the doorbell ringing. Sometimes I hear sounds as if there are burglars, or people crying for help. At these times I cannot move. My heart is pounding, and my body feels agitated and trembles as if I am getting shocks, or as if I am being put under narcosis. From time to time, it seems as if someone is pressing on my body. Sometimes I see a scary old witch with a skinny head, long dirty hair, dirty teeth and old black clothes coming towards me. She spreads out her hands towards me to strangle me and she is so strong that I cannot push her away from me. In my mind, I tell her to leave. Sometimes I manage to move after which the attack is over.*' Mohammed believed the witch attack to be the result of sorcery (*zhor*) by a woman, possibly an aunt with whom he did not get along. Spirits (*jnun*) might also have been the cause of his problem. Placing a folded knife and some salt

under the pillow did not chase the *jnun* away; the attacks persisted. After explaining the characteristics of sleep paralysis, Mohammed no longer feared the attacks and the accompanying visions. He understood that sleep paralysis was benign and would disappear without any consequences. There is a word for it in Moroccan Arabic, i.e. *boratat*, which means 'someone who presses on you.' It is quite striking that about a third of the Moroccans I have seen in therapy suffer from sleep paralysis.

The treatment consisted of a grief therapy supported by an antidepressant. During the therapy, Mohammed spoke about his survivor guilt after the death of his friends and relatives. Along these lines, he had many dreams in which friends and family members beckoned him to join them in death. Mohammed explained that in his culture, this dream indicated imminent death. I asked him, despite his doubts, to elaborate his dream through guided imagery. After several attempts, Mohammed was able to visualize another outcome than his own death. During holidays in Morocco, Mohammed made a pilgrimage to the tombs of his friends and family members. Because Islam prescribes a burial within 24 hours, many immigrant workers only hear of someone's death after some time, often resulting in complicated grief. During his pilgrimage, he expressed his repentance that he could not be present at their funeral, and after some time in treatment, he reported feeling better.

Case 3: Sleep Paralysis in a Guinea-Bissau Male

Fadi is a 43-year-old man from Guinea Bissau, studying in Portugal. One day while taking notes during a lecture in Coimbra, Fadi suddenly became incapable of writing. A few days later, he could not talk anymore and both legs became paralyzed. After organic causes were excluded, he was put on an intravenous drip of a rehydrating fluid in the hospital for about 6 weeks without any effect from this placebo treatment. Fadi traveled to the Netherlands and presented for treatment with flashbacks that were related to a post-traumatic stress disorder, conversion symptoms (agraphia, aphasia, paralysis), major depression, and panic attacks with agoraphobia. He complained of days of exhaustion after having an orgasm. Like many Africans whom I saw during my work in West Africa, he was gifted in responding to hypnosis, as are patients with conversion symptoms (Hoogduin, van Dyck, & de Haan, 1990). The author explained hypnosis noting that it is useful to live through and deal with emotions that he did not recognize or solve in the past. With the help of age regression, he relived a series of traumatic events from his youth onwards. For example, he relived how, wearing some ragged shorts, he was brought to his circumcision by a servant. He recalled that his father accompanied his oldest brother who wore a white gown and was seated upon a white horse. He told how he had to stick out his finger during his painful circumcision to show that he was not afraid even if they wanted to chop off his finger. He relived a series of humiliating and racist situations that occurred in a Portuguese and

French colonial school where Fadi was noted to be a gifted student. During the therapy he shifted among the languages that he spoke when the events happened – Portuguese, Crioulo and French – getting him much more emotionally involved. He ended the series of hypnosis sessions by reliving some life-threatening war situations that he was exposed to as a conscript in several Portuguese colonies. Every session was concluded by post-hypnotic suggestions implying that his complaints would decrease or that he could deal with what is left in his dreams. I used a post-hypnotic suggestion on his sexual complaint of days of exhaustion after making love by using an analogy about the power of elephant grass that rises again after each storm. However, this did not improve his sexual complaint. Parts of the sessions were used to teach him self-hypnosis and to understand and to control the hyperventilation that seemed to generate his panic attacks. By correcting his anticipatory fearful cognitions, he learned to deal with the thoughts and fantasies that caused his panic attacks. He practiced with a hierarchy of fear-provoking situations in the street. On his own initiative and without mastering Dutch or English, he arranged a newspaper round.

A number of conflicts in his family in Guinea Bissau were discussed. The previously mentioned competition with his brother and the perceived rejection by his father formed the basis for his closeness with his mother. Therefore, he tried to compensate for these early difficulties and his lack of self-esteem by taking on the emotional and material worries of the family. Because his family interpreted his troubles as the result of witchcraft, we elaborated the psychological and socio-economic backgrounds of witchcraft beliefs in Africa in a kind of Socratic discussion.

During the ninth session, he stated: '*Sometimes I see a frightening shade coming into my room. He only shows up when I sleep with my belly upward. The shade looks like a human being but has no face, it does not look like a man or a woman and wears no clothes. It comes when I fall asleep, but even more often when I am awake. I feel pressure on my chest as if someone wants to strangle me. I cannot move, I get panicky, my heart beats strongly and I think I am going to be killed. Sometimes, with great effort, I can send it away. Most of the time, it is all over after a short while but I wake up with the fearsome feeling that someone is following me. A few times, I tried to do something about it by putting a knife with some salt, lemon and kauri shells under my pillow.*' In his mother tongue, Fulani, this type of experience is called *kibo kibongal*. Fadi's explanatory model refers to the soul of a deceased person visiting those he loved while alive. It may be the soul of a deceased child, a parent, a friend or anyone. At the moment the deceased comes to the living person, the latter feels its weight. Although the living person is shocked, he or she will not be able to scream. Incense or burning a white candle helps occasionally, as does hanging a red cloth over the door. Sleeping on one's side may also be helpful. After receiving an explanation of the neurophysiological basis of sleep paralysis, the patient felt relieved and a subsequent attack did not scare him.

During the first 15 sessions, Fadi seemed overwhelmed with sadness. During the next 10 sessions, he made contact with his anger, and a few weeks

later, his sexual complaint disappeared. A short time later he traveled to Africa. A year later, he told me that his complaints were gone. At his father's and other family member's 'urgings,' he was still arranging the necessary ceremonies to neutralize the magic–religious machinations associated with the sleep paralysis visitations.

Case 4: Sleep Paralysis in a Dutch Female Student

Mirjam, a 22-year-old Dutch student, presented for treatment for study problems, panic attacks (provoked by hyperventilation) without agoraphobia, and an adjustment disorder with mixed disturbance of emotions and conduct. She also had occasional hypnagogic hallucinations – that Mirjam called 'waking dreams' – which on three occasions occurred during sleep paralysis. During the hallucinations, she reported, '*I hear a sound in my head like the humming of a motorway, I see bright colors and feel pounding in my head, followed by all sorts of images.*' One year previously, Mirjam had experienced insomnia: she could not sleep until two o'clock in the morning and woke up again at six. During this time she cried a lot, lost two to three kilos in weight because of poor appetite, felt tired, and considered suicide, especially in the evening. Mirjam states, '*During this period it happened three times that I was not able to move while lying on my bed. I got so scared that my heart pounded. One of these attacks ceased because my landlady called me, other times it lasted for about five to ten minutes. In the beginning I felt threatened, afterward I felt as if I could let my body fall asleep before my mind. Lately I don't dare to let things go that far.*' Mirjam thought the paralysis was the result of releasing tension and stress; she then became so relaxed that she lost control over her body.

Case 5: Parasomnia Overlap Disorder in a Creole-Surinamese Man

Henk, a 50-year-old Creole-Surinamese man, was referred for treatment by his family physician and an occupational health physician. He complained of pain over his occiput, fatigue, disturbances in perception and problems with finding words. Henk was often absent from work. Henk had a long history of visits to various specialists because of diagnostic confusion as to whether he suffered from a psychosis and epilepsy caused by alcohol abuse. Henk, himself, thought the problems were caused by possession by Surinamese *winti* spirits. A CT scan revealed hypodense areas suggestive of neurological damage due to alcohol abuse. As a soldier in the Netherlands, Henk drank frequently, and his drinking increased after his divorce in 1977. Since 1995, spirits have haunted Henk. They come once every few weeks for two or three nights, somewhere between midnight and four to six in the morning. His girlfriend, who joined him during the intake, reported that the experience starts with Henk making 'who-who' sounds, followed by screaming. She was afraid to get closer to him because at times he smashed

things in the room. After about ten minutes, Henk makes 'huij-huij' sounds and falls asleep. Sometimes, the spirits present themselves in another way. When Henk dozed off in the evening and sometimes during the night, he would walk around in the room, talking or singing in a language unknown to her. Henk himself thought that *winti* spirits caused his plight because following the nocturnal visit his bones were painful and he felt exhausted and hopeless. He did not know whether he moved so wildly that this might explain the pains in his bones. The pain in his bones could continue for the whole day so that he was unable to work. Sometimes he would fall out of bed and wake up.

Henk regularly felt that he would be strangled during an anxious dream while falling asleep. During this dream he would fight and try to resist his attackers, who in his view were evil spirits. To him it was not a dream but a real threat to his life. Therefore, he was sometimes afraid to go to bed. He once wanted to jump through the window in a 'state of altered consciousness' as noted in one of his medical reports. These experiences would happen when he slept on his side and, in his opinion, were unrelated to a depressed mood or periods of heavy alcohol use.

Diviners and healers attributed his problems to sorcery or to possession by different *winti* spirits. One of the spirits belonged to his deceased father and wanted to reincarnate through him. This spirit got angry because Henk had broken a food taboo, which caused him to develop a rash on his body. The different spirits were guided by the founding spirits of his mother's plantation. One healer told him that his complaints indicated that he had to become a healer, but Henk said that he detests dancing in a loincloth for strangers in the middle of the night. However, because he feared possible retaliation by the spirits if he did not follow his calling, he said he might consider working as a healer for his family members only.

From a diagnostic perspective, Henk suffered from alcohol dependence. His sleep problems provided quite a complex diagnostic puzzle. First, he manifested symptoms of nocturnal panic attacks with palpitations, panic, paraesthesias in his feet, and an exhausted feeling related to his alcohol abuse. He met the criteria for Alcohol-induced Sleep Disorder, Parasomnia Type (DSM-IV: 291.89; APA, 1997). His symptoms best fit 'Parasomnia overlap disorder,' i.e. a combination of *pavor nocturnus* (sleep terrors), REM-sleep behavior disorder (subjective fear, violent motor activity, injury), sleepwalking, and sleep paralysis. Most of his problems are caused by his alcohol abuse with a concomitant decreased inhibition of his GABA-system and excitability of the glutamate, dopaminergic, and the noradrenergic receptor systems (Geerlings, 2000).

Discussion

Sleep paralysis has evoked considerable interest within cultural psychiatry and psychology during the last two decades. This interest is related to revival of the discussion around Culture-Bound Syndromes (CBS) in

which there was an attempt to discover commonalities in these experiences. Simons and Hughes (1985) defined CBS as 'popular diseases,' in which changes in behavior or experiences are central. They classified the 192 known CBS into seven clusters or *taxa* and assigned sleep paralysis to the *Sleep Paralysis taxon,* a cluster of syndromes in which physiological factors play a dominant role. Hence, the authors considered that certain CBS share similarities due to a common underlying physiology.

The following description of an attack of one of these CBS, *uqamairineq,* presented by a 30-year-old Inuit woman from Alaska, shows striking resemblances to the five cases described earlier (see also Law & Kirmayer, 2005):

> Just before I fall asleep I get paralysed. Sometimes it starts with a humming sound. Sometimes I can hardly see and I get scared. My grandparents told me it was a ghost trying to get hold of me and they said I should fight against it. After the humming sound I cannot move anymore. Sometimes it feels as if I am not inside but outside my body, as if I have to fight to get back in. When I do not return immediately I do not manage to go back anymore and it feels like I could die. At those times, I really panic. Sometimes it feels like an eternity before I can move again. I finally wake up with a pounding heart and I feel all shaken up and I'm frightened. (Bloom & Gelardin, 1985)

Ness (1978) described a similar syndrome under the name *Old Hag* (*hag* = meaning witch) in a small town in Newfoundland, where English descendants live by fishing and lumber. Here too the victim suddenly wakes and cannot move. Sometimes the paralysis happens when falling asleep. It feels as though a heavy weight presses on the chest. Some see a human being and others an animal sitting on their chest. Those that are 'hagged' remain completely conscious and are capable of hearing and seeing everything that is happening in their surroundings, but they remain paralyzed until somebody touches them or or says their name (Melvin, 1985.) In Ethiopia, a similar experience can occur when a Zar ghost gets hold of a human being during the transition from being awake to falling asleep or vice versa and sits on the victim's chest. The person feels powerless, has no strength, and fears being smothered. The victim sees threatening images that cause panic (De Jong, 1986, 1991, 1992; Giel, 1987). In the Caribbean, the experience is called *kokma*, and in the Philippines, *hart nagarat.*

The experience of sleep paralysis seems to occur in a variety of cultures and is interpreted with the help of culture-specific explanatory models. The Inuit attribute *uqamairineg* to the relation between human beings and the world of the spirits. During her depression, the Surinamese woman described earlier interpreted that an ancestor (*jorka*) – part of the triad that composes the soul – tried to rape her, whereas in a previous depressive episode she attributed her paralysis to a forest ghost (*apuku-gnome*). Her

out-of-body experience led to advice to become a healer. The Moroccan patient had an etiological explanation of witchcraft (*zhor*) and ghosts (*jnunn*). The Guinean man attributed his experience to the soul of a deceased person who loved him very much. The Dutch patient provided an explanation in terms of a release of stress. The Surinamese man believed his symptoms were due to ancestral spirits (*winti*) and sorcery, an externalizing attribution, laden with elaborate cultural meaning, but did not admit the contributing influence of his alcohol abuse. Like the Surinamese woman, his symptoms were interpreted as a calling to become a healer. As often happens in Africa, this put both of them in a dilemma. Initiation as a healer takes a lot of investment and time, however, not following the calling may result in the wrath of the ancestral (healing) spirits and continue the illness or cause a relapse once the disorder is over. The Surinamese man solved this dilemma by considering working as a healer for his family members only. The Surinamese woman received her initiation in Surinam and mentioned that she would start healing if she felt spiritually strong enough, thus providing herself a solution to the possible retaliation of the spirits.

Elaborate cultural interpretations of sleep paralysis can also be found in western cultural heritage. In Roman times, the *incubus* (from Latin *incubare*, 'to sit on') was known as the demon that brought nightmares. During the Middle Ages, the two inquisitioners who wrote the 'Witches' Hammer,' wondered whether the *incubus* was capable of impregnating a human being during sleep (Schmidt, 1923). (The Surinam woman suffered a similar erotic connotation of her experience.) In his *Demonology* (1597), King James VI of Scotland called the incubus a natural phenomenon for which a visit to the doctor was not necessary (Simons & Hughes, 1985). In English, *incubus* is a synonym for *nightmare.* The Portuguese word for nightmare, *pesadelo*, has derived from the word *pesado*, heavy. A German word for nightmare is *Alpendrücken* (*Alpen* = alps, *drücken* = press). There is etymological evidence in various languages to suggest the influence of sleep paralysis on the understanding of nightmares.

From my clinical experience I have the impression that the incidence of sleep paralysis varies across cultures. Many Moroccan patients seem to experience sleep paralysis; the same holds for Cambodians (Hinton, Pich, Chhean, & Pollack, 2005). Among Maghrebins (i.e. Algerians and Moroccans), we found a high prevalence of Disorders of Stress Not Otherwise Specified (DESNOS; De Jong, Komproe, Spinazzola, van der Kolk, & van Ommeren, 2005); it may be interesting to study the relation of these experiences with the highly prevalent use of dissociation – for example, by healers – in these cultures. It is possible that sleep paralysis may reflect – or create – a predisposition to enter altered states of consciousness and to experience unusual delusional and hallucinatory phenomena during states

of dysphoria. Similarly, it may be interesting to look at comorbidity of sleep paralysis with panic disorder, depression and other diagnoses, to assess whether sleep paralysis increases or decreases with the seriousness of the comorbid condition, to study the biological mechanisms related to these phenomena, and to verify differences in prevalence and incidence rates across a series of cultures. It is quite obvious that mental health professionals should be aware of the existence of this diagnosis, because the hallucinatory experiences may easily result in false-positive diagnoses of psychoses, especially among immigrant groups who more likely receive a diagnosis of (paranoid) schizophrenia. Theoretically, it is possible that sleep paralysis with its possible sexual connotations could result in false accusations of sexual abuse.

The diversity of cultural interpretations of sleep paralysis is also interesting for cultural psychiatry for another reason. Many authors agree that universal characteristics in the presentation of psychopathology are prominent to the extent that biophysiological factors play a role, but that various idioms of distress, as well as illness factors, are culture specific and better explained within a sociocultural paradigm (e.g. De Jong & van Ommeren, 2002; Littlewood, 1991). Sleep paralysis challenges this widely accepted viewpoint because it is a neurophysiological phenomenon, yet it shows enormous variety in its cultural expression and interpretation. Finally, in general, sleep paralysis per se is not so serious that it warrants treatment. The patients described here were helped by using a culturally appropriate way to diminish the distress of sleep paralysis, by providing psychoeducation, and by treating the associated or underlying disorders. For chronic sufferers, a medical physicist could design an apparatus that reacts to movements of the eyeball and produces a tactile, auditive or electrical stimulus. For most sufferers, a restless bedfellow will do because a slight touch is sufficient to release someone from this potentially frightening experience.

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Joop de Jong MD, PhD is Professor of Mental Health and Culture at the Vrije Universiteit in Amsterdam and adjunct Professor of Psychiatry at Boston University Medical School. He is the director of TPO (Transcultural Psychosocial Organization) – Peace of Mind, a WHO Collaborating Center for Refugees and Ethnic Minorities. TPO has developed or supported psychosocial and mental health programs in (post-)conflict situations in 17 countries in Africa, Asia Europe and Latin America (Algeria, Burundi, Cambodia, Congo, Eritrea, Ethiopia, Gaza, India [Tibetans], Indonesia, Kosova, Mozambique, Namibia, Nepal, Sri Lanka, Sudan, Surinam, Uganda). In the Netherlands, TPO is carrying out several epidemiological studies and intervention projects among immigrants and refugees. Joop de Jong publishes in the field of cultural psychiatry and psychotherapy, public mental health and epidemiology. In addition, he works part-time as a psychiatrist/psychotherapist. In the past, he worked for seven years as a tropical doctor, public health officer, and psychiatrist/psychotherapist in Africa and Asia. *Address*: TPO, Keizersgracht 329, 1016 EE Amsterdam, The Netherlands. [E-mail: jdejong.tpo@pom.nl]