Case Report

Two Cases of Sleep-Related Dissociative Disorder with Episodes of Nocturnal Eating

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Sleep Sci

Abstract

Sleep-related dissociative disorder (SRDD) is a female-predominant psychiatric parasomnia that was first identified as a condition that mimics sleepwalking in 1989, and was included in the International Classification of Sleep Disorders, 2nd edition, in 2005, with a subsequent expanding literature of case series and case reports. The objective hallmark of SRDD, found in about half of the reported cases, is sustained electroencephalogram (EEG) wakefulness during dissociative episodes emerging during wake-sleep transitions or after awakenings from light non-rapid eye movement (NREM) sleep or rapid eye movement (REM) sleep. Herein are reported two additional cases of SRDD in two female patients aged 53 and 40 years with prominent histories of multimodal abuse (typical of SRDD), with childhood emotional and food deprivation abuse in Case 1, and childhood emotional, sexual, and physical abuse in Case 2. Both patients were affected by "sleep phobia" and had recurrent nocturnal eating episodes. Major findings from the cumulative literature on SRDD are reinforced by these cases, with additional findings being described, particularly nocturnal eating behaviors and priming/triggering factors.

Keywords

- sleep-related dissociative disorder
- sleep-related eating
- sleepwalking
- PTSD
- video-polysomnography

Introduction

Sleep-related dissociative disorder (SRDD) is a female-predominant psychiatric parasomnia that was formally identified as a condition that mimics sleepwalking in 1989, with a series of 8 cases.[1,2] In 2005, SRDD was included in the "Parasomnias" section of the International Classification of Sleep Disorders, 2nd edition (ICSD-2).[3] The objective hallmark of SRDD (found in about half of the reported cases) during video-polysomnography (vPSG) involves abnormal behaviors emerging during sustained electroencephalogram (EEG) wakefulness, either during wake-sleep transitions or after awakenings from light non-rapid eye movement (NREM) sleep or rapid eye movement (REM) sleep, most often in patients with daytime dissociative disorders and other major psychopathologies that usually originate after major trauma.

The condition involves dissociative symptoms defined as "unbidden intrusions into awareness and behavior, with accompanying losses of continuity in subjective experience and/or inability to access information or to control mental functions that normally are readily amenable to access or control. Dissociative disorders are frequently found in the aftermath of trauma and encompass various clinical presentations, such as dissociative identity disorder, dissociative amnesia, and depersonalization/derealization disorders".[2,3]

As discussed in a previous article,[2] due to inadvertent administrative reasons, SRDD was only included in the ICSD-3[4] in the differential diagnosis of NREM and REM sleep

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parasomnias in the ICSD-3[4], and also in the Diagnostic and Statistical Manual of Psychiatric Disorders, 5th edition (DSM-5).[5] Although the DSM-5 contains a section on dissociative disorders, it does not include SRDD in its "Sleep Disorders" section, an unfortunate oversight.

An updated literature review on SRDD has recently been published,[2] with a subsequent report on an additional case series of 8 patients,[6] indicating that SRDD is becoming increasingly recognized (across 3 continents: North America, South America, and Europe), and emphasizing the need for prompt diagnosis and effective management, and the need to have SRDD reincluded in the ISCD.

Numerous compelling reasons have been provided for the inclusion of SRDD in the "Parasomnias" section of the ICSD:[2] it is a sleep-related behavioral and experiential disorder, which fits into the domain of parasomnias. Sleep clinicians will first turn to the "Parasomnias section" of the ICSD when evaluating a patient with abnormal sleep period behaviors resulting from SRDD. Although SRDD is a psychiatric parasomnia, nevertheless it is a parasomnia. As a pertinent analogy, a set of parasomnias is known to emerge from sleep-disordered breathing as the underlying substrate,[7] but these are still considered parasomnias.

The literature on SRDD keeps expanding. However, current review articles on dissociative disorders (as discussed in reference 9) mention SRDD and cite the ICSD-2 (but are unable to cite the ICSD-3), emphasizing the need to include SRDD in the current version of the ICSD. There is still much more to learn about SRDD and the factors that may promote its emergence during the sleep period. Inclusion in the ICSD will encourage sleep clinicians to report additional cases and further expand the literature. Parasomnia overlap disorder (included in the ICSD-3 as combined rapid eye movement sleep behavior disorder [RBD] and NREM parasomnias),[4] for example, may also include SRDD.[8]

There is an expanding literature on parasomnia borderland conditions, including trauma-related cases involving posttraumatic stress disorder (PTSD) and the proposed trauma-associated sleep disorder, further emphasizing the need to include SRDD as another trauma-associated sleep disorder in the official sleep nosology (ICSD). Finally, there can be forensic consequences from SRDD; therefore, the inclusion of SRDD in the official sleep nosology (ICSD) will help legitimize sleep expert testimony in legal cases involving SRDD.

A comprehensive resource on SRDD has recently been published by Eiser in the Encyclopedia of Sleep and Circadian Rhythms, 2nd edition,[9] encompassing the history and nomenclature; demographics and prevalence; onset, ontogeny and clinical course; etiology, pathophysiology, and pathogenesis; associative, predisposing, and precipitating factors; complications and consequences; diagnosis, differential diagnosis, and formal status of diagnosis; and treatment.

Herein, two additional cases of SRDD will be presented, involving abnormal nocturnal eating episodes and sleep phobia in patients with prominent histories of early-life-onset trauma. These two cases further reinforce the need to include SRDD in the ICSD, since it should be included in the differential diagnosis of Sleep Related Eating Disorder, besides the other NREM parasomnias that are listed in the classification.[4]

Case Reports

Case 1 (C.V.)

A 53-year-old married woman with previously diagnosed dissociative disorder (DD) (and other psychiatric disorders listed in ►**Table 1**) was referred by her psychiatrist for evaluation of injurious nocturnal dissociative episodes, "when she sounds like a little girl", according to her husband, who attended the consultation. These episodes occurred 3 to 4 nights weekly, with 1 episode per night beginning 2 to 4 hours after sleep onset. Her husband would follow her around the home during these episodes that had begun 1 to 1.5 years previously, when there was a dose increase of her bedtime mirtazapine, and also around the time of starting bedtime cyproheptadine therapy for PTSD nightmares. She was seeing two therapists for weekly sessions, a general psychotherapist and a noted therapist specializing in DD. The patient had suffered from multiple forms of childhood-onset abuse inflicted by her parents, including frequently sending her to bed (along with her brother) before she could eat her supper. She then would arise "in the wee hours" and bring her younger brother to the kitchen, where they would quietly eat while their parents slept.

Her nocturnal episodes involved ambulation through the house and into the kitchen. She and her husband had devised a system of bells on doors that was meant to awaken her husband to enable him to intervene. During some episodes her husband would try to awaken his wife and ask her if she knew who he was, and she would typically answer: "No, I don't, but I do know you're someone who sometimes tries to help me." He then would realize that he should repeat to her "you're safe, go back to bed, you're safe" while redirecting her back to bed. The next day he would comment to her that "you sounded just a little older than our 5 and one-half year-old granddaughter," in reference to the mannerisms and tone of voice during her nocturnal eating episodes. She also confirmed that during these episodes "I would always eat the same food that I would get for my brother at night when we were children." She would often say out loud, "we have to be quiet Timmy, we have to be quiet," and her husband had even heard her utter "shhhh, we have to whisper" (Timmy was her younger brother and she was recreating a childhood abuse-related scenario). Her husband reported that she would sometimes be muttering about her brother or their parents, and otherwise act in a manner highly suggestive that she was reliving frightening events of her childhood. She had suffered from a broken toe and pulled intercostal muscles related to collisions or falls during these nocturnal ambulations.

Some nights the husband had awakened to find that "she was flailing her arms in bed, really quite angry, and she would shout 'leave me alone, don't touch me, get out of here.'" It was clear that she was not directing these comments to her husband, whom she was not aware of during these moments,

Table 1 Main clinical characteristics of two patients with sleep-related dissociative disorder (SRDD).

	Case 1	Case 2
Demographic characteristics		
Gender: female	+	+
Age (in years)	53	40
Age (in years) at onset of episodes	52	39
Characteristics of the episodes		
Stressful event(s) before the onset of episodes	−	+
Frequency of episodes	3–4 nights/week	Several nights/week
Duration of the episodes (in minutes)	30–60	Variable
Typical time of occurrence after going to bed (in hours)	2–4	Variable
Episodes during naps	−	−
Amnesia	Partial	Complete
Interaction with other people	+	−
Violent behaviors toward others	−	−
Angry behavior	+	−
Manipulating sharp objects (knives, tools)	−	−
Bizarre/dangerous behaviors	−	+
Injuries (accidental)	+	+
Going out of the home	−	−
Attempting to get out of the home	+	−
Inappropriate eating (and cooking) behaviors	+	+
Infantile behavior and infantile voice/speech	+	−
Reliving a childhood abuse scenario	+	+
Inappropriate sexual behaviors	−	−
Inappropriate urination	−	−
Sleep phobia	−	+
Parasomnia history		
Personal history of non-rapid eye movement (NREM) parasomnia	−	−
Family history of NREM parasomnia	−	−
Restless legs syndrome (RLS; mild)	−	+
Comorbid psychiatric disorders		
Posttraumatic stress disorder (PTSD)	+	+
PTSD nightmares	+	−
Dissociative disorder (daytime and nocturnal)	+	+
Panic disorder (with agoraphobia)	+	+
Bipolar disorder	−	+
Major depressive disorder	+	−
Past or current psychotic disorder	−	−
Personality disorder (Axis II)	−	−
Past alcohol abuse disorder	+	−
Past or current alcohol or substance use disorder	−	−

but rather to someone in her dreams/dissociative states. Very often afterwards her husband would observe that "she is quite surprised that she is not in her childhood home." On other occasions he would see her trying to push against a glass door trying to get out, and apparently she did this repeatedly during her childhood.

Poor appetite and at times weight loss had accompanied her anxiety symptoms and depressed mood over the years.

There was considerable stabilization of mood, anxiety, and appetite with the mirtazapine therapy (22.5 mg at bedtime), and for a time she seemed to sleep more soundly after taking 8 mg of cyproheptadine at bedtime. She also took lorazepam, 0.5 mg to 1.5 mg at bedtime, and venlafaxine, 150 mg daily. Her medical history included four left knee surgeries, a right parotid gland excision, hysterectomy, and tonsillectomy. She worked in customer service and sales and liked her job very much.

On the mental status exam, she was alert, fully oriented, neatly dressed, polite; intermittently tearful in relation to the emotionally-charged subject matter being discussed. She and her husband interacted very appropriately. She repeatedly mentioned that she would not feel safe sleeping in our sleep laboratory due to her great fear over the electronic apparatus used during polysomnography (PSG), which most likely reflected episodes of prior abuse with electric devices. And given how there was no suggestion of obstructive sleep apnea (OSA) or another organic sleep disorder that would strongly indicate the need for PSG, we agreed not to pursue PSG.

The recommendation to the referring psychiatrist was a dose reduction of the mirtazapine (and perhaps also a dose reduction of the cyproheptadine), to the extent possible given the status of her major psychiatric disorders, and then consider supplemental topiramate therapy to control the nocturnal urge to eat and thereby lessen the risk for reactivating nocturnal DD events. Also, the continuation of the DD therapy remained an expressed priority.

Case 2 (M.R.)

A 40-year-old Puerto Rican woman presented with her mother for evaluation of amnestic nocturnal wandering spells with incoherence witnessed by her family. During some of these spells, she would cook and eat food in the middle of the night. At times she cut herself a piece of cake, then smeared some of the frosting on her glasses and on the faucet. She also put mashed potatoes in the freezer, put dishes in the washing machine, threw dishes into the sink, put an empty kettle on the stove and then turn on the gas, and also opened doors.

The spells had begun seven months previously, as witnessed by a mental health provider and her family. She would start picking at various objects, become rigid in her neck muscles, her eyes glazed over and would become droopy, and she held her hands in a contorted position, followed by rhythmic movements of her limbs. The spells lasted 10 to 15 minutes before she regained awareness of her environment. At the start of these spells there was an aura of seeing a yellow circle in her visual field, and then she would go to her "private place." There was no loss of consciousness nor incontinence. She was able to verbalize during these events, but only uttered repetitive single words or short-phrase responses.

There was a history of memory, attention, and concentration problems superimposed on multiple psychiatric disorders, as listed in ►**Table 1**. She complained of having trouble remembering much of her daily activities, and could not recall what she had done on the previous day. She often felt "confused and foggy." At times she would leave a room at home only to return to it and not realize that she had performed some tasks or had left some tasks undone. Other episodes observed by her sister and other family members would begin with her feeling an abnormal sensation and then she would dig her heels into the floor and her arms would start shaking, followed by total body shaking without incontinence or tongue biting. She would wander aimlessly around the house during other episodes, without recall.

The patient had just completed a comprehensive neurologic evaluation at our hospital. At the initial neurological consultation for recurrent daytime spells and cognitive impairment, she had presented with a CD-ROM of one of her spells, which was viewed in the clinic. As noted by the neurologist, she was sitting at a table, then closed her eyes and started making very slow rhythmic movements of her hands as if she was plucking at a guitar, sitting otherwise quietly with her eyes closed without apparent vocalization. The impression by the neurologist was that this recorded "spell" did not look at all like seizure activity. Prior EEGs did not find seizure activity, and there was no prior anticonvulsant medication therapy, apart from taking topiramate for mood stabilization.

The results of the neurological exam were as follows: body mass index (BMI): 26.6 kg/m^2. Well groomed, flat affect, responded to most questions in a very quiet matter-of-fact fashion. Mini Mental State Exam score: 28/30. Conclusion: normal exam. The results of a brain magnetic resonance imaging (MRI) scan were non-contributory. The recommendation was for inpatient video-EEG monitoring and neuropsychometric testing. Prolonged video-EEG monitoring documented two quite similar spells arising from her normal waking low-voltage fast frequency EEG pattern (details provided in the **Appendix 1**). The conclusion was that these were non-epileptic spells. Neuropsychological testing identified an amnestic disorder not otherwise specified (NOS), not a cognitive disorder, most likely due to PTSD (the full results of this testing are in **Appendix 1**). Therefore, no underlying neurological disorder was found to be responsible for the recurrent spells.

She was then referred for a sleep and psychiatric consultation with the author. ►**Table 1** summarizes her complex psychiatric history, along with pertinent information about her spells. She had been recently hospitalized for severe depression and suicidal ideation. However, there was no history of suicide attempt, nor of alcohol or drug abuse. Her medical history included morbid obesity with bariatric surgery (followed by a 45-kg weight loss), with subsequent recurrent partial bowel obstructions, hysterectomy, 7 surgeries for polycystic ovaries, asthma, type-2 diabetes mellitus (T2DM). Her medications included: pramipexole, 1.5 mg hora somni (HS), quetiapine, 200–300 mg quaque (q) HS and 50 mg q morning (AM), topiramate, 50 mg bis in die (bid), clonazepam, 1 mg bid, bupropion-XL, 150 mg daily, sitagliptin 25 quaque die (qd), esomeprazole, 40 mg bid, albuterol inhaler, Septra DS bid.

The patient wrote in the intake questionnaire: "I don't want to go to sleep, so I avoid it as much as possible. I was abused at night, so I relate that to going to sleep." The patient clearly had a severe case of sleep phobia related to the extraordinary abuse to which she had been subjected throughout her life, which had begun when she was a child in Puerto Rico. At the age of 5 she started witnessing "with horror" animal sacrifices performed by her biological father and grandmother during Santería rituals. She had been submitted to various other forms of abuse, as described by the patient and her mother, particularly sexual abuse inflicted by her father. Her "sleep phobia" was so severe that "every night I fight going to sleep." A sister described a spell lasting 20 minutes in which the patient was performing repetitive tasks, wiping everything with a towel, claiming she needed to "get rid of the blood," apparently referring to the animal sacrifices she had witnessed.

Her dissociative episodes occurred up to several times weekly, and generally lasted less than 10 minutes, with some notable exceptions. Her family all lived in her neighborhood; the mother and sister were her personal care attendants (PCAs), and monitored her movements and activities, and would keep a running log for her. She had been married and divorced 3 times, with no children. After immigrating to the United States, she was a teaching assistant before becoming disabled. She was a talented painter who had exhibited her work in local shows, which was a source of "tremendous personal gratification."

The results of the mental status exam were as follows: she was alert, cooperative, and pleasant, and interacted well with her mother. Her current psychiatric status was stable. The vPSG was notable for a dissociative episode arising from EEG wakefulness in her sleep laboratory room prior to falling asleep, in which she ate food that she had brought with her, without any subsequent recollection of the eating event (the patient's mother reported similar recurrent eating episodes at home, both before and after going to sleep). The vPSG findings are listed in ►**Table 2**.

During follow-up appointments, she reported multiple stress-related nocturnal wanderings and other automatic nocturnal behaviors of which she was not aware, including getting up to cook and eat, as observed by her mother. She also had hit her head, without sequelae, during some of her "sleepwalking" episodes. Also, there were increased PTSD symptoms triggered by her ex-husband's menacing behaviors that caused "dissociative numbness" and "flooding of PTSD symptoms." She now lived alone, right next door to her parents, "because I want to be independent." An alarm on her bedroom door was again recommended to protect against nocturnal dissociative episodes, including leaving the house and to prevent her from entering the kitchen to cook. However, she reported not being fully compliant.

She also reported that she had been writing chapters in a journal, which she hoped to convert into a book, on her life experiences with dissociative disorder. She considered this to be a therapeutic process (excerpts from this journal are contained in the **Appendix 2**). Shortly after our last appointment, the author received a letter from the patient's mother: "My daughter died on the 20th of October in her sleep. We do not know what happened, but we are sure she did not die intentionally. She was looking forward to seeing you on the morning of the 26th [in 2 days]."

Table 2 vPSG and prolonged video-EEG findings.

	Case 1	Case 2
General PSG findings		
PSG phobia (due to past abuse with electric devices)	+	−
Total sleep time (in minutes)	N/A	362
Sleep efficiency (%)	N/A	93
Sleep latency (in minutes)	N/A	0
REM sleep latency (in minutes)	N/A	134
N1 sleep (%)	N/A	0.4
N2 sleep (%)	N/A	77.5
N3 sleep (%)	N/A	0
REM sleep (%)	N/A	22.1
PLMS index (in hours of TST)	N/A	0
AHI (in hours of TST)	N/A	2.3
REM-atonia preservation	N/A	+
WASO (in minutes)	N/A	1
vPSG monitoring		
Dissociative behaviors with EEG wakefulness during wake-sleep transition at the start of vPSG monitoring	N/A	+
Prolonged video-EEG monitoring		
Two dissociative behavioral episodes during EEG wakefulness	N/A	+
Multiple Sleep Latency test (day after vPSG)		
Mean sleep latency (in minutes)	N/A	11.7
Number of REM periods	N/A	0

Abbreviations: AHI, apnea-hypopnea index; EEG, electroencephalogram; N/A, not applicable; PLMS, periodic limb movements during sleep; PSG, polysomnography; REM, rapid eye movement; TST, total sleep time; vPSG, video-polysomnography; WASO, wake after sleep onset.

Discussion

Both cases satisfy the diagnostic criteria for SRDD that were first established in the ICSD-2.[3] The Montpelier group recently proposed updated diagnostic criteria for SRDD[6] that were congruent with their recent conceptual framework, developed to improve the transdiagnostic homogeneity in future revisions of the ICSD.[10] Both sets of diagnostic criteria for SRDD are presented in ►**Table 3** for purposes of comparison. Given the framework for diagnostic certainty proposed by the Montpelier criteria,[6] Case 1 can be diagnosed with possible SRDD, and Case 2 can be diagnosed with definite SRDD, as 2 dissociative episodes were recorded during

Table 3 SRDD diagnostic criteria: ICSD-2[3] and the Montpelier Updated Criteria[6].

ICSD-2 Diagnostic Criteria
A. A dissociative disorder, fulfilling DSM diagnostic criteria is present and emerges in close association with the main sleep period.
B. One of the following is present:
1) Polysomnography demonstrates a dissociative episode or episodes that emerge during sustained EEG wakefulness, either in the transition from wakefulness to sleep or after an awakening from NREM or REM sleep.
2) In the absence of a polysomnographically-recorded episode of dissociation, the history provided by observers is compelling for an SRDD, particularly if the sleep-related behaviors are similar to observed daytime dissociative behaviors.
C. The sleep disturbance is not better explained by another sleep disorder, medical or neurologic disorder, medication use, or substance use disorder.
Montpelier Updated Diagnostic Criteria
Criterion A: Episode(s) of complex dissociative behaviors that emerge throughout a rest period.[a]
Criterion B: Additional supportive features include episodes of long duration (typically more than 1 hour, although shorter episodes can occur, such as 15–30 minutes), occurrence while awake close to bedtime, self-inflicted injuries or the presence of dissociative symptoms during daytime.
Criterion C: The episodes should be associated with a partial or complete loss of conscious awareness, and with subsequent impaired recall.
Criterion D: A significant distress or functional impairment should be evidenced.
Criterion E: The behaviors should not be better explained by another sleep, medical or psychiatric disorder, medication or substance abuse. However, the presence of another sleep disorder should not automatically exclude the diagnosis, as SRDDs may co-occur with other parasomnias.
Three levels of certainty:
Possible SRDD: when the diagnosis is only based on the clinical evaluation.
Probable SRDD: when typical SRDD episodes are documented by homemade videos and/or when the vPSG shows episodes that do not fully correspond to the clinically-reported manifestations.
Definite SRDD: when the vPSG documents typical episodes of SRDD with sustained EEG wakefulness before, during, and after the event.

Abbreviations: DSM, Diagnostic and Statistical Manual of Mental Disorders; EEG, electroencephalogram; ICSD-2, International Classification of Sleep Disorders, 2nd edition; NREM, non-rapid eye movement; REM, rapid eye movement; SRDD, Sleep-related dissociative disorder; vPSG, video-polysomnography.
Note: [a]Includes both nocturnal and daytime rest/sleep periods.

prolonged video-EEG monitoring, and 1 episode was recorded through vPSG just prior to sleep onset.

The presumed pathophysiology in Case 1 involved priming and triggering factors. This woman was primed for SRDD based on her severe childhood-onset abuse history, including dinner deprivation and wakeful nocturnal eating episodes with her brother. The triggering factor was an increased dose of bedtime mirtazapine, with the possible contribution of starting bedtime cyproheptadine therapy, which apparently triggered the urge for nocturnal eating, which, in turn, triggered nocturnal dissociative episodes in a patient who was strongly predisposed to reenacting the childhood abuse scenarios of nocturnal wandering and eating with her brother after they had been routinely deprived of their supper by their parents. The current nocturnal behaviors were most likely a dissociative disorder, not an NREM parasomnia or another sleep disorder. The observations of her nocturnal behaviors, including her infantile voice and reliving nocturnal eating scenes with her brother, as reported by her husband, provided strong support for SRDD.

Mirtazapine is known to increase appetite and promote weight gain,[11,12] and there have been two case reports[13,14] of mirtazapine-induced sleep-related eating disorder (SRED), an NREM parasomnia,[4] in adolescent/young adult females–including one case in which a dose increase of mirtazapine induced SRED,[14] similar to Case 1, in which nocturnal eating was triggered by a dose increase of bedtime mirtazapine. In the first reported case, a dose reduction of mirtazapine did not ameliorate the SRED, which promptly ceased when mirtazapine was discontinued.[13] In the second reported case, a dose reduction of mirtazapine ameliorated the SRED.[14] Therefore, mirtazapine-induced SRED may or may not be dose-dependent.

Moreover, in a PubMed search, the literature on cyproheptadine increasing appetite and inducing weight gain in adults is limited to patients who are underweight and those with various medical disorders (and anorexia nervosa) manifesting with anorexia and weight loss. This part of the literature is not relevant to Case 1, so cyproheptadine appears unlikely to have contributed to her nocturnal eating episodes.

However, it is unlikely that the patient described in Case 1 had a NREM parasomnia that involved an eating disorder (SRED), given how she was enacting prior abuse scenarios

during her nocturnal eating episodes, with an infantile voice, as witnessed by her husband, and by how she reported immediately after these episodes that she was surprised at being with her husband rather than being back at her childhood home eating at night with her brother. Also, she would push against a glass door as she did during her childhood, along with other non-eating behaviors during her nocturnal episodes. However, it remains a remote possibility that she had recurrent dissociative episodes within SRED episodes (as a novel form of parasomnia overlap disorder[4]), but this has never been reported. A vPSG examination may have provided some clues about this remote diagnostic possibility. However, she was extremely reluctant to undergo a vPSG evaluation. Moreover, she had no history of parasomnias, and a de novo NREM parasomnia in a patient older than 50 years of age is quite uncommon. Furthermore, support for the diagnosis of SRDD with eating behavior comes from a published case[15] of dissociative disorder in a female patient who was found to have a "sleepwalking" alter personality with nocturnal binging of high-caloric sweets.

Case 1 displayed infantile speech during her nocturnal episodes of SRDD, which has previously been reported regarding SRDD,[1,2] along with two additional cases of SRDD with prolonged and complex nocturnal wanderings associated with the emergence of child alter personalities as abreactions of childhood traumas.[16] In addition, infantile speech has been reported in cases of sleep-related sexual seizures.[17] Moreover, to our knowledge, infantile speech has not been reported in adults with NREM parasomnias, which further supports the diagnosis of SRDD in Case 1.

Regarding Case 2, stage N3 sleep of 0% during vPSG speaks strongly against a NREM parasomnia, although some patients with NREM parasomnia can have episodes arise from N2, but usually in the context of most episodes arising from N3. There was minimal evidence of a "first-night effect" with vPSG, with 0 minute sleep latency, 93% sleep efficiency, 0.4% N1 sleep, 1 minute wake after sleep onset (WASO), and only 2 brief awakenings. The delayed REM-latency was probably an effect of medication. Also, the semiology of her nocturnal episodes closely matched the semiology of her daytime episodes, as witnessed by multiple family members during many episodes. It should also be noted that her behaviors during some of the nocturnal episodes are indistinguishable from sleepwalking behaviors with identical semiology (such as putting mashed potatoes in the freezer, putting dishes in the washing machine, throwing dishes into the sink, putting an empty kettle on the stove and turning on the gas, opening doors etc.), clearly indicating how SRDD should be part of the differential diagnosis of sleepwalking and vice versa. A recently published case of SRDD[18] illustrates this point:

A 26-year-old married woman was evaluated at a sleep center after her 28-year-old husband was initially evaluated by the same sleep physician on account of his wife telling him that he was beating her during sleep, of which he had no memory. These episodes of sleep violence had begun five years previously, around the time they were married. She would awaken with bruises, and once she awakened with a rope wrapped around her wrist. She complained that he would be "angry and aggressive" during these episodes that lasted 2 to 15 minutes. He had no history of parasomnia; nevertheless, he surmised that he must have been beating his wife, which prompted his original presentation for a sleep evaluation. However, the husband videotaped himself sleeping with his wife, and recorded episodes of the wife punching herself in the face while apparently asleep. Then, the wife presented for a sleep evaluation. She had a longstanding psychiatric history involving PTSD from childhood emotional, physical, and sexual trauma, and had a recent hospitalization after a suicide attempt by drug overdose. She had prominent amnesia for major life events, such as her wedding, school graduations, and the births of her children. She had had episodes of nocturnal ambulation during adulthood, and her husband observed episodes in which she would act out her dreams while seemingly asleep. She had "struggled" at night to distinguish dreams from reality. She also had similar five-minute dissociative episodes during the daytime. Her psychotherapist also reported dissociative symptoms during sessions.

The patient underwent a prolonged (three day) evaluation at an epilepsy monitoring unit that captured a nonepileptic event of right-hand tremors that generalized to whole body tremors. She had another event that began ten minutes after an awakening from REM sleep in which she swatted the air with her left hand and thrashed about asynchronously. This episode lasted nine minutes with continuous EEG wakefulness. A vPSG examination did not capture any events; her apnea-hypopnea index (AHI) was of 4.2 events/h; a urine drug screen was negative. Thus, this case satisfied the aforementioned updated diagnostic criteria for SRDD (with three levels of certainty)[6] as having definite SRDD.

In conclusion, two cases of SRDD have been documented in females with prominent histories of multimodal abuse, with childhood emotional and food-deprivation abuse in Case 1, and childhood emotional, sexual, and physical abuse in Case 2, and with both patients being affected by prominent phobias, involving "sleep phobia" in Case 2 and electronic phobia preventing PSG monitoring in Case 1. Major findings from the current literature on SRDD have been reinforced, including the predominance of the female gender, with additional findings being described, particularly nocturnal eating behaviors. Furthermore, the major burden on the spouse and other family members to ensure the safety of patients during their high-frequency SRDD episodes by means of elaborate precautions and constant monitoring is emphasized with these two cases.

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Appendix 1

Detailed Findings from Prolonged Video-electroencephalographic (Video-EEG) Monitoring and Neuropsychological Testing in Case 2

Prolonged Video-EEG monitoring (interpreted by the head of the EEG laboratory, FL): 27-hour monitoring using a 16-channel EEG. Positive findings included two major spells, two episodes of drooling, and one episode of slurred speech. The background EEG was primarily low-voltage, fast-frequency, with a posterior rhythm not well developed. There were no asymmetries, nor interictal spikes or sequences.

Two quite similar spells involved eye closure and thrusting leg movements, both in phase and out of phase, and occasional single leg kicks. At times the neck would become flexed, and the patient would slowly open and close her hands.

First episode: unresponsive at first, then she would answer questions, nodding yes to the question "can you hear me?" She was also able to remember a test word during this spell. When the movements subsided, she was immediately able to answer orientation questions, although with slowness to respond. This episode lasted 6 minutes.

Second episode: kicking movements and eye closure. At one point she pushed herself up in bed. She was able to answer questions nearly from the start when the technician entered the room. This episode also lasted 6 minutes.

Both episodes were accompanied by her normal waking low-voltage fast-pattern EEG.

Neuropsychological Testing: (conducted and interpreted by S.G.M.): The Symptom Checklist-90 detected extensive ongoing psychological issues, with pronounced states of anxiety/fearfulness, concern over cognitive functioning, somatic complaints, overall psychological distress, and moderate to severe depression with continuous suicidal ideation without intent. Her overall level of adaptive behavior functioning was compromised, as indicated by the need for a PCA (personal care attendant) to assist her in completing the activities of daily living.

Findings: select cognitive weaknesses coexisting with psychiatric issues. Verbal memory impairment (substantial), moderately-impaired delayed figural recall. Limited executive dysfunction: mild/moderate weakness in complex novel problem-solving and planning skills. Speed of processing on attention task was below average, and there was bilateral moderate-to-severe motor slowing.

Also, there were several areas of strength in cognitive functioning. [Intelligence Quotient] IQ was average. She was fully oriented, with no confusional instances during testing, nor any impairment in social interaction capabilities.

Conclusion: selective cognitive weakness predominantly limited to certain aspects of memory functioning. To a lesser extent, selective executive deficits.

Diagnosis: Amnestic disorder NOS [not otherwise specified] (not a cognitive disorder). Most likely due to PTSD [posttraumatic stress disorder] (striking history) consistent with hippocampal damage producing memory impairment. This pattern of impairment was considered similar to that seen with hippocampal damage, although actual hippocampal damage was not documented. "She may also experience dissociative states as a result of her significant emotional problems that also would contribute to instances of transient confusion, spells, and memory difficulties within her everyday living environment. It appears highly likely that psychiatric issues are most prominent for her selective memory impairment."

Appendix 2

Excerpts from the journal of Case 2 (intended for future publication) given by the patient to the author:

Journal Chapter 1

"I have something called "disassociative disorder" due to severe posttraumatic stress disorder. My mind leaves into journeys and I don't remember where it goes. Sometimes I travel to places I have never been before. I have become an expert at this actually. You can be talking to me and I will be visiting Tuscany in the middle of a sunset where all the sunflowers are open and the colors are so bright they blind you. I paint this scene many times. I paint the places I go to when I go in my journeys. Madrid, the flamenco dancer with a beautiful shawl with colors that no one has ever seen. No one ever sees her face but it's me. The dancer with the shawl looking into the green hills of different colors and the royal blue sky that doesn't exist only in my mind. I travel so much I should get credit mileage. Paris, New York, Italy, and my favorite, Spain. I have never been there, but I imagine all the colors and flavors and sounds in my mind. You might wonder when I started doing this since I have become an expert at it. I was four years old when it all began."

"I was three years old when my abuse began and took over my life. I became two people then without even knowing it. A child and a sexually-abused child. Through my father I learned that my soul could leave my body while being abused and I could spread my wings and fly. I would not remember this until I was around twenty years old. For the most part, I don't remember my childhood, only the abuse, the sexual abuse from my father and the abuse from my grandmother."

Chapter 4:

"I am an expert at world travel, which, in technical medical terms, is called disassociative disorder. My first out-of-body experience came when I was five. My father, who I occasionally refer to as my 'sperm donor', came into my room at night after being on a drinking binge. Don't misunderstand, the abuse started earlier, but I learned to travel at this age. No one knew what he was doing to me and I never volunteered information. The first night I traveled and left myself, I saw what was happening to me, it was like watching a bad movie that you want to look away from but can't help to look at. It didn't matter to me now because I had just learned a way to live two lives in one. The numbing of one part of my body and the complete sensation of the other part of my body. I would see myself in a blanket, my body unraveling as he satisfied what he wanted from me. It was like a thread being pulled and flowing with different colors through the air, that was me. I was the thread. The blanket just kept on unraveling, but the colors were so bright they were almost blinding. There was a beautiful royal blue, deep purples, and sunflower yellows. Then it stopped and the blanket fell to the floor.

He left.

I got up and scooped up the threads and started to put the blanket together again. Only, I didn't know how. Instead, I put the threads on the bed and laid next to them hoping they would gather themselves back together again. I fell asleep and in the morning they were gone. I looked under the bed, in the drawers, and in the closet, but they were nowhere to be found. Then I wondered if they too knew how to fly, so I opened the window and looked outside and there they were. The royal blue sky, the purple lilacs ,and some small yellow flowers that were outside. I knew then that I could go wherever these colors went. I was them and they were me. I would use these colors the rest of my life in my paintings to remind me of what is inside of me and what colors I don't let in. The only color that was absent was red, and that I found later on when I went into the bathroom that morning. It was on my underwear. The force of his actions had left me with a reminder of the violent act of the night before. My threads have made me be me."

Chapter 9:

"A life can be changed in an instant, especially when you are a child. So, you come to hate yourself at a young age because you cannot change the unraveling of the blanket and the colors start to fade with each year as the abuse gets worse and more often. You start to feel the wear and tear of the blanket and threads that held you together start to become weaker and weaker. As I became older with each of the monster's display of affection as he called it, I became weaker and weaker and yet there was something inside of me that was evolving.
I look back now and realize that I started to invent different people inside my mind. I became an actress. It was just that simple, this is how I learned to travel to all those places I talked about before, Madrid, Paris, and New York. I would have complete dialogues in my mind of scenes with people I didn't even know, but there were precise details to each scene. Each movement, I was a director, the actor, the writer, and the producer. Any time the monster came after me, I would switch into character and become whoever it called for at that time. From the beginning of his touching my body all the way to the end, I was in a movie in a faraway place. I didn't even notice that he would penetrate me anymore, I became immune to it. I learned that as a child with special powers, pain didn't mean anything, it was just part of the love that he wanted to share with me."

