https://doi.org/10.5664/jcsm.9048

JCSM | Journal of Clinical Sleep Medicine

SCIENTIFIC INVESTIGATIONS

Sleep-related (psychogenic) dissociative disorders as parasomnias associated with a psychiatric disorder: update on reported cases

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Study Objectives: To update the literature on the diagnostic category of sleep-related dissociative disorders (SRDDs), involving psychogenic dissociation, since the time of their inclusion in the parasomnias section of the *International Classification of Sleep Disorders*, second edition, in 2005; to summarize the most salient clinical and video-polysomnographic (vPSG) findings and typical clinical profile from all reported cases; and to provide the rationale for the re-inclusion of the group of SRDDs in future editions of the *International Classification of Sleep Disorders*.

Methods: A systematic computerized literature search was conducted searching for SRDDs, nocturnal dissociative disorders, and nocturnal dissociation.

Results: Nine additional cases were identified, with sufficient clinical history and vPSG findings to justify the diagnosis of SRDDs, supplementing the 11 cases cited in the *International Classification of Sleep Disorders*, second edition, for a total of 20 cases. Twenty-six other cases with vPSG testing were found, with 18 cases reported in abstracts and 8 cases reported in a publication with compelling histories of SRDDs and 2 consecutive vPSG studies, but without the vPSG findings explicitly reported for any case. In more than half of all reported cases, there was objective diagnostic confirmation for SRDDs consisting of the hallmark finding of abnormal nocturnal behaviors arising from sustained electroencephalography wakefulness, or during wake–sleep transitions, without epileptiform activity. These nocturnal behaviors often replicated daytime psychogenic dissociative behaviors. A history of trauma (physical, sexual, emotional) was an almost universal finding, along with major psychopathology. All patients, except for one, had prominent histories of daytime dissociative disorders. Many of the patients were referred on account of a presumed parasomnia.

Conclusions: Cases of SRDDs continue to be reported, often as a "parasomnia mimic," with psychogenic dissociation being clearly distinguished from physiologic sleep–wake dissociation as found in primary sleep disorders such as narcolepsy, rapid eye movement sleep behavior disorder, etc. Eleven reasons are provided for why the category of SRDDs should be re-included in future editions of the *International Classification of Sleep Disorders*, and in the parasomnias section.

Keywords: sleep-related dissociative disorders, nocturnal dissociative disorders, dissociative disorders, parasomnias, non-REM parasomnias, parasomnia overlap disorder, video-polysomnography, trauma, post-traumatic stress disorder, nocturnal seizures, sleep forensics

Citation: Schenck CH, Cramer Bornemann M, Kaplish N, Eiser AS. Sleep-related (psychogenic) dissociative disorders as parasomnias associated with a psychiatric disorder: update on reported cases. *J Clin Sleep Med*. 2021;17(4):803–810.

BRIEF SUMMARY

Current Knowledge/Study Rationale: Sleep-related dissociative disorders were included in the parasomnias section of the *International Classification of Sleep Disorders*, second edition, but were not included in the *International Classification of Sleep Disorders*, third edition. However, cases of sleep-related dissociative disorders continue to be reported, often as parasomnia mimics, based upon psychogenic dissociation in contrast to physiologic sleep–wake dissociation as found in various primary sleep disorders. These additional cases are presented and discussed, along with a summary of all reported cases.

Study Impact: Cases of sleep-related dissociative disorders continue to be reported, and 11 reasons are provided to support the re-inclusion of sleep-related dissociative disorders in future editions of the *International Classification of Sleep Disorders* and in the parasomnias section.

INTRODUCTION

Sleep-related dissociative disorders (SRDDs) were formally recognized as a diagnostic entity in 1989 as a mimic of sleepwalking[1] (reference is available in the supplemental material) and were included as a distinct diagnostic category within the parasomnias section ("other parasomnias") of the *International Classification of Sleep Disorders*, second edition (ICSD-2; published in 2005).[2] Its essential features consisted of "dissociative disorders that can emerge throughout the sleep period during well-established electroencephalography (EEG) wakefulness, either at the transition from wakefulness to sleep or within several minutes after an awakening from stages 1 or 2 NREM sleep or from REM sleep." Also, "in the absence of a polysomnographically recorded episode of dissociation, the history provided by observers is compelling for a sleep-related dissociative disorder, particularly if the sleep-related behaviors are similar to observed daytime dissociative behaviors."[2] Furthermore, "the similarity of the behaviors found with nocturnal dissociative disorders to the behaviors found with various parasomnias justifies their inclusion within the parasomnias section of ICSD-2 and indicates how they comprise a distinct sleep-related variant of dissociative disorders."[2] The ICSD-2 section on SRDDs, including the diagnostic criteria, is included in the supplemental material.

Dissociative disorders are a set of psychiatric disorders with diagnostic criteria elaborated in the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5), published by the American Psychiatric Association, with the core feature being "a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior. Dissociative symptoms can potentially disrupt every area of psychological functioning."[3] These core principles of dissociative states overlap with our current understanding of the clinical semiology of parasomnias. Furthermore, despite the DSM-5 group of dissociative disorders being highly heterogeneous in presentation, they share the same core dissociative mechanism, as reflected within the following 5 subtypes (each with its own *International Classification of Diseases, 10th revision* diagnostic code): depersonalization/derealization disorder, dissociative amnesia, dissociative identity disorder (multiple personality disorder), other specified dissociative disorder, unspecified dissociative disorder. So it follows that SRDDs would also be highly heterogeneous in presentation. However, video-polysomnographic (vPSG) monitoring documenting episodes arising from EEG wakefulness, as just described, serves as a unifying objective finding for the diagnosis of SRDDs. Furthermore, the context of these episodes arising from EEG wakefulness serves as another unifying diagnostic feature, as these patients also have daytime dissociative episodes, they have histories of repeated trauma, and there is frequently a congruence in the behaviors emerging during the sleep period and during daytime wakefulness. Therefore, there is a specificity and tight linkage of the various elements that enter into the diagnosis.

SRDDs were not included in any section of the ICSD-3,[4] which apparently was the result of an unfortunate series of events. Two authors (C.H.S., M.C.B.) were on the parasomnias committee for ICSD-3. We were instructed to shift SRDDs to the psychiatric disorders section of the ICSD-3, since they were viewed as psychiatric disorders. However, SRDDs could not be included in the psychiatric disorders section of ICSD-3 because of the mandate that only sleep disorders contained in the DSM-5 could be included in the psychiatric disorders section of ICSD-3. The DSM-5 described dissociative disorders but did not include SRDDs in its sleep disorders section. That is the basis for the omission of SRDDs in the ICSD-3. We now will also cite and discuss the updated peer-reviewed literature on SRDDs, indicating that SRDDs are still being recognized by clinicians and merits re-inclusion of SRDDs in future editions of the ICSD, for the reasons to be elaborated below.

METHODS

A systematic literature search was conducted in English and other languages, including PubMed, PsycINFO, PsycLIT, Embase, Scopus, etc.

RESULTS

Nine additional cases have been identified (including 2 earlier cases not included in the ICSD-2): 7 definitive cases of SRDD,[5–11] 1 suspected case of SRDD,[12] and 1 case of sleep-related psychogenic nonepileptic seizures as a manifestation of dissociative psychopathology.[13]

The 9 additional cases will now be described and summarized. **Table 1** contains summary data on these additional cases of SRDDs, along with those previously cited in the ICSD-2.[1,14–16] A striking clinical profile is evident, featuring female predominance, with presentation from early childhood to middle age, and with a universal predisposing background of multiple forms of acute and chronic trauma, along with major diverse psychopathology. Objective vPSG or EEG confirmation of SRDD was reported in more than half the cases, besides a history of daytime and nocturnal dissociative episodes observed by others in all cases.

Case 1

The youngest reported case of SRDD involved a 6-year-old girl who engaged in "bizarre episodes of dramatic regressive behavior" for 2 months prior to presentation, which was first noted at home during the daytime, and which lasted minutes.[5] Two weeks later, these episodes started lasting up to several hours, and also began to occur around the time of sleep onset several nights weekly, with sudden rolling back of the eyes, crawling on the floor, with intermittent facial twitching and infantile speech with guttural noises heard throughout the episodes. A full medical and neurological workup (including 24-hour EEG, head computed tomography scan) was unremarkable.

Outpatient behavioral therapy was ineffective, with an increased frequency and bizarreness of the behavior. She was then referred to a sleep disorders center and underwent vPSG that did not show sleep-disordered breathing. However, a major behavioral episode was documented, which occurred during the sleep–wake transition period. After 2 minutes of N1 sleep, the girl awakened (by EEG criteria, with increased chin/legs muscle activity, prominent leg movements, and eye blinking). She became combative and later attempted to bite the sleep technologist at the bedside. She grunted during the episode, with minimal intelligible words. She placed various objects in her mouth (eg, remote control, blanket). She also used the vPSG leads to tie up the technician's hand. There was fleeting upward eye deviation during the episode. All of these behaviors were shown with still images (Figure 3 in reference 5) in this report.

There was no abnormal EEG activity during this wakeful episode, which lasted 117 minutes, and then the girl returned to sleep. The girl was then referred to a pediatric outpatient mental health team for assessment, and a structured 6-month program was devised involving individual therapy, family therapy, and group-play therapy. After completion of this therapy, there were no further episodes. The diagnosis was Dissociative Disorder, Not Otherwise Specified (DSM-IV-TR), with diurnal and nocturnal manifestations. Physical or sexual abuse was suspected as the underlying trigger for the dissociative disorder. Also, the authors did not believe that the evidence supported a diagnosis of nocturnal frontal lobe epilepsy.

Case 2

A 10-year-old boy was in excellent health until the onset of sleep-related enuresis, including during daytime naps.[6] He also started to have episodes of sleepwalking and occasional violent behaviors during sleep, including kicking and punching his parents. Once

Table 1—Published cases of sleep-related dissociative disorders and summary data.

Reference	Sex	Age, years	Trauma history (physical, sexual, or emotional)	vPSG/EEG confirmed
Published since ICSD-2 (2005)				
5	Female	6	+	+
8	Female	17	+	–
11	Female	36	+	–
12	Female	36	+	–
9	Female	41	+	+
6*	Male	10	+	+
7	Male	16	+	+
13	Male	55	Major psychopathology	–
10*	Male	—	+	+
Cited in the ICSD-2				
1	Female	22	+	+
1	Female	29	+	–
1	Female	30	+	–
1	Female	32	+	+
1	Female	34	+	+
1	Female	36	+	–
16	Female	40	+	+
1	Female	—	+	–
15	Female	—	+	–
1	Male	19	Adopted as an infant	+
14	Male	46	+	+
Summary data (n = 20)	Females/males, n (%): 14 (70)/6 (30)	Mean ± SD [range]: 29.7 ± 12.7 [6–55]	90% with trauma history	55.5% confirmed with vPSG/EEG

EEG = electroencephalography; ICSD-2 = *International Classification of Sleep Disorders*, second edition; vPSG = video-polysomnography. *Cases from before 2005 that were not included in the ICSD-2.

he tried to jump out a window. These events would last up to 30 minutes, and could occur several times nightly, with complete subsequent amnesia. Brain magnetic resonance imaging and EEG were normal. Treatment with imipramine and clonazepam was ineffective.

There was a trauma history involving major psychosocial events. Two weeks prior to the first symptom (enuresis) he had moved away from his grandmother, who had been his daily caretaker. He then moved in with his parents, but his father worked increasingly longer hours and had little time to spend with his son.

The patient underwent continuous video-EEG monitoring for 72 hours. Several complex behavioral events were documented, which occurred exclusively at night, with duration ranging from 2 minutes to 3.5 hours. The boy's eyes were closed, and he was unresponsive to external stimuli. He often punched, kicked, jumped out of bed, and tried to bite a nurse. All episodes arose from documented wakefulness on EEG, with organized background α activity preceding the events. In 1 episode lasting 3.5 hours there was occasional EEG drowsiness and some N1 sleep. There was no bladder or bowel incontinence.

Treatment with psychotherapy was initiated, with the goal being to re-establish a relationship with the parents, especially the father. At 2- and 6-month follow-up, the episodes had ceased.

Case 3

A 16-year-old male was admitted to a psychiatric hospital with a 1-month history of unusual sleep-related behaviors.[7] There was a major, sustained trauma history. An acrimonious parental divorce occurred at age 4 years in the context of domestic violence. He then had regular visits with his father for 7 years and was subjected to repeated physical and emotional abuse. At age 11 years he was diagnosed with post-traumatic stress disorder. At age 13, the mother was granted full custody, and the boy had no further contact with the father. He experienced panic attacks and fear of being kidnapped by father.

There were fainting episodes followed by tonic-clonic–like movements that were diagnosed as psychogenic nonepileptic seizures by a neurologist.

A more recent major stress history began 3 months prior to the onset of the nocturnal episodes, marked by an increasingly adversarial relationship with the staff at his school, with multiple points of conflict.

Details of the 4 sleep-related episodes during the month before admission are as follows:

- First episode: he shaved part of his scalp, without subsequent memory, but he had a "dream" of needing to enter the witness-protection program after testifying against his father in court.
- Second episode: he was in an altered state "with an intense stare" and did not recognize his mother.
- Third episode: he shaved part of his scalp without recall.
- Fourth episode: he awakened one morning with a painful cut on his arm and a bloodied knife in the kitchen, for which he had no memory.

Sleep evaluation included sleep deprivation and auditory stimuli during N3 sleep without eliciting any complex motor behaviors. There were 4 uneventful N3 sleep arousals. Notably, treatment with clonazepam worsened symptoms, with increased frequency and severity of behaviors, including violence: punching walls with his fist, stomping through the ward, throwing a microwave on the floor; and smashing his insulin pump. After each episode, he fell asleep and woke up in the morning with bruises and amnesia for events.

There were also 2 episodes of prolonged unresponsiveness, one following a wall-banging episode during the night. During 1 episode while ostensibly asleep, there was sustained EEG wakefulness. Clonazepam was discontinued.

The authors stated that "converging data suggested that he was not suffering from a parasomnia." His nocturnal episodes were diagnosed as dissociative episodes.

Case 4

A 17-year-old female was admitted to a hospital from an emergency room after jumping from the third floor of her family's house, sustaining fractures to the pelvis and legs.[8] She had no recall of the event. The family reported that, in the evening, she went to her room to go to bed. Twenty minutes later she left her room to go upstairs where her younger brother witnessed her jumping from a window while waving goodbye, and without speaking or expressing any emotion. Medical and neurological testing was normal, along with negative toxicology results. Polysomnography with extended EEG montage was performed after prolonged sleep deprivation, and auditory stimuli were introduced during N3 sleep. The results found no epileptic activity or evidence of parasomnia. A psychiatric consult, which included interviews with the patient and with her family, did not detect depressive, anxiety, or psychotic symptoms. The family reported a daytime history of episodes at home or at school when the girl would become unresponsive, with very little reaction to questions from those around her, and accompanied by an astasia-abasia gait.

The patient recalled an incident at the age of 5 when she fell off a bicycle, which left her with a scar on her face around the chin, that, in her estimation, prevented her from blossoming and "feel beautiful." The diagnostic formulation for the suicide attempt, in the absence of any neurological disorder, parasomnia history, or other psychiatric disorder (apart from conversion reactions) that could explain the suicide attempt, was that of SRDD.

Case 5

A 39-year-old female had a trauma history involving severe childhood abuse.[9] She had sought treatment elsewhere for episodes of intense anxiety while awake, with seizure-like events; tremor-like movements of the jaw, arms, legs, and whole body; followed by hair pulling and putting the pulled hair into an ear, as a complex ritual that ended with either swallowing the hair or throwing it away. An EEG and brain computed tomography scan were normal. Treatment with sertraline, clonazepam, and supportive psychotherapy resulted in substantial improvement.

Two years later she was referred to a sleep clinic because of morning awakenings with holding her hair in her hands, and with hair spread all over the bed. Her daughter had observed hair pulling during the night for which the patient was always amnestic, but with some recall of hair-pulling dreams. She complained of insomnia, nightmare-related psychomotor agitation, and violent behavior during sleep.

vPSG documented an episode 90 minutes after sleep onset, with an EEG arousal followed by the behavioral sequence 90 seconds later. She "selected one hair and pulled it from her scalp; she then put the hair in front of her face and tried to straighten it up; afterwards, she placed it inside her left ear for a few seconds before finally throwing it away." There were a total of 7 similar ritualistic hair-pulling events throughout the night—all arose from EEG wakefulness, with α rhythm preceding the episodes. The study did not show obstructive sleep apnea or periodic leg movements. An episode with different semiology from EEG wakefulness was noted after 6 hours, 50 minutes from sleep onset, characterized by flailing movements, beginning with legs, then arms, and then whole body, and finally head-banging. Moaning and crying were present during the entire 143-second episode. There were no EEG abnormalities. These "non-epileptic seizures" were considered to be a manifestation of SRDD.

Treatment consisted of psychotherapy and involvement in a self-help group, with remission after 2 years. The authors commented that "even though SRDD is no longer considered as a parasomnia in the [ICSD-3], it is still included in the differential diagnosis of disorders of arousal and REM sleep behavior disorder."

Case 6

An adult male (age not reported) was referred to a psychologist with expertise in clinical hypnotherapy on account of sleep violence: "His live-in girlfriend reported that once or twice a week she was awakened by him swearing at her and making rough sexual advances. If she resisted, he would slap her and rape her while growling misogynist epithets. During one of these episodes, he had choked her hard enough to leave bruise marks on her throat. She reported that his eyes were open with an odd unfocused stare at these times."[10] He was amnestic for these episodes. His ex-wife reported the same sleep-related behaviors. His father "had been an extremely brutal man," but he had little memory of his childhood. However, "the few incidents that he did recall included physical abuse of himself and witnessing his father being sexually violent toward his mother and other women." vPSG documented abnormal behavioral episodes during EEG wakefulness, confirming the diagnosis of SRDD. He was amnestic for his nocturnal behaviors in the sleep laboratory.

Case 7

A 36-year-old female was referred for sleep evaluation on account of a dramatic and injurious episode of complex behavior during sleep, when she was awakened by her 5-year-old

daughter at around 9 AM.[11] The room was in shambles, with drawers pulled out, and the curtains and bed sheet on the floor. She found blood in the shower and bruises on her shin and elbows. In her daughter's bedroom the curtains were pulled down and the mattress had been dragged to the floor. She determined that this incident must have occurred after 6 AM after her husband left for work.

A notable trauma history was reported, as she had recently been robbed while asleep during a vacation from which she had just returned. This recent trauma, coupled with being left alone at home (with a young child) after her husband left for work at 6 AM, presumably triggered the episode.

vPSG, with 16-lead EEG detected mild obstructive sleep apnea, with an apnea-hypopnea index of 8.8 events/h and oxygen desaturations down to 87% (subsequent continuous positive airway pressure titration study documented oxygen hemoglobin normalization at 7 cm H_2O pressure). There was preserved rapid eye movement (REM)–atonia. No complex behaviors were found. EEG showed a normal background, with nonspecific, rare, left temporal slowing without epileptiform discharges. No clinical correlate was suspected by the consulting epileptologist. She had a remote history of sleepwalking as a child, but none as an adult. Therefore, SRDD was the most likely diagnosis to explain her prominent episode that emerged in the context of recent trauma occurring during sleep.

Continuous positive airway pressure therapy was initiated and counseling to avoid hypnotics, sleep deprivation, and alcohol. No recurrent episode occurred with follow-up to 1 year.

Case 8

In a case series of 5 patients with parasomnia overlap disorder (ie, REM sleep behavior disorder [RBD] and non-REM [NREM] parasomnia/other parasomnia),[4] 1 patient (case 4) may have had either RBD and SRDD, or else RBD, SRDD, and NREM parasomnia (sleepwalking).[12] This case involved a 36-year-old woman who presented with a 5-year history of unusual nighttime behaviors. She reported nocturnal ambulation every night and often left the house. She also smoked, cleaned, and engaged in various complex activities, for which she was always amnestic the following morning. She also had occasional dream-enacting behavior with yelling and flailing of her arms, but she never left the bed or injured herself or her bed partner during these episodes. She had a history of severe anxiety that was exacerbated after her ex-husband physically abused her. There was no history of alcohol or drug abuse.

vPSG documented RBD with loss of REM atonia and talking and movements in stage R. There was also an episode of partial arousal arising from stage N2 when she sat at the edge of the bed. Clonazepam therapy at doses as high as 4 mg at bedtime controlled her nightmares and RBD, but her nocturnal ambulation (presumed sleepwalking) persisted, and also did not respond to subsequent trials with clomipramine, melatonin, and ramelteon. Hypnosis was considered ill-advised due to her history of physical abuse and severe anxiety.

This patient may have had SRDD with RBD (as another category of parasomnia overlap disorder), due to past physical abuse, lack of response to conventional therapies, and nightly frequency of extensive nocturnal ambulation. However, the only argument against this proposed diagnosis is the fact that her events arose during electrographic N2 sleep and not during wakefulness, which would support a diagnosis of NREM parasomnia. As already stated, it is possible that she had conventional parasomnia overlap disorder (RBD and NREM parasomnia) together with SRDD.

Case 9

A 55-year-old man presented with a 15-year history of increasingly frequent sleep-related paroxysmal events that first emerged during a "mental breakdown."[13] These events were characterized by a terrifying "sudden intense bang or hit on the right side of the head" that awakened him and occurred within an hour of sleep onset. He resumed sleep within a few minutes. Twelve years later, because of the persistence of these episodes, a 48-hour vPSG captured 2 events, during nocturnal and diurnal sleep, emerging from N2 sleep, leading to the diagnosis of exploding head syndrome.[4] Three weeks later he developed additional complex nocturnal symptomatology that was determined to be wakeful paroxysmal nonepileptic seizures, with "dissociative convulsions." In the discussion, the authors considered "whether EHS [exploding head syndrome] and PNES [paroxysmal nonepileptic seizures] are simply different manifestations of a dissociative disorder triggered by stress?" Although no traumatic events were mentioned in this report, there was major psychopathology with multiple categories of symptoms uncovered by psychiatric evaluations.

Additional cases

Additionally, 25 other cases of "nocturnal dissociative disorders" have been reported in an abstract,[17] (including 8 patients from the initial report on SRDD[1]) with presentation to a sleep disorders center on account of sleep-related injury (n = 21) and/or sleep phobia (n = 9). All patients completed a comprehensive questionnaire, clinical examinations, overnight vPSG monitoring (with expanded EEG montage), and also next-day multiple sleep latency testing in the 16 patients who complained of excessive daytime sleepiness. There was female predominance (84% [21/25]), with a mean ± SD age of 32 ± 7 years. A history of abuse was present in 92% (23/25) of the patients (sexual [18], physical [17]). Nightly dissociative episodes occurred in 56% (14/25). There was vPSG documentation of SRDD in 48% (12/25), with behavioral spells arising from EEG wakefulness, which often were protracted re-enactments of past abuse. The other 52% (13/25) of patients without vPSG confirmation displayed frequent daytime dissociative spells, and their vPSG studies did not reveal any intrinsic sleep disorder that could account for their abnormal sleep behaviors.

All of these patients satisfied diagnostic criteria for dissociative disorder, including 40% with dissociative identity disorder (multiple personality disorder). Mood disorders were present in 88% (22/25) of patients and post-traumatic stress disorder in 64% (16/25) of patients. The mean score on the Dissociative Experiences Scale was 29.4 ± 23.7 (post-traumatic stress disorder range) in the 13 patients who completed the Dissociative Experiences Scale. The Beck Depression Inventory mean score was 29.2 ± 10.1 (severe depression range). Conversion narcolepsy was diagnosed in 8 patients who had a

complaint of excessive daytime sleepiness, the presence of ≥2 narcoleptic tetrad symptoms, but without any multiple sleep latency testing confirmation of excessive daytime sleepiness. Another published abstract reported on dissociative disorder with hypersomnia mimicking symptoms of narcolepsy in 4 patients (2 with multiple personality disorder).[18] All patients had been subjected to "overwhelming physical and sexual abuse before the age of six." Therefore, dissociative disorders, including SRDDs, carry an increased risk for narcoleptic somatoform disorder.

Eight other cases of SRDD were reported in a study of 29 patients with dissociative disorders.[19] Although 2 consecutive overnight vPSGs were performed in these 8 patients, and SRDD was diagnosed and distinguished from NREM parasomnias and REM sleep behavior disorder, no vPSG findings for any patient were presented with the results, which is why these patients are not included in **Table 1** (although the authors did state in their conclusion that "SRDD arises from a period of well-developed wakefulness during the sleep period"). The clinical profile of these SRDD cases closely matches the profile of the other cases presented above—5 of 8 females: mean age of 22.6 ± 5.2 years; mean age of onset of 19.6 ± 4.7 years; history of sexual abuse, 5 of 8 patients; history of physical abuse, 4 of 8 patients; violent behavior during sleep, 8 of 8 patients (including 2 patients attacking their partners in a manner indicating homicidal intent); self-mutilating behavior during sleep (cutting, burning, hair-pulling, etc), 4 of 8 patients; frequent nightmares, 6 of 8 patients; major depression, 4 of 8 patients; suicide attempts, 3 of 8 patients; mean Dissociative Experiences Scale score, 36.4 ± 16.6 (comparable to the mean Dissociative Experiences Scale score in the series of 25 patients with SRDDs described above[17]). Two patients had experienced transitions from one personality to another personality during sleep. The authors proposed the apt term "pseudo parasomnia" with regard to SRDD.

An early abstract on the diagnostic value of split-screen vPSG in 105 patients documented a child with "psychogenic episodes" that presumably represented SRDD.[20]

Therefore, to our knowledge, the total number of reported SRDD cases is 46, including the 20 cases listed in **Table 1**, and the other 26 cases cited above.[17,19,20] Finally, a novel has been published featuring a lead character with SRDD.[21]

DISCUSSION

Cases of SRDD continue to be reported, with objective confirmation by vPSG/EEG in more than half the cases, and with all cases demonstrating congruent daytime and nocturnal dissociative symptoms, as just documented. Furthermore, in case 4,[8] even though the authors did not document any episode during vPSG monitoring, they had followed the sleep-deprivation protocol, with auditory stimuli presented during N3 sleep, for provoking a very high yield of episodes in NREM parasomnia patients, as reported by the Montreal group.[22] Therefore, the lack of any parasomnia episode provoked by this sleep-deprivation protocol was strong evidence against an NREM parasomnia, which was the principal differential diagnosis for this patient.

Also, either a lack of response to clonazepam therapy, or exacerbation of SRDD with clonazepam therapy, continues to be reported, which was also reported in the initial case series on SRDD,[1] and is a distinguishing feature from NREM parasomnias that usually respond to benzodiazepine therapy.[23] Pertinent issues related to nocturnal dissociation have been discussed.[24,25]

The distinction between psychogenic dissociation,[3] including sleep-related psychogenic dissociation as found in SRDDs, and physiologic sleep-related dissociation, as found in narcolepsy, RBD, and various other sleep disorders,[2,26] needs to be underscored in order to avoid confusion over the term "dissociation".

We now present our reasons for reinserting SRDDs in the next edition of the ICSD, and in the parasomnias section:

1. SRDD is a sleep-related behavior (and experiential) disorder, and so on that basis alone it belongs in the parasomnias section of the ICSD ("Parasomnias are undesirable physical events or experiences…"[4]). Also, there is overlap among the behaviors found with SRDDs and the behaviors found among various parasomnias, and so the complete set of differential diagnoses for abnormal sleep-related behaviors should be included in the parasomnias section of the ICSD.
2. Even though episodes arise from EEG wakefulness (after variable periods of sleep, or during wake–sleep transitional states), SRDD is still a sleep-related behavioral disorder. The associated daytime dissociate disorder in almost all patients with SRDD corresponds to other conditions contained in the ICSD-3 that have both daytime and nocturnal manifestations, such as restless legs syndrome, narcolepsy, and other hypersomnias of central origin.
3. Even though SRDD is technically a "psychiatric disorder," it is nevertheless what can be called a "psychiatric parasomnia" that is situated at the interface of sleep medicine and psychiatry.
4. Sleep clinicians, when encountering a patient with SRDD (with strange and even bizarre nocturnal behaviors), will first turn to the parasomnias section of the ICSD as the first source of information about what their patient might have in pursuit of the differential diagnosis. And so the absence of SRDDs in the parasomnias section will hinder the proper diagnostic process—and therapeutic intervention—to the detriment of patient care. The ICSD is intended to be a useful, practical, patient-centered resource of clinical-scientific diagnostic information for clinicians managing patients with sleep problems. In fact, SRDDs should also be included in the differential diagnosis for all disorders involving complex behaviors rising out of sleep—viz the motor parasomnias. The ICSD-3 has the anomalous situation of listing SRDDs as part of the differential diagnosis for disorders of NREM arousal (p. 237), but without this diagnostic entity actually being included in the ICSD-3.
5. The literature on SRDDs keeps expanding, as documented above, and so even though it is a rare

condition, it is a bona fide condition that is still being diagnosed, with diagnostic criteria included in the ICSD-2, and in the DSM-5 for dissociative disorders. Unfortunately, the citations have recently been for the ICSD-2 and not for the ICSD-3.

6. There is a great deal we still do not know about SRDDs, such as whether there are factors related to sleep that make some people with dissociative disorders more susceptible to episodes during the sleep period, as previously discussed.[19] If there are, this could potentially open new avenues for treatment. Gathering data on these and other questions and advancing our knowledge would be enhanced and encouraged if SRDDs were an official ICSD diagnosis but would be discouraged if it is omitted.
7. Parasomnia overlap disorder, a recognized variant of RBD and disorders of NREM arousal in ICSD-3, has a growing list of expanded categories, including the probable inclusion of SRDD with RBD and sleepwalking in a reported case.[12] This is another reason for having official recognition of SRDDs in the ICSD.
8. Review articles in the fields of psychology and related fields discuss SRDDs while referencing the ICSD-2.[27] Future review articles that include discussions on SRDDs should cite the current version of the ICSD.
9. There is an expanding literature on what can be called "parasomnia borderland" conditions involving sleep behavioral (and experiential) disturbances associated with post-traumatic stress disorder, the proposed trauma-associated sleep disorder, and the extent of their overlap with RBD (and isolated REM-without-atonia), NREM arousal parasomnias, possibly REM arousal parasomnias,[28–36] and nonepileptic seizures during sleep as a possible manifestation of SRDDs.[37] Since trauma is a universal predisposing and precipitating factor for the emergence of SRDDs, this condition merits inclusion within this parasomnia borderland as a nodal point in a spectrum of pathological sleep behaviors (and experiences), and their manifestations and determinants. As the broad-based research field moves forward among these partially overlapping conditions, we can anticipate further differentiation among trauma-related sleep behavioral and experiential disorders, to be contained in future editions of the ICSD. Therefore, SRDDs need to be positioned in the parasomnias section of future editions of the ICSD. Furthermore, systematic screening of abuse (physical, sexual, and/or emotional) in the intake questionnaire of all patients presenting to a sleep clinic is encouraged, based on the findings of a preliminary study in which 37% of 125 consecutive adult patients (with a broad spectrum of sleep disorders) endorsed an abuse history.[38]
10. Inclusion of SRDDs in the ICSD will encourage the reporting of additional cases by sleep physicians, given the legitimacy of its inclusion in the ICSD as a bona fide sleep-related disorder.
11. Given the potential forensic consequences related to SRDDs, it is important to include SRDDs in the official sleep medicine nosology for possible use in court testimony. In this regard, for admissibility of expert testimony in a court of law, a medical condition must be formally recognized by international scientific peer review as most often reflected in the appropriate medical society's published diagnostic manuals. In contrast, "novel" conditions may be perceived by the court to be based upon unreliable scientific methodology and are thereby unlikely to fulfill the Daubert or Frye standards for admissibility.[39] With regard to the 17-year-old female who jumped from a third-floor window at her home discussed above,[8] if she had died, then there may have been a forensic consequence related to a presumed suicide attempt, when in fact, it more correctly could have been a case of "parasomnia pseudo-suicide,"[40] as a "psychiatric parasomnia" that could be referenced in the current ICSD. Sleep-related violence associated with dissociative psychopathology[19,41] could also carry forensic consequences and be included among the disorders represented in sleep-related medical-legal cases.[42]

CONCLUSIONS

Given the cases, data, and considerations just presented, it should be evident that SRDDs are embedded within the field of sleep medicine and should be represented in its official nosology, in the parasomnias section.

ABBREVIATIONS

DSM, *Diagnostic and Statistical Manual of Psychiatric Disorders*
EEG, electroencephalography
ICSD, *International Classification of Sleep Disorders*
NREM, non–rapid eye movement
RBD, REM sleep behavior disorder
REM, rapid eye movement
SRDD, sleep-related dissociative disorder
vPSG, video-polysomnography

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ACKNOWLEDGMENTS

Danielle Becker, Chief Librarian at the Health Sciences Library, Hennepin County Medical Center, conducted the literature search, with the assistance of Paul Reid in retrieving the publications. Dennis Haley, DDS, and Gloria Ghedini translated reference 8 from French to English (English translation is available from author C.H.S. by request).

SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication September 24, 2020
Submitted in final revised form November 24, 2020
Accepted for publication November 24, 2020
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DISCLOSURE STATEMENT

All authors have seen and approved the manuscript. Work for this study was performed at the institutional affiliations listed above. MCB is Medical Director–Pulmonary/Sleep Services, Corner Home Medical, New Hope, MN (of no relevance to this manuscript). NK is a Principal Investigator for the Autonomous Robotic Oral Appliance for Treatment of Obstructive Sleep Apnea NIH Center for Accelerated Innovations: Technology Development Program (of no relevance to this manuscript). Co-investigator with effort (ie, a percentage of his total clinical effort as faculty at the University of Michigan is supported by this research) of a clinical research study funded by Apple (of no relevance to this manuscript). ASE reports no conflicts of interest.