Update on Sleep Related Eating Disorder, Sexsomnia, and Forensic Parasomnia Issues

Carlos H. Schenck, M.D.

Minnesota Regional Sleep Disorders Center
Hennepin County Medical Center and
University of Minnesota Medical School

Tallahassee Memorial CME Sleep Symposium
February 24, 2018
Disclosure

Consultant, Axovant Medical Sciences, Inc.

(No relevance to this presentation)
Sleep-Related Eating Disorder (1991)


Data on 38 Patients at the Minnesota Regional Sleep Disorders Center with Sleep-Related Eating Disorder

- During a 7 year period (1985-1992), 38 cases of pathological sleep-related eating were diagnosed among adult clinical referrals.
- Full clinical evaluations and polysomnographic monitoring.
Major Findings (N=38)
(Schenck CH, et al. Sleep 1993; 16: 457-466)

- High-caloric nocturnal binging: 68%
- Careless, sloppy, nocturnal eating: 71%
- Level of Consciousness during nocturnal eating:
  a) Partial Consciousness: 53%
  b) “Total” Unconsciousness: 32%
  c) “Full” Consciousness: 15%
Weight Gain From SRED (N=38)

- Mean weight gain from nocturnal eating: 12.6 ± 8.2 kg (range: 3-32)

- Overweight frequency from nocturnal eating, using Body Mass Index criteria: 43.4%
SRED--Comments

• Multiple nightly feedings (up to 8 times) often occurred (as observed by others).

• Eating was distributed across the sleep cycle in most cases (as observed by others).

• Sweets, pasta, peanut butter and milk are preferred food items: “Comfort Food”.

• Fruits and vegetables are rarely consumed.

• Alcohol rarely consumed
SRED—Comments

- Hunger is virtually never reported: therefore, the compulsion to eat is not a hunger-driven behavior.
- Bizarre eating: buttered cigarettes; coffee grounds & egg shells; frozen pizzas/pies; Elmer’s glue; ammonia cleaning solutions; etc.
SRED—Comments

• Virtually all patients had accurate, non-distorted appraisals of body size, shape, weight.

• No body image distortion.

• No purging.
Co-Morbidities of SRED (N=38)

60.5%: Sleepwalking (SW)
7.9%: SW-combined (PLMD, Circadian Rhythm Disorder, Amitriptyline)
13.2%: RLS/PLMD
10.5%: OSA (including n=1 with PLMD)
5.3%: Eating disorder (bulimia nervosa)
2.6%: Triazolam abuse

Schenck CH et al. *Sleep* 1993
Sleep Related Eating Disorder

• Appears to be a “Final Common Pathway Disorder” that can emerge from a broad range of clinical conditions.

• Once SRED emerges, regardless of its origin, SRED demonstrates a typical longitudinal course.
Sleep-Related Eating Disorder (SRED)

Classified as a Parasomnia

International Classification of Sleep Disorders, 3rd Edition 2014
• Female-predominant disorder: 60%-83% of patients in reported series.
• Mean age of onset: 22-40 years.
• Nightly frequency of nocturnal eating: very common (>50% of reported cases).
• Overweight/obese (BMI criteria): 50%
• Hunger is virtually never reported
SRED—Diagnostic Criteria (ICSD-3)

A. Recurrent episodes of dysfunctional eating that occur after an arousal from sleep, during the main sleep period.

B. One or more of the following must be present with the recurrent episodes of involuntary eating:
Adverse Health Consequences From SRED

1) Excessive weight gain/obesity.

2) Destabilization (or precipitation) of diabetes mellitus (type I or II).

3) Hypertriglyceridermia/Hypercholesterolemia.

4) Allergic reaction from carelessly eating foods to which one is allergic.

5) Dental problems: tooth decay & chipped teeth.

6) Secondary depression from loss of control.
C. There should be at least partial loss of conscious awareness during the eating episode with subsequent impaired recall.
• Sleep Related Eating Video will be inserted here for my presentation.
“Association of Restless Legs Syndrome With Nocturnal Eating: A Case-Control Study”

Movement Disorders 2009; 24 (6): 871-877


(Department of Neurological Sciences, University of Bologna, Italy)
• N=100 RLS pts living in northern Italy (Emilia-Romagna) and N=100 matched controls randomly selected from the general population.

• Two telephone interviews: questions about nocturnal eating, sleep quality, socio-demographics, health status, & psycho-pathological traits.
Results

• SRED: 33% (RLS pts) vs. 1% (controls) ($p<0.001$)

• Medication use and pathological Maudsley Obsessive-Compulsive Inventory (MOCI): more prevalent in RLS-SRED patients compared to RLS patients without SRED.

• Use of dopaminergic or hypnotic medications in RLS patients did not correlate with the presence of SRED.
Conclusion

• A (strong) association of RLS with SRED was demonstrated.

• Prospective studies are needed to establish the mechanisms underlying such association, and whether it is causal.
Comments

• RLS patients should be questioned for SRED, both initially and longitudinally.

• SRED patients should initially and longitudinally be carefully questioned for RLS—including family history.
“Restless Nocturnal Eating: A Common Feature of Willis-Ekbom Syndrome”

Michael J. Howell MD
Carlos H. Schenck MD

“They often have to get up and walk, ‘like a caged bear,’ to quote one of my patients, or they go into the kitchen and get something to eat.”

Methods

- 88 RLS patients and 42 insomnia (INS) patients—consecutive series.
- RLS & INS patients were systematically questioned for the presence of nocturnal eating (NE) and SRED.
Results

RLS vs. INS patients, NE: 61% vs. 12%
RLS vs. INS patients, SRED: 36% vs. 0%
(P<0.0001 for both comparisons)
Results

- These findings were not caused by arousal frequency:
- INS patients had more prolonged nightly awakenings (93%) vs. RLS patients (64%) (P=0.003).
Results

- Patients on Hypno-Sedative Medications:
- Amnestic SRED/Sleepwalking—

  More common in RLS (80%) vs. INS (8%) 
  \( (P<0.0001) \)
Results

• NE and SRED in RLS were not secondary to dopaminergic therapy:

• RLS patients had a substantial drop in the frequency of NE after dopamine agents were started (from 68% to 34%; P=0.0026).

• Also, there were no cases of dopaminergics inducing de novo NE.
Conclusions

• It is possible that nocturnal eating is another (“non-motor”?!?) component of the symptom-complex of RLS.

• Nocturnal eating, including SRED, can emerge concurrently with frank RLS onset, or after RLS onset.

• Or, SRED can emerge years before the frank onset of RLS.
“Narcolepsy with cataplexy associated with nocturnal compulsive behaviours: a case-control study.”

*Sleep* 2011; 34 (10): 1365-1371.

Palaia, V., Poli, F., Pizza, F., Antelmi, E., et al.
• N=65 Narcolepsy-Cataplexy patients
• N=65 controls

**Statistically Significant Differences:**

• Sleep Related Eating Disorder: 32% vs. 2%
• Nocturnal Smoking: 21% vs. 0%
• Restless Legs Syndrome: 18% vs. 5%
• Males vs. Females (SRED/NS) 71% vs. 39%
Zolpidem--SRED

“Amnestic Sleep-Related Eating Disorder Associated With Zolpidem”

Sleep Medicine 2002; 3: 323-327
Morgenthaler TI, Silber MH

N=5: Developed SRED with zolpidem therapy
N=5: Restless Legs Syndrome
N=3: Obstructive Sleep Apnea
N=2: Sleepwalking
Zolpidem--SRED

• All 5 patients had cessation of nocturnal eating when:

  1) Zolpidem was discontinued.

  1) Their associated sleeping disorders were effectively treated (especially RLS).
Medication-Induced SRED

- Many sedative-hypnotic medications (including antidepressants, antipsychotics, mood stabilizers) have been reported to induce SRED—but
- Zolpidem appears to carry the greatest risk.
- What is so unique about zolpidem?
SRED--Treatment

1. Treat any comorbid sleep disorder (e.g. nasal CPAP for OSA; or dopaminergics/opiates/benzodiazepines for RLS/PLMD

2. Eliminate any triggering or aggravating medication:
   a) zolpidem (immediate/sustained release)-most frequently implicated medication.
SRED--Pharmacotherapy

1. Topiramate
“Efficacy and Tolerability of Open-Label Topiramate in the Treatment of Sleep-Related Eating Disorder: A Retrospective Case Series”

Winkelman JW.

*J Clin Psychiatry* 2006; volume 67

- 68% (17/25) positive response rate
- Mean dose, 135 mg qHS (range, 25-300 mg)
- Mean follow-up, 11.6 months (range, 1-42 m.)
- Mean age, 44 ± 12 years; 76% female
- Tolerability issues
Topiramate Therapy of Sleep-Related Eating Disorder (SRED)
Schenck CH, Mahowald MW
Sleep 2006; 29(Suppl): A268

- 64.7% (11/17) efficacy: with weight loss
- Females: 81.8% (9/11)
- Mean age: 44 years
- Duration of SRED: 3-45 years
- Mean follow-up: 1.8 years (6 months-3 years)
- Mean dose: 102 mg hs (range, 50-200 mg)
- Mean weight loss: 9.2 kg (range, 5.9—21.4 kg)
SRED—Treatment With Topiramate

- Starting dose: 25 mg HS
- Increase by 25 mg HS every 5-7 nights (and not more frequently to minimize emergence of paresthesias)
- Typical therapeutic dose: 50-150 mg qHS
- Maximum recommended dose: 300-400 mg HS (rarely needed or tolerated)
SRED—Summary of Pharmacotherapy (monotherapy or combined therapy)

• Sleepwalking and Idiopathic Subtypes
• RLS or OSA patients with persistent SRED despite control of their comorbid sleep disorders:
  
a) Topiramate
b) Dopaminergics
c) SSRIs (sertraline, fluoxetine)
d) Bupropion
Sexsomnia: Terms

1. Sexsomnia
2. Sleepsex
3. Atypical Sexual Behavior During Sleep
3. Sleep Related Abnormal Sexual Behaviors (ICSD-3)—Clinical Subtype of Disorders of Arousal from NREM sleep (primarily Confusional Arousals; also SW)
Sexsomnia: Definition

1. *Problematic* sexual behaviors emerging during sleep.
2. Often chronic, recurrent.
3. ICSD-3: “often has major interpersonal, clinical and occasional criminal consequences.”
Sexsomnia

Problematic Sexual Behaviors

Masturbation

Sexual Fondling

Spontaneous orgasms

Sexual Intercourse/at tempted intercourse

Sexual vocalizations/verbalizations

(“sleepsextalking”)
“Sleep and Sex: What Can Go Wrong? A Review Of The Literature On Sleep Disorders and Abnormal Sexual Behaviors and Experiences”


Schenck CH, Arnulf I, Mahowald MW
Schenck CH

“Update on Sexsomnia, Sleep Related Sexual Seizures, and Forensic Implications”

NeuroQuantology 2015; 4: 518-541
“Update on Sexsomnia, Sleep Related Sexual Seizures, and Forensic Implications”

*NeuroQuantology* 2015; 4: 518-541

Schenck CH

- Since the 2007 Sleep and Sex report in *Sleep*:
- 18 additional Sexsomnia cases reported from 9 countries during 8 years (2007-2015):
- United States, Spain, Holland, Italy, France, Turkey, Australia, Brazil, United Kingdom
- N=49 cases in the world literature (thru 2015)
Sexsomnia
(31 published cases; 49 cases--update)
Males: 80.6% (n=25); 75.5% (n=37)
Females: 19.4% (n=6) ; 24.5% (n=12)

Age, mean (total): 31.9 ± 8.0 yrs; 34.8 ± 9.6 yrs
Duration: 9.5 ± 6.1 yrs ; 7.3 ± 5.8 yrs

Masturbation: 22.7% ; 23.4%
Sexual vocal/verbal: 19.3% ; 19.1%
Fondling bedpartner: 45.2% ; 36.7%
Sexual intercourse: 41.9% ; 48.9%
Sexsomnia (n=31; n=49)

Amnesia for sleepsex: 100%; 96%
Assaultive behaviors: 45%; 37%
Sleepsex with minors: 29%; 20%
Legal repercussions: 35%; 24%
vPolysomnography: 84%; 84%

Total #, parasomnias: 71; 103
Mean #, parasomnias/: 2.2±1.0; 2.1±1.2
patient (range: 1-5)
Final Diagnosis, Sexsomnia Etiology (n=31; n=49)

1. Disorder of NREM arousal*: 90%; 86%
1b. OSA (triggering CAs): 13%; 14%
   • (CAs in all but 3 patients who had SW)

2. RBD: 10%; 8%

3. Other conditions: 0%; 6%
Sexsomnia Treatment Efficacy (n=31; n=49)

1) Clonazepam: 91%; 86%
2) nCPAP: 100% (6/6)
3) Other therapies
11 Novel Findings: Sexsomnia

• From 39 additional published cases (2007-2017)
• N=18 cases (2007-2015)
• N=21 cases (2016-2017)
• N= 70 cases (total # of Sexsomnia cases in the world literature)
11 Novel Findings: Sexsomnia

1. Parasomnia Overlap Disorder—Sexsomnia:
   2 cases (man, woman)

2. Parasomnia Overlap Disorder + OSA—
   Sexsomnia: 1 case (man)

3. Circadian rhythm disruption-Sexsomnia: 2 men

4. Medication (SSRI) induced sexsomnia—1 man

5. Sexsomnia emerging with PD and dopaminergic therapy—4 patients
6. Spontaneous sleep orgasms—2 women
7. Sexual dreams during sleep—2 men
8. Sexual trauma in adolescence—2 women
9. Familial sleep—father and son; mother and daughter
10. Novel pharmacotherapies—2 women
11. OSA—Sexsomnia—successful Rx with Mandibular Advancement Device: 2 men.
References

• Meira e Cruz M, Soca R. Sexsomnia and REM-predominant obstructive sleep apnea effectively treated with a mandibular advancement device. *Sleep Science* 2016; 9: 140–141.

“Sexual Behaviors During Sleep Associated With Polysomnographically Confirmed Parasomnia Overlap Disorder” [2 cases]

*Sleep Medicine* 2011;12: 523-528

Cicolin A, et al. (Torino, Italy)

[5 NREM/REM Motor Parasomnias: each patient!]
• **Case 1:** 60 y.o. married female presenting with RBD (4 yrs), and childhood-onset, lifelong Sleepwalking and Sleeptalking; and some SRED episodes.

• **PSG:** RBD and NREM parasomnias.

• **PSG:** sexesomnia episode from N3 sleep.

• Therefore, 5 motor parasomnias (NREM/REM) in the same patient!
Obstructive sleep apnea triggering sleep violence

“A Case of Violent Non-REM Parasomnias That Resolved With Treatment of Obstructive Sleep Apnea”


- 54 year old female: no childhood parasomnia.
- 5 year history of parasomnias (day and night)
- Sleep-driving from naps: 5 times monthly!!!!!
- Sleepwalking barefoot in the snow.
• Found by police wandering in a nearby town

• Most disturbing incident: chopped up her cat on a cutting board in the kitchen, awakened at 6 a.m. with hands covered in blood and found the cat’s remains next to the trash can.

• Sleep history: loud snoring, excessive daytime sleepiness, weight gain.

• Polysomnography: severe OSA with marked $O_2$ desaturation, controlled with nCPAP.

• 4 month follow-up: no parasomnia recurrence.
• Since parasomnias emerge from sleep, there is no conscious intentional basis to the parasomnia behaviors: non-culpability for a criminal act.

• Swedish Appeals court (2016): “If [the accused] was in a state of sleep at the time of the [sexual] act, he was not aware of his own actions and should then be acquitted of the charges based on his lack of intent.”
• Alcohol intoxication should disqualify the use of the Parasomnia/Sleepwalking/Sexsomnia Defense.

• The matter of a Parasomnia Defense occurring in the context of alcohol intoxication needs to be more critically and systematically addressed by the courts.
“Can you rape in your sleep?”

“Kan man voldtage i søvnne?”

Nola Grace Gaardmand
April 27, 2013

“Dagbladet Information”
(Danish newspaper)

http://www.information.dk/458689
Forensic Sexsomnia Case: Copenhagen

- 32 year-old man sexually assaulted two 17 year-old females while they were asleep.

- He was acquitted, making Danish legal history: first time the “Sexsomnia Defense” was successfully used in a criminal trial.
“The Glostrup District Court cleared a 32-year-old man of ‘sex crime charges.’

Two years previously, in 2011, the man had fondled two 17-year-old females while they were sleeping in his suburban Copenhagen apartment.”

Past history: Sexsomnia (many times) with prior girlfriend—who was the older sister of one of the 17 year old girls who was fondled.

Prior girlfriend testified on his behalf: powerful.

They were “like family” and remained so after the sexual fondling episode.
3 Medical-Legal Cases of Sexual Assault During Sleep: Sweden (non-jury trials)

• Swedish Courts: Sleep expert is an *Amicus curiae* (friend of the court); non-adversarial use of a sleep expert, who is paid for his time, and without any compensation related to the outcome of the case.

• Jerker Hetta, M.D.: *Amicus curiae*
• **Case 1**: Mikael Ostman Halvarsson: accused of rape.

• **District Court**: guilty of rape ("reasonable grounds" not found for the rape to have occurred during a state of sleep).

• **Appeals Court**: overturned the District Court ruling: not guilty.
• Appeals Court: “A state of sleep [during the sexual act] does not appear as unreasonable enough to be disregarded.”

• “Nor has the objection been disproved by the prosecutor”

• “This means that Mikael Ostman Halvarsson acted with intent.”

• “The charges shall therefor be dismissed.”

• District Court: guilty of child rape:

“The court finds that the likelihood that Urban Naslund has had intercourse with A while he slept is so low, that the court may disregard this possibility."
• “We therefore find it proven beyond reasonable that Urban Nasland did have intent to have vaginal intercourse with A.”

• Range of sentencing for child rape in Sweden: starts at two years in prison [40 years in some districts in the state of Texas, USA].

• Urban Nasland: sentenced for 2.5 years in prison.
• **Appeals Court**: non-guilty of child rape (reversal):

• “The claim of Urban Naslund that he slept during the events as charged has not been refuted by the prosecutor.”
• **Case 3**: Fredrik Jespersson: accused of rape.

• **District Court**: not-guilty of rape.

“It is not entirely unlikely that FJ acted in his sleep. The entirety of the circumstances does not exclude this possibility either.”

• “The district court finds that his statement that he lacked intent cannot be entirely disregarded.”
“This therefore leads to the conclusion that Jespersson did not have the intent to wrongfully exploit the claimant’s sleeping state. The charges shall therefore be dismissed.”

Prosecution appealed (not possible in the US)

Appeals Court: upheld the prior dismissal of rape charge: not shown beyond a reasonable doubt that FJ had acted consciously with intent to commit his actions.
“Homicidal Somnambulism: A Case Report”

Sleep 1994; 17 (3): 253-264.


- Ken Parks, out of sleep one night in May 1987, drove 23 km and murdered his mother-in-law and attempted to murder his father-in-law in Toronto, Canada.

- Parks had “the Perfect Storm” of Sleepwalking risk factors.
He was acquitted on the basis of the Sleepwalking Defense.

This case made Canadian legal history: the first time the Sleepwalking Defense was successfully used in a murder trial.
• Discussion of Oregon sexsomnia case.
• Discussion of New Jersey sexsomnia case.
• Discussion of Israeli sexsomnia case.
Abstract

“Complex behaviors arising from the sleep period may result in violent or injurious consequences, even death. Those resulting in death may be erroneously deemed suicides.”
Sleep Forensics Associates

Carlos Schenck, MD
Minneapolis, MN, USA

Mark Mahowald, MD
Minneapolis, MN, USA

Michel Cramer Bornemann, MD
Minneapolis, MN, USA
Referrals to Sleep Forensics Associates (SFA)

10 YEAR REVIEW: 324 Cases


<table>
<thead>
<tr>
<th>Request Origination for Sleep Forensics Case Consultations (N = 324)</th>
<th>(N = 310)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td></td>
</tr>
<tr>
<td>EAST</td>
<td>27</td>
</tr>
<tr>
<td>SOUTH</td>
<td>54</td>
</tr>
<tr>
<td>MIDWEST*</td>
<td>111</td>
</tr>
<tr>
<td>WEST</td>
<td>117</td>
</tr>
<tr>
<td>Outside of USA</td>
<td>(N = 15)</td>
</tr>
<tr>
<td>England</td>
<td>3</td>
</tr>
<tr>
<td>Canada</td>
<td>3</td>
</tr>
<tr>
<td>Germany</td>
<td>2</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
</tr>
<tr>
<td>Hungary</td>
<td>1</td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
</tr>
<tr>
<td>Israel</td>
<td>1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>1</td>
</tr>
</tbody>
</table>

*Minneapolis/Saint Paul Minnesota = 35 Case Referrals
Referrals to Sleep Forensics Associates  

Break-down of Referral Sources Prior to Disposition Determination

<table>
<thead>
<tr>
<th>Source of Referral</th>
<th>Total N = 324</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legal Sector</strong></td>
<td>Accounted for</td>
</tr>
<tr>
<td></td>
<td>75 % of Case Referrals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source of Referral</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defendant/Client</td>
<td>25</td>
</tr>
<tr>
<td>Family</td>
<td>24</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>13</td>
</tr>
<tr>
<td>Physician</td>
<td>12</td>
</tr>
<tr>
<td>Law Enforcement Officer</td>
<td>7</td>
</tr>
</tbody>
</table>


**Includes: Forensics Psychiatrist, Child Protection Agency, Medical Examiner, etc.
Referrals to Sleep Forensics Associates

Pre-Disposition Assessment Summary
## Referrals to Sleep Forensics Associates
**Aug. 1, 2006 - Aug. 1, 2016**

Summary: Medico-legal Referrals Accepted and Process Completed to Report Formulation

<table>
<thead>
<tr>
<th>Top 3 Criminal Cases Accepted for Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOP 3</strong></td>
</tr>
<tr>
<td>1) Sexual Assault = 45%</td>
</tr>
<tr>
<td>2) Homicide = 17%</td>
</tr>
<tr>
<td>3) DWI/DUI = 7%</td>
</tr>
</tbody>
</table>

| Total # Accepted Cases | 96 |

Comment: Isolated Accepted Cases include Aggravated Assault with a Deadly Weapon and attempted Amendment of Death Certificate
## Possible Sleep Disorder Subtypes Implicated

<table>
<thead>
<tr>
<th>Possible Sleep Disorder Subtypes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Parasomnias (NREM/ REM)</td>
<td>53%</td>
</tr>
<tr>
<td>2) Pharmaceutical Effect</td>
<td>32%</td>
</tr>
<tr>
<td>3) Sleep Deprivation</td>
<td>6%</td>
</tr>
</tbody>
</table>

### Referrals to Sleep Forensics Associates

**Aug. 1, 2006 - Aug. 1, 2016**

<table>
<thead>
<tr>
<th>Subtype</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructive Sleep Apnea</td>
<td>14</td>
</tr>
<tr>
<td>Parasomnia Pseudo-suicide</td>
<td>8</td>
</tr>
<tr>
<td>Narcolepsy</td>
<td>3</td>
</tr>
<tr>
<td>Insomnia</td>
<td>3</td>
</tr>
<tr>
<td>Nocturnal Epilepsy</td>
<td>1</td>
</tr>
<tr>
<td>Eval. Auditory Arousal Threshold in Sleep</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Number Referral Cases = 324**

**9 Potential Sleep Disorder Subtypes**
<table>
<thead>
<tr>
<th>Parasomnias</th>
<th>(NREM + REM) = 172</th>
</tr>
</thead>
<tbody>
<tr>
<td>NREM Parasomnia</td>
<td>N = 167</td>
</tr>
<tr>
<td>Sexsomnia</td>
<td>112</td>
</tr>
<tr>
<td>Disorders of Arousal</td>
<td>47</td>
</tr>
<tr>
<td>PTSD Nightmare</td>
<td>3</td>
</tr>
<tr>
<td>Sleep Driving</td>
<td>2</td>
</tr>
<tr>
<td>Sleep Terrors</td>
<td>1</td>
</tr>
<tr>
<td>Sleep Paralysis</td>
<td>1</td>
</tr>
<tr>
<td>REM Sleep Behavior Disorder</td>
<td>N = 5</td>
</tr>
</tbody>
</table>


Guidelines for assessing the putative role of a sleep disorder in a violent act/sexual misconduct

1. There should be reason by history to suspect a *bona fide* sleep disorder. Similar episodes, with benign or morbid outcome, should have occurred previously.

2. The behavior is usually abrupt, immediate, impulsive, and senseless—without apparent motivation. Although ostensibly purposeful, it is completely inappropriate to the total situation, out of (waking) character.
3. The victim is someone who merely happened to be present, usually in proximity, and who may have been the stimulus for the arousal.

4. Immediately following return of consciousness, there is perplexity or horror, without attempt to escape, conceal, or cover up the action. There is evidence of lack of awareness on the part of the individual during the event.

5. There is usually some degree of amnesia for the event; however, this amnesia need not be complete.
6. Voluntary intoxication by alcohol over the legal limit, or other illicit mind-altering intoxicants, precludes the sleepwalking defense.

7. The violent criminal allegation cannot be better explained by another mental disorder, medical condition, or substance use.