The ICSD-3 NREM Parasomnia Section is Evidence Based Resulting From International Collaboration, Consensus and Best Practices

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In a recent letter to the editor of *JCSM*,¹ Rosalind C. Cartwright, PhD, criticizes certain aspects of the NREM Parasomnia section of the recently published International Classification of Sleep Disorders, 3rd Edition (ICSD-3).² As 2 members of the Parasomnia Work Group we appreciate the opportunity to set the record straight.

In particular Dr. Cartwright appears upset by the following sentence appearing on page 237 five lines from the bottom:

“Disorders of arousal should not be diagnosed in the presence of alcoholic intoxication.”

Dr. Cartwright states that this requirement is “premature,” although she also notes that there is no objective scientific evidence supporting a link between alcohol and sleepwalking. If we follow her logic correctly the absence of evidence makes this statement “opinion.” The absence of evidence that alcohol is a trigger or primer for sleepwalking should not release the sleep diagnostician to speculate as there is extensive scientific evidence to show that alcohol intoxication leads to effects on brain and behavior that can appear quite similar to sleepwalking. There are literally thousands of scientific publications that can account for all aspects of alcohol-induced behavior related to nocturnal wandering. Thus, the sleep diagnostician should consider that in the presence of alcohol intoxication there is exceptionally strong scientific evidence that alcohol is responsible for effects on brain and behavior, while there is no evidence for sleepwalking. It is reasonable and prudent to assume that alcohol consumption will lead to alcohol intoxication and alcohol intoxication will lead to well-described changes in brain and behavior.

Additionally, it has been noted by both the ICSD-3 as well as the DSM-5 that alcohol related behaviors should be distinguished from sleepwalking. The ICSD-3 notes:

“The behavior of the alcohol-intoxicated individual may superficially resemble that of the sleepwalker.”

The DSM-5 is even more specific and detailed noting in the parasomnia section on page 403:

“Alcohol-induced blackouts. Alcohol-induced blackouts may be associated with extremely complex behaviors in the

absence of other suggestions of intoxication. They do not involve loss of consciousness but rather reflect an isolated disruption of memory for events during a drinking episode. By history, these behaviors may be indistinguishable from those seen in NREM sleep arousal disorders.”

Dr. Cartwright also cites 3 studies employing retrospective survey methodologies as scientific evidence of the connection between alcohol and sleep. In a recent letter to the editor of *SLEEP*,³ it is noted that these studies suffer from a severe form of “recall bias.” Namely, the subjects interviewed reported episodes of sleepwalking sometime in the past but also have amnesia for those same episodes. Their memory of the episode is thus not original with them but second-hand from family or friends. The actual observer and documenter of the episodes was not interviewed. Thus, the patient’s description of the episode forms a type of double scientific hearsay that cannot be considered reliable evidence. This methodological problem is also noted in the ICSD-3 (p. 234).

Dr. Cartwright yet again promotes the use of spectral analysis as a reliable diagnostic method for sleepwalking. Only 2 months ago she published an article in this very journal devoted to the use of spectral analysis for the diagnosis of sleepwalking for forensic purposes.⁴ The response to her claims was that spectral analysis is not a reliable method and lacks both specificity and sensitivity. Nevertheless, Dr. Cartwright references an article by Gadreau and colleagues to support her claims that spectral analysis is a reliable method for the diagnosis of sleepwalking.⁵ However, Gadreau and colleagues themselves do not agree. They write in this same cited article:

“...it is worth noting that the presence or absence of a decrease of SWA early in the night and of awakenings from SWS in a given individual does not conclusively establish or refute a tendency toward sleepwalking.” (p. 4-5)

In the absence of any evidence Dr. Cartwright sees fit to present her own speculative non-scientific theory of why ICSD-3 states sleepwalking should not be diagnosed in the presence of alcohol intoxication and why spectral analysis was not included as a valid diagnostic method. According to Dr. Cartwright this

is the result of bias by 3 of the 4 members of the Parasomnia Work Group. Our “homogeneity” resulted in “one sided, premature conclusions.” She notes that these 3 Work Group members have occasionally published together, that the Work Group included no international members and that a single article related to alcohol and sleep authored by 3 of 4 of the Work Group is cited in the Reference Section. Based on this information she opines that members of Work Group were not properly selected and proper procedures were not followed. Otherwise, the Work Group would have apparently agreed with her views. We find this deeply disturbing. Dr. Cartwright did not participate in the ICSD-3 process. Further, Dr. Cartwright comments reflect a lack of understanding of the purposes and process of development of the ICSD-3. A brief description of the process is provided by Dr. Sateia in the introduction to the ICSD-3 (page 14). For the readers’—and Dr. Cartwright’s—information, we provide the following information on how the NREM Parasomnia section was researched, written, edited, reviewed, and ultimately accepted for publication.

The parasomnia section of the ICSD-3 was the product of almost 3 years of work, with the participation of dozens of sleep specialist worldwide. The ICSD-3 committee consisted of 10 members and was chaired by Dr. Michael Sateia of Dartmouth. He in turn appointed chairs for each diagnostic section. The parasomnia core group was chaired by Michel Cramer Bornemann and included members; Carlos Schenck, Mark Pressman, and Gerald Rosen. The process was quite comprehensive as follows:

1. There was an initial review of the content of the ICSD-2 sections on parasomnia.
2. There was extensive discussion of whether all of the diagnoses were still relevant or in the correct category.
 - a. Ultimately catathrenia and sleep talking were moved to other sections of the ICSD-3 by the committee.
3. An update of the sleep science in this area was done. A list of search terms was put together.
4. An exhaustive PubMed search was conducted by the staff of the AASM from 2005 to 2011 for parasomnia related articles.
5. A total of 1,584 articles and abstracts were initially identified.
6. The Work Group reviewed this list of articles and identified 150 articles that appeared to contain empirically relevant data on parasomnias.
7. A complete .pdf of these articles was retrieved and reviewed.
8. An initial updating and review of the parasomnia section was then produced and distributed.
9. Our Work Group met frequently via Skype video and produced dozens of drafts.
10. In 2012 and 2013, there were open meetings at APSS in which progress was described and public comments solicited.
11. Dr. Sateia also made numerous comments that were ultimately included in the section.
12. A draft was provided to all constituent societies of the World Sleep Federation, including Canada and the U.K.

13. Comments were solicited and received.
14. A near final draft was sent to the ICSD-3 committee prior to the 2013 APSS meeting.
15. The ICSD-3 committee met during the 2013 APSS meeting. The whole committee reviewed the parasomnia draft and made comments. Dr. Pressman was present to answer questions and note comments.
16. A conference call was later held with the ICSD-3 committee to respond to any of the committee’s additional concerns. Further changes were made.
17. Prior to its presentation to the board of the American Academy of Sleep Medicine (AASM), there were a number of further changes requested by Dr. Sateia as well as additions to the reference section.
18. The ICSD-3 committee met and approved the draft section.
19. It was then submitted to the full AASM board for review.
20. The Board of the AASM met and approved the draft that now appears.

Dr. Cartwright’s theory that the NREM Parasomnia section was produced by an insulated cabal of 3 biased researchers is clearly false. Her comments do a disservice not only to the Parasomnia Work Group Members, but to the dozens of individual worldwide who reviewed and contributed to the process. Our section was the result of the best of international collaborations using best practices.

CITATION

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DISCLOSURE STATEMENT

The authors have indicated no financial conflicts of interest.