

LETTER TO THE EDITOR

Alcohol, sleepwalking and violence: lack of reliable scientific evidence

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Sir, The recent Letter to the Editor by Drs Ebrahim and Fenwick (2012) challenges one sentence in a 2010 article published in *Brain* (Siclari *et al.*, 2010) stating that, because of the lack of reliable evidence, alcohol-induced sleepwalking should not be allowed as a defence to criminal acts. This, in turn, refers to an article published 22 years ago (Mahowald *et al.*, 1990). Drs Ebrahim and Fenwick express concern that defendants who have allegedly committed criminal acts while severely intoxicated with alcohol are potentially being denied a valid defence. In our opinion, claims of alcohol-induced sleepwalking violence or sleep sex lack any reliable scientific basis. There has never been an empirical, laboratory-based study of the effects of alcohol on slow-wave sleep or of complex sleep behaviours, such as sleepwalking violence or sleep sex, in clinically diagnosed sleepwalkers.

The generally accepted scientific position on the relationship between alcohol, sleep and sleepwalking can be found in the recently published fifth edition of the *Principles and Practice of Sleep Medicine* (2011):

‘Despite the considerable amount of attention in the popular media in the United States and United Kingdom given to the association between alcohol and sleepwalking, there is no compelling scientific research data that support the notion that a reasonable amount of alcohol will either prime or trigger such a mixture of states such as sleepwalking or sleep sex’ (Cramer Bornemann and Mahowald, 2011).

Ebrahim and Fenwick suggest that the effect of alcohol on slow-wave sleep is similar to that of sleep deprivation or fragmentation, and that this may be the mechanism by which alcohol triggers sleepwalking. The only comprehensive review of the relationship between sleep, alcohol, slow-wave sleep and sleepwalking identified only 6 of 19 studies in which mild or moderate alcohol intoxication in young healthy subjects was associated with a small, albeit statistically significant, increase in slow-wave sleep in the first half of the sleep recording, and none showed an effect on slow-wave sleep as a percentage of total sleep time (Pressman *et al.*, 2007). Studies of severe alcohol intoxication, in alcoholism or related disorders, were always associated with a decline or complete absence of slow-wave sleep. More recently, two studies, mentioned by Ebrahim and Fenwick, have reported a small, but statistically significant, increase in slow-wave sleep with alcohol—of ~7 min or 1.6–1.9% of total sleep time—in young healthy subjects (Rohsenow *et al.*, 2010; Arendt *et al.*, 2011). In published studies of the effects of sleep deprivation in clinically diagnosed sleepwalkers, sleep deprivation generally resulted in mean increases of 8–33% in slow-wave sleep as a percentage of total sleep time (Guilleminault *et al.*, 1998; Joncas *et al.*, 2002). This far exceeds the recently reported small effects of alcohol on slow-wave sleep as a percentage of total sleep time in healthy control subjects.

In summary, we do not accept that there is reliable evidence supporting the claim by Ebrahim and Fenwick that alcohol

ingestion provides a valid defence for criminal acts of violence or sexual behaviour allegedly associated with sleepwalking.

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