

## CASE REPORT

## Cultural Beliefs and Caffeine-induced Sleep Disorder: The Kopitiam Man

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### Abstract

**Objective:** A case of caffeine-induced sleep disorder is reported to illustrate the clinical benefits of assessing culturally determined health beliefs in such presentations. **Method:** A middle-aged Malaysian Chinese male presented with caffeine-induced sleep disturbance arising from dietary modifications. **Result:** Assessing the contribution of cultural beliefs regarding hot and cold drinks led to successful management of the patient's sleep disturbance. **Conclusion:** It is important for clinicians to explore health beliefs and associated dietary and lifestyle behaviours in caffeine-related sleep disorders.

**Keywords:** Caffeine, Food, Hot/Cold, Sleep, Cultural Belief

### Introduction

In Chinese culture, hot and cold food beliefs have been shown to influence dietary preferences and to result in attempts at dietary modification<sup>1</sup>. A survey among suburban Malaysian Chinese found that 78% of responders believed that excessive heat or cold can cause diseases<sup>2</sup>. In order to maintain health, cold foods are consumed to reduce excessive bodily heat while hot foods are perceived to have the opposite effect<sup>2</sup>.

In multicultural clinical settings, the role of the health professional must accommodate the cultural beliefs and experiences of patients<sup>3</sup>. A lack of information among clinicians regarding the influence of cultural beliefs on mental and physical health has been identified as a barrier in providing quality health care<sup>4</sup>. Primary health care

personnel, in particular, should acquire the cultural competence necessary to provide clinical care which is congruent with the cultural norms of the community<sup>5</sup>.

Caffeine is the most commonly used psychoactive substance and has multiple and varied effects on sleep<sup>6,7</sup>. Culturally determined beliefs regarding the effects of caffeine-containing drinks have been shown to be more prevalent in certain groups<sup>8</sup>.

Here, we report the case of a middle-aged patient who presented with sleep difficulty, in a background of lifelong heavy coffee consumption. The patient's beliefs regarding the effects of hot and cold drinks caused him to increase his caffeine intake further through the added consumption of strong tea. We discuss the clinical implications of our case in multiethnic community settings

where culturally-determined beliefs may be commonly held and result in similar presentations.

### **Case report**

A 54 year old single, Chinese Malaysian man, Mr K, employed as a jetty porter, presented to his local health clinic with difficulty in initiating sleep. For the previous two months he would go to bed at 1 to 2 a.m., but was unable to get to sleep until 4 a.m. When he finally got to sleep, towards morning, he frequently slept through his alarm and woke six hours later. As a consequence, he repeatedly missed work. His boss had confronted him about this and he was now worried about losing his job.

During the initial consultation, the patient requested hypnotic medication which the doctor refused, explaining that further assessment of the sleep problem was needed.

Following his presentation to the health clinic and initial assessment by a medical officer, the patient was referred for an opinion to an on-site psychiatry primary care liaison service.

The history and mental state examination was performed by the first author, a medical student, directly supervised by the second author, a consultant psychiatrist. The interview was conducted in Hokkien, the patient's preferred language.

Mr K had suffered a mild stroke two years previously, from which he made a full recovery. There was no past or family history of psychiatric illness. Similarly, he denied any recent significant stress or life events. His education was completed to primary level. He had several previous relationships but never married. However,

he mixed well socially and had a number of friends. There was no history of excessive consumption of alcohol, illicit substances or gambling. Although worried about his sleep, the patient did not meet diagnostic criteria for an anxiety or depressive disorder nor had he any psychotic symptoms. He also denied taking day-time naps.

When the details of caffeine intake were further explored, Mr K recalled that he had been given black coffee by his grandmother, as early as age three years. The amount of coffee he consumed increased as he grew older. Mr K acknowledged that he now drank eight to ten cups of black coffee every day. He took his first cup in the morning at his local 'Kopitiam' (a term that refers to the popular coffee shops which serve as regular social venues for many Malaysians). Mr K spent almost his free time there, chatting with friends and drinking coffee. On average, he drank a cup of black coffee every two to three hours, with his last cup taken at around 11.00 p.m.

When questioned about his attitude to his coffee-drinking, Mr K acknowledged that he drank more coffee than his friends at the Kopitiam and that they had advised him to cut down. However, he had experienced lethargy, headache and impaired concentration whenever he reduced his coffee intake and had therefore abandoned such efforts.

Mr K denied experiencing palpitations, restlessness or anxiety after drinking coffee and initially dismissed the suggestion that it could be contributing to his sleep difficulty. He expressed the fear that, without coffee, he would be unable to sleep at all. He went on to describe his belief that his sleep problem was due to excessive heat in his body. In an effort to reduce the heat, he had recently added two cups of black tea to his

usual daily coffee intake, for its cooling effect and had continued this practice, despite having had no improvement in sleep.

At interview, Mr K presented as a pleasant middle aged man. He apologised for being late for the appointment, explaining that he had once again slept through his alarm. He was of normal appearance, appropriate in dress and formed a good rapport. He provided a coherent history in an open manner. He showed some anxiety and was mildly restless at times. He was otherwise stable in affect and mood, not hopeless or suicidal and there were no abnormal thoughts. His cognitive functioning was grossly normal and there was no impairment of insight and judgement.

Based on the assessment, and following a discussion of the case between the authors and primary care physician, the patient was felt to meet criteria for DSM V diagnoses of both circadian rhythm sleep-wake disorder and caffeine induced sleep disorder<sup>9</sup>. He was not found to have any other co-morbid psychiatric disorder.

A full explanation of the diagnosis and its implications for management was provided to the patient, in the presence of the primary care physician. This included discussion of the effects of Mr K's recent tea drinking as explaining the timing of onset of deterioration in his sleep pattern and the reasons why prescribing hypnotic medication was not appropriate. Detailed recommendations were outlined, in terms of general sleep hygiene and specifically, for a gradual stepwise reduction in caffeine intake by replacing coffee and tea with other beverages. It was emphasised, however, that there was no expectation that he should otherwise alter his normal lifestyle, in terms of his daily social interaction at the Kopitiam.

The primary care medical officer agreed to provide close follow-up and support for this plan and the patient agreed to adhere to the recommended strategy.

During a follow up review, Mr K reported no initial improvement in his sleep disturbance. This was despite reduction in coffee and tea consumption to six cups per day. However, after persevering with this lower level of consumption for approximately one month, with support from his doctor, he described that his previous sleeping pattern gradually returned. He was now sleeping from about 12.00 a.m. to 6.00 a.m. and pleased that he was no longer missing work.

## Discussion

We have described the case of a 54 year old man, without co-morbid psychiatric illness, who had been a heavy coffee drinker since childhood and who now presented with a relatively acute onset of marked shift in his sleep-wake cycle in the context of recent additional consumption of tea.

Biologically, the late onset of sleeping difficulties, particularly circadian sleep wake disorder in this patient, is likely to be explained by age-related increased caffeine sensitivity<sup>6</sup>. The evidence arising from our case supports that from previous studies in terms of the combined effects of age and caffeine on the circadian waking signal<sup>10</sup>.

In increasing sleep onset latency and in causing shifts in the sleep-wake cycle<sup>11</sup>, older people appear to be more sensitive to challenges to the sleep-wake cycle, that can emanate from various sources<sup>6,10</sup>. In our patient, increased caffeine intake, from the addition of black tea appears to have precipitated a relatively acute disruption in his sleep-wake cycle<sup>2</sup>.

High levels of public awareness of the negative impact of caffeine containing drinks on sleep have been reported<sup>12</sup>. Interestingly however, our patient was not convinced of such an association, instead, attributing the sleep disturbance to the deleterious effects of excessive heat in his body.

Caffeine causes sympathetic effects, enhancing night time body temperature and subsequently interrupting circadian rhythm of sleep<sup>13</sup>. This provides an additional biological context to our patient's perception that excessive body heat was contributing to his sleep difficulty. Traditionally, Chinese have held the hot and cold food belief and there has been an established practice of treating excessive heat in the body using cold food and vice versa<sup>1</sup>.

Our patient believed that coffee is a "hot" drink while he regarded tea as "cold". Black tea, in particular, was chosen by our patient for its perceived moderate cooling effect. In comparison, other types of tea including Chinese tea and chrysanthemum tea are regarded as too "cold" to the extent that they could actually cause sleep difficulties.

In our case, the primary care physician's decision to refuse the initial request for hypnotic medication and the referral to on-site primary care consultation facilitated a more comprehensive assessment and appropriate management. Such collaboration is consistent with international health policy to increase the level of support for primary care clinicians from specialist mental health services, in managing common mental disorders<sup>3</sup>.

## Conclusion

Our case serves to illustrate the importance of cultural considerations in the clinical

assessment<sup>3</sup> and management of caffeine-related sleep difficulties. In multi-cultural treatment settings, it would seem particularly important to elicit culturally-determined attitudes surrounding the effects of caffeine on sleep and to adequately explore any associated dietary modifications. Clinicians should also respect the diversity of cultural convictions, in situations where their own ethno-cultural background is different from that of the patient<sup>5</sup>. In this way, patients with similar presentations will be more likely to engage and adhere to recommended alteration in dietary practices and lifestyle<sup>5</sup>. Further empirical research, could usefully explore the association between sociocultural factors and caffeine induced sleep disorder, specifically circadian sleep wake disorder.

## References

1. Lee MM, Shen JM. Dietary patterns using traditional Chinese medicine principles in epidemiological studies. *Asia Pacific Journal of Clinical Nutrition* 2008; **17** :79-81.
2. Chew KS, Tan TW, Ooi YT. Influence of Chinese cultural health beliefs among Malaysian Chinese in a suburban population: a survey. *Singapore Medical Journal* 2011; **52**: 252.
3. Chong ST, Mohamad MS, Er AC. Mental health development in Malaysia: history, current issues and future development. *Asian Social Science* 2013;**9**:6.
4. Kamil MA, Khoo SB. Cultural health beliefs in a rural family practice: A Malaysian perspective. *Australian Journal of Rural Health* 2006; **14**:2–8.

5. Waheed W. Ethnic Minorities. In: Gask L, Lester H, Kendrick T and Peveler R, eds. Primary Care Mental Health. Glasgow: RCPsych Publications, 2009; 308-318.
6. Drapeau C, Hamel-Herbert I, Robillard R, Selmaoui B, Filipini D, Carrier J. Challenging sleep in aging: the effects of 200mg of caffeine during the evening in young and middle-aged moderate caffeine consumers. *Journal of Sleep Research*, 2006;**15**: 133-141.
7. Smith A. Effects of caffeine on human behaviour. *Food and Chemical Toxicology* 2002; **40**: 1243–1255.
8. Dharmananda S. Coffee in China and the analysis of coffee according to traditional Chinese medicine. <http://www.itmonline.org/arts/coffee.htm> [Accessed on 18 November 2014].
9. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental disorders (DSM 5)*. Washington DC, London England. 2013.
10. Carrier J, Paquet J, Fernandez-Bolanos M, *et al*. Effect of caffeine on daytime recovery sleep: a double challenge to the sleep wake cycle in aging. *Sleep Medicine* 2009;**10**:1016-1024.
11. Brezinova V. Effect of caffeine on sleep: EEG study in late middle age people. *British Journal of Clinical Pharmacology* 1974, **1**, 203-208.
12. Adan A, Fabbri M, Natale V, Prat G. Sleep Beliefs Scale (SBS) and circadian typology. *Journal of Sleep Research* 2006;**15**:125-132.
13. Lack LC, Gradisar M, Van Someren EJ, Wright HR, Lushington K. The relationship between insomnia and body temperatures. *Sleep Medicine Reviews* 2008; **12**: 307–317.

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