



Control and coping in chronic insomnia: A daily diary study



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ABSTRACT

This daily diary study evaluated the relationships between perceived control over sleep, coping with sleeplessness, and subjective sleep in a sample of 45 adults with chronic insomnia. For seven consecutive days, newspaper-recruited adults completed daily self-report measures of perceived control, coping, general fatigue, mood, and sleep. Using a mixed-model analysis with SAS, we examined the lagged impact of perceived control and coping (either assimilative or accommodative) on next day sleep, mood, and fatigue. Results showed that perceived control over sleep was a significant predictor of next day sleep quality. For those with more chronic presentations, perceived control over sleep was a significant predictor of next day accommodative coping. Results indicated that those with more chronic presentations were more likely to use accommodative coping, and that this was associated with worsened next-day mood and no improvements in sleep. Implications of these findings are that changes in perceived control precede, and do not follow from, changes in sleep. Additionally, results suggest that accommodative coping should be discouraged as it is more likely to worsen next-day mood.

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Chronic insomnia is a significant problem for individuals and for our society at large. The experience of persistent insomnia, as defined by a difficulty with falling asleep, staying asleep, and/or early morning awakening, coupled with sleep-related daytime impairment, has been found to place individuals at increased risk for stroke, diabetes, alcohol abuse, depressive episodes and neuropsychological deficits (Crum, Storr, Chan, & Ford, 2004; Elwood, Hack, Pickering, Hughes, & Gallacher, 2006; Ford & Kamerow, 1989; Harrison & Horne, 2000; Kawakami, Takatsuka, & Shimizu, 2004). The negative impact of insomnia extends into the occupational realm, where a week of poor sleep is associated with a 3-fold reduction in productivity (Godet-Cayré et al., 2006; Melamed & Oksenberg, 2002). On the roadway, those with insomnia have motor vehicle accidents at a rate 2–3 times that of the general population (Balter & Uhlenhuth, 1992; Leger, 1994). Drowsiness produces more accidents, injuries, and fatalities than speeding, alcohol use, or weather conditions (American Automobile Association Foundation for Traffic Safety, 2010). Further, chronic insomnia coupled with daytime impairment is a problem plaguing a significant number (9%) of adults (Morin, Leblanc, Daley, Gregoire, & Mérette, 2006).

Perceived control over sleep

Current cognitive behavioral models of insomnia indicate that the perception of low control over sleep may be maladaptive and promotes hyperarousal and distress among poor sleepers (Harvey, 2002; Morin, 1993). Further, research has found that both in-person and internet-based cognitive behavioral therapy (CBT) improve perceived control over sleep, and that such improvements are positively associated with improvements in sleep and daytime functioning (Carney & Edinger, 2006; Morin, Blaise & Savard, 2002; Vincent & Lewycky, 2009). At least in the area of insomnia, greater perceived control over sleep appears to be adaptive and to be associated with better outcomes. Notably, more change in perceived control over sleep occurs with CBT than with pharmacotherapy, even when pharmacotherapy substantially improves the sleep problem (Morin, Blais, & Savard, 2002). Thus, if perceived control over sleep was simply an epi-phenomenon of good sleep, then we would expect to see similar improvements in perceived control with pharmacotherapy.

Unfortunately, previous research on perceived control over sleep has not provided a fine-grained demonstration of the temporal sequence of change and the subscale typically employed to assess perceived control over sleep (Morin, 1993), although highly useful in the field, does not assess both contingency and self-efficacy. Four of the most prominent psychological theories of perceived control are locus of control (Lefcourt, 1976), attribution

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theory (Weiner, 1985), self-efficacy theory (Bandura, 1977), and the theory of learned helplessness (Abramson, Seligman, & Teasdale, 1978). Skinner (1996) reviewed these constructs and concluded that sophisticated modern-day conceptualizations of perceived control need to emphasize that both contingency (in this case, the belief that sleep is under personal control) and efficacy (the belief that one is capable of making behavioral changes to improve sleep) contribute to a perception of perceived control.

Decades of control research have shown that having more perceived control over stress is generally adaptive. However, more perceived control over stress may be maladaptive when individuals do not desire control, blame themselves for failure to achieve control, or engage in tenacious goal pursuit in an objectively low control circumstance (Wrosch, Heckhausen, & Lachman, 2000). Also, there has been little study of the conditions under which perceived control is most influential. Results from one study showed that perceived control over sleep lessens as the duration of insomnia increases (Ellis, Hampson, & Cropley, 2007), and outside of the area of insomnia, perceived control becomes more important in predicting adjustment to chronic conditions as the duration of the condition lengthens (Tennen & Affleck, 2000) and when the focus is on daily symptoms as opposed to overall disease (Affleck, Tennen, Pfeiffer, & Fifield, 1987). Thus, we predicted that low perceived control would be associated with less favorable next-day mood, fatigue, and sleep in accordance with Morin's (1993) theory. Important questions in this area are as follows: Do changes in perceived control over sleep precede actual improvements in sleep? Is there a relationship between duration of insomnia and the adaptiveness of perceived control? What are the consequences of perceived control over sleep on coping strategies used to combat the problem of insomnia?

Coping with insomnia

The impact of perceived control over sleep on coping with insomnia is largely unknown but potentially very important. Survey research has shown that, after appraising a stressful situation, individuals may engage in one of two broad types of coping sometimes referred to as primary versus secondary control, although this choice of terms is not without controversy (Morling & Evered, 2006; Skinner, 2007). Assimilative or primary control-oriented coping refers to strategies embodying tenacious goal pursuit or persistence in goal striving. An example of such coping is the practice of techniques known to produce change in health status. In the area of insomnia, some examples would include the practice of sleep restriction, relaxation therapies, or modifications to the bedroom environment. Accommodative or secondary control-oriented coping is typically employed after assimilative coping efforts have failed (hence the term secondary). Accommodative coping refers to a rather broad set of strategies embodying flexible goal adjustment (Skinner, 1996). Some examples of accommodative processes are downward comparison, positive re-appraisal, downgrading importance of the task, and downgrading expectations for oneself. An example of such coping would be reminding oneself that many others have less favorable sleep than oneself. Research has generally found that when individuals perceive that they have a high degree of control over a stressor, they are more likely to engage in assimilative processes (Skinner, 1996). When individuals perceive that they have a low degree of control over a stressor, they may relinquish their control and experience learned helplessness or they may engage in accommodative processes.

In the context of coping with a chronic disorder such as insomnia, if interventions do not quickly remediate the problem, individuals may shift their focus from learning and applying new behavioral strategies to attempting to change their emotions or

reactions to their insomnia or retreating to hopelessness. Although not specific to sleep, research has shown that, as we age, the use of more accommodative strategies is associated with better adjustment to chronic health problems (Wrosch et al., 2000). A few authors have studied coping strategies used by those with insomnia to combat non-sleep specific stress (Ellis & Cropley, 2002; Leblanc et al., 2007; Morin, Rodrigues & Ivers, 2003; Vollrath, Wicki, & Angst, 1989; Voss, Kolling, & Heidenreich, 2006), and one survey showed that sleep efficiency improves when individuals cease to pursue unattainable (but not sleep specific) goals (Wrosch, Miller, Scheier, & Brun de Pontent, 2007). Thus far, there has been no research examining accommodative coping strategies involved in interventions for insomnia. Based on existing research and theory, we predicted that, for those with longstanding insomnia, more accommodative coping would be associated with better next-day sleep, mood, and fatigue. Outside of the area of insomnia, very little research studying the relationship between accommodative processes and perceived control exists. Based on existing theory, we predicted that more frequent use of assimilative coping would be associated with better next-day sleep, mood, and fatigue and we did not predict that duration of insomnia would interact with assimilative coping in this regard. We also predicted that, for those with longstanding insomnia, low perceived control would be associated with more accommodative coping possibly due to discouragement associated with failed past attempts to improve sleep. We predicted that those who were newer to insomnia might show the opposite pattern of engaging in more assimilative, or change-based coping as they may have greater optimism in resolving their sleep problems. As age, gender, and distress have been shown to influence coping processes (with greater distress associated with more use of accommodative coping) (Declerck, Boone, & Brabander, 2006; Ender, Parker, & Summerfeldt, 1993), and as gender has been shown to correlate with perceived control (Morin et al., 2006), these variables served as covariates when appropriate. Duration of insomnia served as a moderator in some analyses. Based on this review, the following hypotheses were generated.

Hypotheses

1. On days during which higher levels of perceived control over sleep are reported, there will be significant improvements in sleep (efficiency, quality), mood, and fatigue on the following day, after adjusting for duration of insomnia, age, and gender.
2. On days during which perceived control over sleep is higher, there will be a significant increase in the frequency of assimilative processes the following day, even after adjusting for duration of insomnia, age, gender, and neuroticism.
3. There will be an interaction between perceived control over sleep and duration of insomnia on frequency of next-day accommodative processes, even after adjusting for age, gender, and neuroticism.
4. There will be an interaction between frequency of accommodative processes and duration of insomnia on next-day mood, sleep, and fatigue even after adjusting for gender, age, and neuroticism.
5. There will be a direct effect of assimilative coping on next-day mood, sleep, and fatigue, even after adjusting for gender, age, and neuroticism.

Methodology

Design

This was a case series study design.

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