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## **Sleep-related cognitive arousal across different insomnia subgroups**

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**Introduction:** While it is well known that Psychophysiological Insomnia is characterised by increased sleep effort, dysfunctional beliefs and attitudes towards sleep and heightened pre-sleep cognitive arousal, it is not clear how psychiatric comorbidity and history may impact sleep-related cognitions.

**Methods:** In the present study we compared four well-defined groups (Psychophysiological Insomnia [PI, n=51], Insomnia with Remitted Recurrent Depression [I-RRD, n=45], Insomnia comorbid with Major Depression [I-MD, n=33], and Good Sleepers [GS, n=41]) on the Glasgow Sleep Effort Scale (GSES), Dysfunctional Beliefs and Attitudes about Sleep scale (DBAS-total), Pre-Sleep Arousal Scale (PSAS-cognitive and somatic) and the Glasgow Content of Thoughts Inventory (GCTI).

**Results:** Groups were similar with respect to mean age (PI=43.8yrs; I-RRD=43.2yrs; I-MD=42.1yrs; GS=40.2yrs) and gender distribution (PI=63%F; I-RRD=71%F; I-MD=67%F; GS=66%F). The three insomnia patient groups evidenced similar ISI scores (PI=17.4; I-RRD=17.4; I-MD=18.1), significantly differing from GS (2.3;  $p$ 's<.001). Scores on the GSES and PSAS-somatic subscale were similar across the three insomnia subgroups, being robustly different from controls ( $p$ <.001). Group comparisons for DBAS total, PSAS-cognitive subscale and GCTI again revealed that all groups differed from good sleepers ( $p$ 's<.001), but that both I-MD and I-RRD reported higher values relative to the PI group ( $p$ 's<.01).

**Conclusion:** All insomnia subgroups showed clear evidence of sleep-related cognitive arousal, sleep effort and dysfunctional beliefs and attitudes about sleep. Experiencing a current or recurrent (though presently remitted) depressive illness, in addition to persistent insomnia, was associated with enhanced pre-sleep cognitive arousal and thought content, as well as greater endorsement of dysfunctional sleep beliefs, relative to PI in isolation.

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