

# The association between sleep-related cognitions, psychological flexibility, and insomnia symptoms

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## Introduction

The **metacognitive model of insomnia** defines cognitive activity as primary arousal and the interpretation given to those thoughts as a secondary arousal. It proposes that the content of maladaptive sleep-related thoughts contributes to the maintenance of insomnia disorder due to the **mutual influence of primary and secondary processes**. This work tests if psychological inflexibility moderates the relationship between dysfunctional beliefs about sleep and insomnia severity.

## Methods

Data were collected from online surveys responded by 629 adults, aged 18 to 59 years, who reported experiencing insomnia symptoms. Participants completed self-report questionnaires, including: I) Hospital Anxiety and Depression Scale (HADS); II) Insomnia Severity Index (ISI); III) Dysfunctional Beliefs and Attitudes about Sleep Scale (DBAS-16); IV) Acceptance and Action Questionnaire (AAQ-II). A linear model (estimated using OLS) was fitted to predict ISI scores from DBAS-16 and AAQ-II with age, sex and HADS subscales as covariates.

## Results

The model significantly predicted ISI scores ( $F(621, 7) = 42$ ),  $p < 0.001$ ,  $R^2_{adj} = 0.31$ ), accounting for 31% of the variance.

Table 1: Results from the regression model examining the effects of age, sex, cognitive processes (DBAS-16 and AAQ-II) and anxiety and depressive symptoms on the severity of insomnia.

	Coef.	SE
Age	0.003 [-0.003, 0.010]	0.003
Sex	0.027 [-0.131, 0.185]	0.080
HADS-A	0.149 [0.057, 0.241]**	0.047
HADS-D	0.071 [-0.023, 0.165]	0.048
DBAS	0.393 [0.317, 0.469]***	0.039
AAQ	0.107 [0.006, 0.208]*	0.051
DBAS x AAQ	0.068 [0.009, 0.127]*	0.030

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

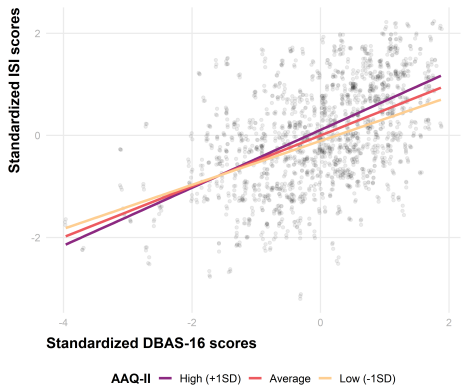


Figure 1: Decomposing dysfunctional beliefs about sleep by psychological inflexibility interaction via simple slopes for psychological inflexibility.

## Conclusion

The **significant interaction effect** indicates that the prediction effect of dysfunctional beliefs about sleep may become more positive for additional levels of psychological inflexibility.

