

# Psychological inflexibility was associated **only** with severe insomnia.

## Psychological inflexibility as a predictor and factor associated with insomnia

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### Introduction

Psychological inflexibility (PI) has recently attracted the attention of researchers in the field of sleep disorders; therefore, in the study, psychological inflexibility was evaluated as a predictor or factor related to the presence/severity of insomnia.

### Methods

2218 individuals, including 1797 individuals with insomnia and 421 controls without insomnia. All participants completed the DSM-5-based insomnia diagnosis interview, Insomnia Severity Index, Hospital Anxiety and Depression Scale, and Acceptance Action Questionnaire II. Linear regression and multinomial logistic regression models were used. Sex, education, occupation, marital status, anxiety, depression, and psychological inflexibility were possible predictors or factors associated with the severity of insomnia.

### Results

Multivariate linear regression analysis demonstrated that sex (Beta=0.88;  $t=2.80$ ;  $p=0.005$ ), depression (Beta=0.41;  $t=10.7$ ;  $p<0.001$ ), anxiety (Beta=0.58;  $t=14.1$ ;  $p<0.001$ ), and psychological inflexibility (Beta=0.09;  $t=5.07$ ;  $p<0.001$ ) were predictors of insomnia. Compared to the good sleepers, insomnia at all levels was associated with sex, anxiety, and depression. Psychological inflexibility was only associated with severe insomnia (OR=1.04).

Table 1: Study participants (N = 2218) descriptive statistics.

	Control No insomnia/ISI=0-7 (n=421)	Insomnia ISI>7 (n=1797)	Insomnia Severe/ISI>22 (n=564)
Age (years)	39.8(9.1)	40.7(11)	41(10.5)
Sex			
Female	364 (86)	1431(80)	449(80)
Male	57(14)	366(20)	115(20)
Education level			
No university	61(14)	530(29)	203(36)
University	360(86)	1267(71)	361(64)
Occupation			
Remunerated	337(80)	1305(73)	387(69)
No remunerated	84(20)	492(27)	177(31)
Marital status			
Married	218(52)	833(73)	268(47)
No married	203(48)	963(27)	296(53)
Anxiety score (HADS-A)	5.0(3.3)	11.9(4.2)	13.8(3.9)
Depression score (HADS-D)	3.9(3.0)	9.98(4.3)	11.9(4.1)
Psychological inflexibility (AAQ-II)	18.1(8.6)	31.6(9.8)	36.2(8.9)
Insomnia Severity Index (ISI)	1.8(1.7)	19.2(4.2)	24.1(1.7)

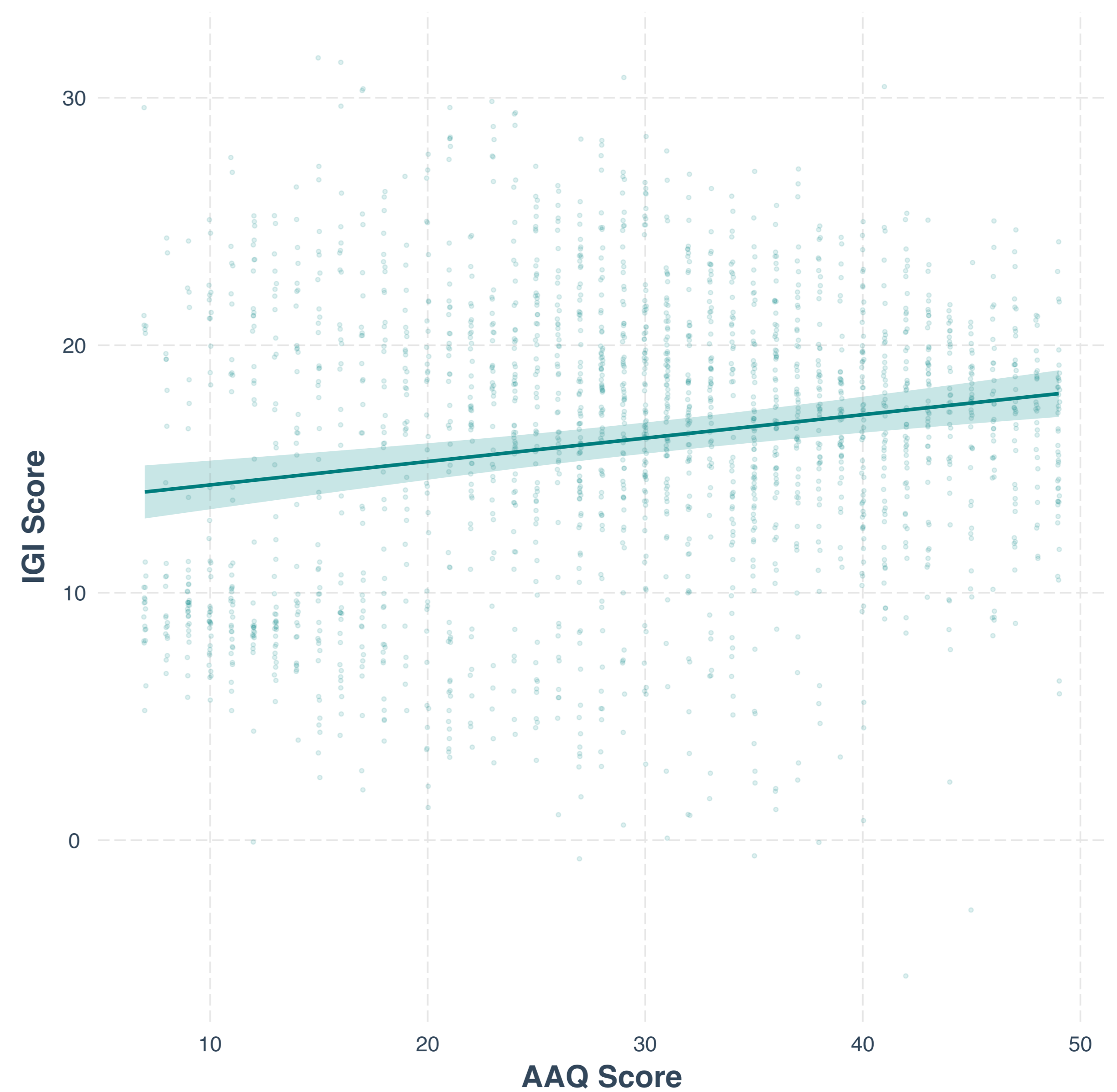


Figure 1: Relationship between AAQ Score and IGI Score

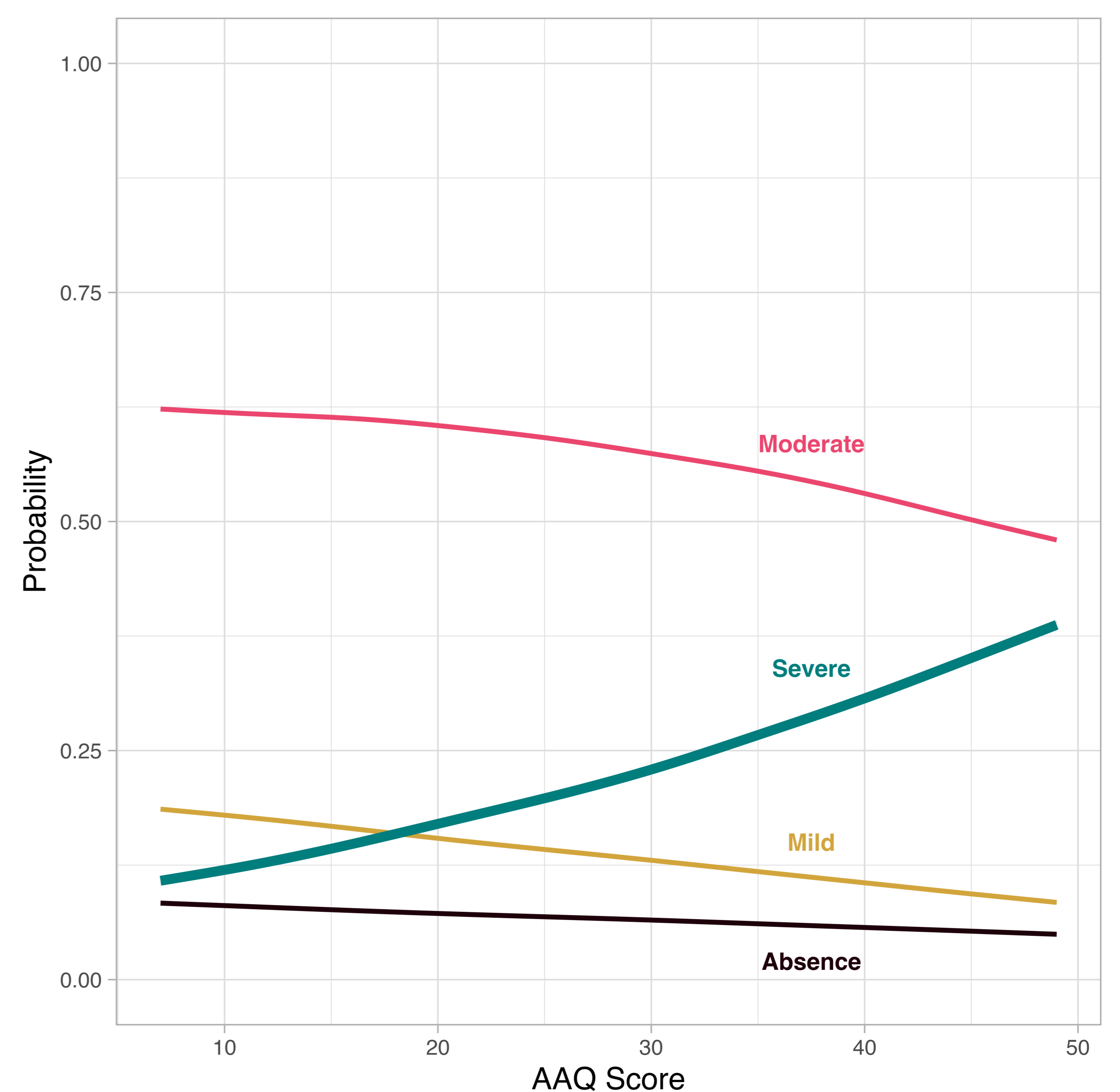


Figure 2: Relationship between AAQ Score and Probability of Having Different Levels of Insomnia

### Discussion

These findings are important from a public health perspective because behavioral strategies designed to treat insomnia with a focus on psychological inflexibility are low-cost and may help improve sleep quality in adults with insomnia, which also influences mental health.

