

Supplement table S1. The relationship between specific domains of depressive symptomatology and Pittsburgh Sleep Quality Index\*

Pittsburgh Sleep Quality Index	Component scores of Pittsburgh Sleep Quality Index						
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
<b>Total (n=657)</b>							
Cognitive	0.98 (0.91-1.05)	1.03 (0.99-1.07)	1.03 (0.99-1.07)	1.02 (0.98-1.06)	1.02 (0.98-1.07)	0.98 (0.94-1.03)	1.05 (1.01-1.09)
Affective	1.13 (0.98-1.31)	1.09 (1.02-1.17)	1.04 (0.98-1.12)	1.07 (0.99-1.16)	1.06 (0.99-1.15)	0.99 (0.91-1.08)	1.09 (1.01-1.17)
Somatic	1.19 (1.00-1.42)	1.20 (1.09-1.32)	1.05 (0.96-1.15)	1.06 (0.95-1.19)	1.16 (1.04-1.29)	1.08 (0.97-1.21)	1.18 (1.07-1.31)
<b>PSQ+HI (n=150)<sup>#</sup></b>							
Cognitive	0.72 (0.45-1.15)	0.97 (0.85-1.11)	1.26 (1.07-1.48)	1.12 (0.97-1.29)	1.14 (0.99-1.32)	0.90 (0.74-1.10)	0.97 (0.85-1.10)
Affective	1.30 (0.75-2.27)	1.09 (0.89-1.32)	1.12 (0.90-1.39)	1.19 (0.97-1.47)	1.28 (1.04-1.59)	0.88 (0.66-1.17)	1.06 (0.88-1.28)
Somatic	1.23 (0.65-2.33)	1.33 (1.02-1.73)	1.08 (0.81-1.43)	0.91 (0.69-1.18)	1.25 (0.95-1.66)	1.20 (0.86-1.67)	1.34 (1.03-1.75)
<b>PSQ+MI (n=248)</b>							
Cognitive	0.97 (0.83-1.14)	0.98 (0.90-1.06)	1.00 (0.91-4.30)	0.97 (0.89-1.09)	1.02 (0.92-1.12)	1.03 (0.92-1.15)	1.06 (0.97-1.16)
Affective	1.37 (0.99-1.89)	1.06 (0.93-1.21)	0.99 (0.86-1.13)	1.10 (0.93-1.31)	1.06 (0.90-1.25)	1.13 (0.92-1.37)	1.03 (0.89-1.18)
Somatic	1.26 (0.88-1.81)	1.18 (0.99-1.40)	1.06 (0.90-1.26)	1.22 (0.98-1.52)	1.18 (0.96-1.46)	1.12 (0.89-1.42)	1.11 (0.93-1.33)
<b>PSQ+ LI (n=259)</b>							
Cognitive	0.95 (0.68-1.32)	1.07 (0.83-1.37)	1.29 (0.98-1.71)	0.85 (0.62-1.16)	0.85 (0.62-1.16)	0.95 (0.74-1.20)	0.99 (0.73-1.33)
Affective	1.47 (0.95-2.27)	1.03 (0.75-1.41)	1.31 (0.96-1.79)	0.92 (0.63-1.33)	0.93 (0.64-1.37)	1.01 (0.74-1.37)	1.16 (0.83-1.63)
Somatic	1.51 (1.05-2.16)	1.12 (0.89-1.41)	1.07 (0.87-1.31)	1.05 (0.80-1.37)	1.48 (1.16-1.91)	1.28 (0.98-1.66)	1.10 (0.84-1.44)

\* Variables with forced enter into each model including age, sex, the scores of Beck Anxiety Inventory, psychiatric diagnosis, hypnotics use, and one domain of the Beck Depression Inventory-II

<sup>#</sup>: Hypnotics use was removed from the model to ensure the converge of models

Abbreviations: AOR: adjusted odds ratio, PSQ: poor sleep quality, HI: high insomnia, MI: moderate insomnia, LI: low insomnia

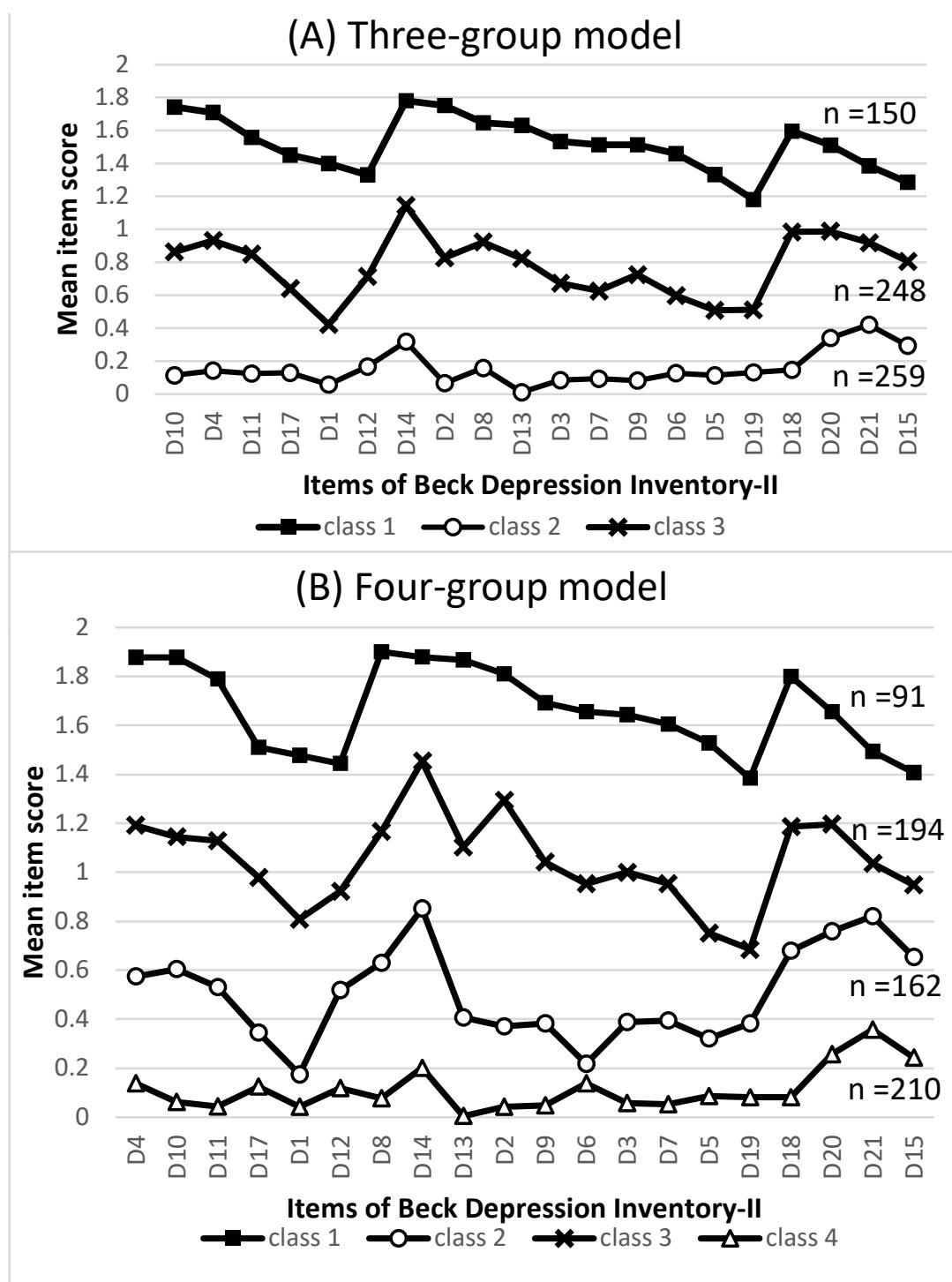
Supplement table S2. The relationship between specific domains of depressive symptomatology and sleep parameters\*

	Eveningness chronotype	Subjective sleep loss	Sleep initiation difficulty	Sleep maintenance difficulty	Early morning awakening	Daytime sleepiness
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
<b>Total (n=657)</b>						
Cognitive	1.07 (1.02-1.12)	1.04 (0.99-1.08)	1.02 (0.98-1.06)	1.02 (0.99-1.06)	1.01 (0.97-1.05)	1.02 (0.98-1.06)
Affective	1.07 (0.98-1.16)	1.02 (0.95-1.10)	1.06 (0.99-1.14)	1.06 (0.99-1.14)	1.00 (0.93-1.07)	0.99 (0.92-1.05)
Somatic	1.18 (1.05-1.32)	1.12 (1.02-1.24)	1.08 (0.98-1.18)	1.08 (0.98-1.18)	1.01 (0.92-1.11)	1.08 (0.99-1.19)
<b>PSQ+HI (n=150)</b>						
Cognitive	1.01 (0.87-1.18)	1.00 (0.86-1.16)	1.18 (1.02-1.36)	1.02 (0.89-1.16)	1.17 (0.96-1.27)	1.04 (0.91-1.19)
Affective	0.93 (0.76-1.16)	1.01 (0.82-1.24)	1.02 (0.84-1.23)	1.13 (0.93-1.37)	1.02 (0.84-1.24)	0.90 (0.74-1.09)
Somatic	1.32 (0.97-1.79)	1.16 (0.90-1.50)	1.14 (0.88-1.47)	1.18 (0.91-1.52)	1.41 (1.08-1.88)	1.42 (1.08-1.86)
<b>PSQ+MI (n=248)</b>						
Cognitive	1.05 (0.95-1.16)	1.07 (0.98-1.16)	1.00 (0.93-1.09)	1.01 (0.93-1.10)	1.01 (0.93-1.10)	1.00 (0.92-1.09)
Affective	1.00 (0.85-1.17)	0.94 (0.81-1.08)	1.17 (1.02-1.35)	1.06 (0.93-1.22)	0.93 (0.81-1.08)	0.97 (0.85-1.11)
Somatic	0.97 (0.80-1.17)	1.13 (0.95-1.35)	1.15 (0.97-1.36)	1.04 (0.88-1.23)	1.03 (0.87-1.23)	0.99 (0.85-1.17)
<b>PSQ+ LI (n=259)</b>						
Cognitive	0.96 (0.65-1.43)	0.97 (0.75-1.26)	0.97 (0.76-1.24)	1.01 (0.80-1.28)	0.95 (0.73-1.23)	1.12 (0.90-1.40)
Affective	0.69 (0.40-1.20)	0.99 (0.72-1.35)	1.14 (0.85-1.53)	1.21 (0.91-1.62)	1.20 (0.89-1.61)	0.89 (0.64-1.23)
Somatic	1.23 (0.89-1.70)	1.12 (0.89-1.41)	1.03 (0.83-1.28)	1.08 (0.87-1.34)	0.88 (0.69-1.12)	1.03 (0.83-1.28)

\* Variables with forced enter into each model including age, sex, the scores of Beck Anxiety Inventory, psychiatric diagnosis, hypnotics use, and one domain of the Beck Depression Inventory-II.

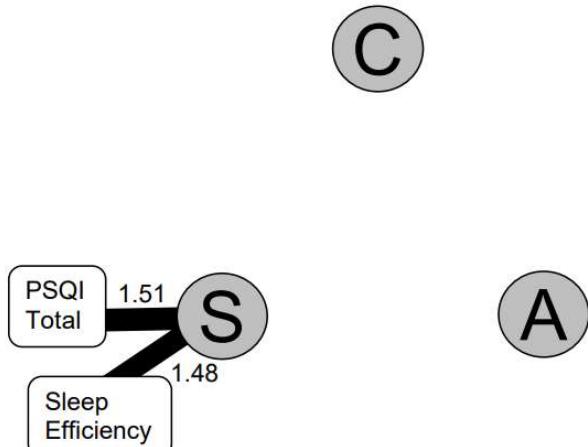
Abbreviations: AOR: adjusted odds ratio, PSQ: poor sleep quality, HI: high insomnia, MI: moderate insomnia, LI: low insomnia

**Figure S1.** The distribution of the scores of the Beck Depression Inventory-II (BDI-II) in three-group model and four-group model. Panel (A): three-group model. Panel (B): four-group model. D1 to D21 indicated the items of BDI-II. **D1:** sadness **D2:** pessimism **D3:** past failure **D4:** loss of pleasure **D5:** guilty feelings **D6:** punishment feelings **D7:** self-dislike **D8:** self-criticalness **D9:** suicidal thoughts or wishes **D10:** crying **D11:** agitation **D12:** loss of interest **D13:** indecisiveness **D14:** worthlessness **D15:** loss of energy **D16:** changes in sleep patterns **D17:** irritability **D18:** changes in appetite **D19:** concentration difficulties **D20:** tiredness or fatigue **D21:** loss of interest in sex. Each item receives a score ranging from 0 to 3. In both models, the major between-group difference is the mean score of BDI-II, which indicated different

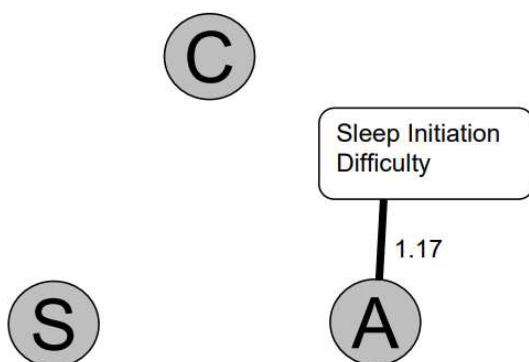


**Figure S2.** The sequential co-occurring patterns between domains of depressive symptomatology with sleep-wake disturbances. **PSQI:** Pittsburgh Sleep Quality Index; **C:** cognitive domain; **A:** affective domain; **S:** somatic domain. Panel (A): the Poor Sleep Quality with Low Insomnia (PSQ+LI) group Panel (B): the Poor Sleep Quality with Moderate Insomnia (PSQ+MI) group. Panel (C): the Poor Sleep Quality with High Insomnia (PSQ+HI) group. This figure integrates information from Figure 1 and Figure 2 to illustrate the sequential co-occurrence pattern between specific domains of depressive symptomatology with sleep-wake disturbances. From panel (A) to (C), the co-occurrence patterns between specific domains of depressive symptomatology with various sleep-wake disturbances appear following the sequence of somatic, affective, and cognitive domains.

(A) Poor sleep quality + low insomnia



(B) Poor sleep quality + middle insomnia



(C) Poor sleep quality + high insomnia

