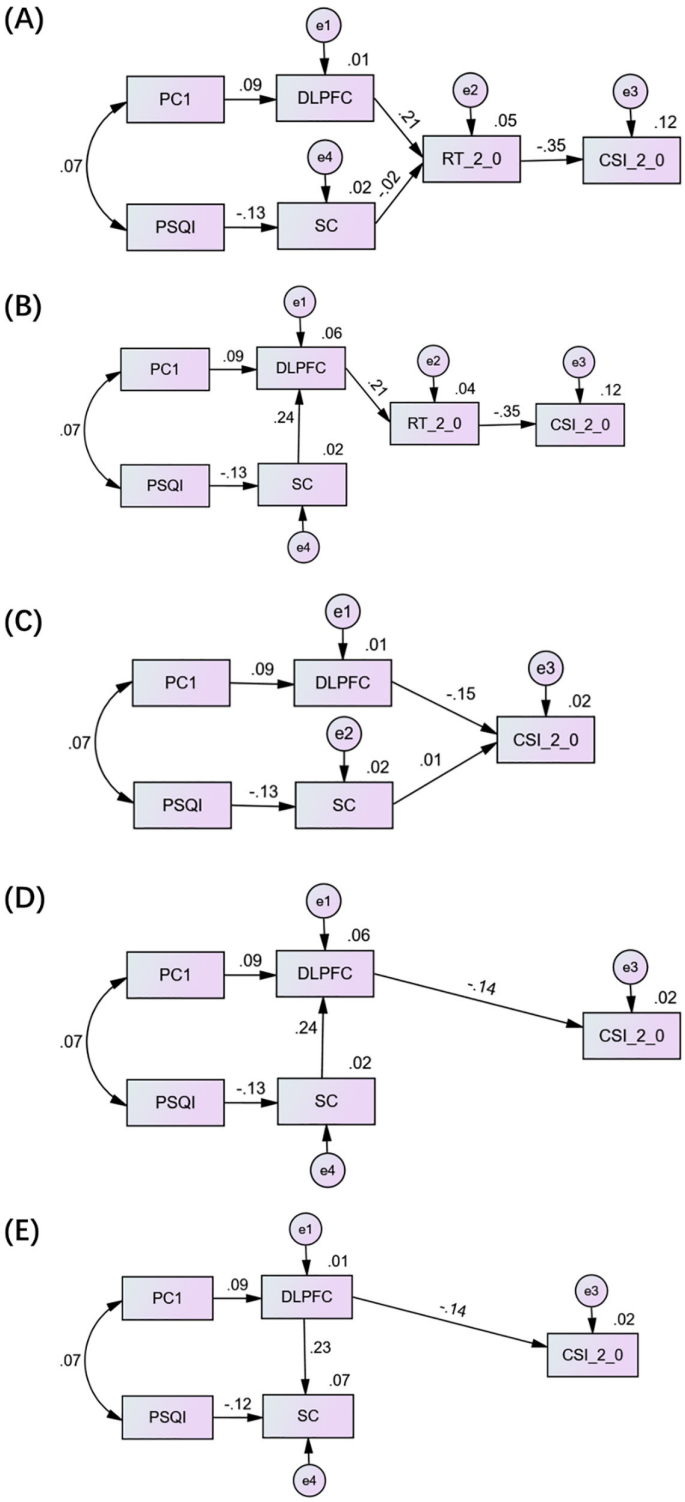

Figure S1 In women, path models to show the inter-relationship of drinking severity PC1, DLPFC_W β, PSQI, SC_W β, $RT_{2\text{-}0}$ and $CSI_{2\text{-}0}$. PC1, the first principal component from a principal component analysis of all drinking-related measures; DLPFC, dorsolateral prefrontal cortex; PSQI, Pittsburgh Sleep Quality Index; SC, superior colliculus; $RT_{2\text{-}0}$, difference in RT of correct trials between 2- and 0-back; $CSI_{2\text{-}0}$, difference in CSI between 2- and 0-back; DLPFC_W β, β estimate of DLPFC_W; SC_W β, β estimate of SC_W; DLPFC_W, a cluster located in dorsolateral prefrontal cortex and identified across women; SC_W, a cluster located in superior colliculus and identified across women.

https://dx.doi.org/10.21037/qims-24-156

Table S1 Mediation statistics of DLPFC β, $RT_{2\text{-}0}$ and $CSI_{2\text{-}0}$, with age, sex, and years of education as covariates

Model	Path a (X→M)	Path b (M→Y)	Path c (X→Y)	Path c' (X→Y)	Mediation Path (c-c')
Model 1: X (DLPFC β)→Y ($RT_{2\text{-}0}$) mediated by M ($CSI_{2\text{-}0}$)					
β	−0.044	−169.562	49.209	41.813	7.396
p	0.000	0.000	0.000	0.000	0.000
Model 2: X (DLPFC β)→Y ($CSI_{2\text{-}0}$) mediated by M ($RT_{2\text{-}0}$)					
β	49.209	−0.001	−0.044	−0.013	−0.031
p	0.000	0.000	0.000	0.119	0.000
Model 3: X ($RT_{2\text{-}0}$)→Y (DLPFC β) mediated by M ($CSI_{2\text{-}0}$)					
β	−0.001	−0.158	0.002	0.002	0.000
p	0.000	0.129	0.000	0.000	0.140
Model 4: X ($RT_{2\text{-}0}$)→Y ($CSI_{2\text{-}0}$) mediated by M (DLPFC β)					
β	0.002	−0.013	−0.001	−0.001	0.000
p	0.000	0.119	0.000	0.000	0.123
Model 5: X ($CSI_{2\text{-}0}$)→Y ($RT_{2\text{-}0}$) mediated by M (DLPFC β)					
β	−0.521	41.813	−191.349	−169.562	−21.787
p	0.000	0.000	0.000	0.000	0.000
Model 6: X ($CSI_{2\text{-}0}$)→Y (DLPFC β) mediated by M ($RT_{2\text{-}0}$)					
β	−191.349	0.002	−0.521	−0.158	−0.363
p	0.000	0.000	0.000	0.129	0.000

DLPFC β, β estimates of dorsolateral prefrontal cortex; $RT_{2\text{-}0}$, the difference in RT of correct trials between 2- and 0-back; $CSI_{2\text{-}0}$, difference in CSI between 2- and 0-back.

Table S2 Statistics of path analyses of drinking severity X (PC1), Y (DLPFC β), Z ($RT_{2\text{-}0}$) and D ($CSI_{2\text{-}0}$) without covariate or with age, sex, years of education as covariates

Model	CFI	RMSEA	SRMR	Chi-square/df
Model with no covariate				
X→Y→Z→D	1.000	0.000	0.014	0.86
Model with age as a covariate				
X→Y→Z→D	0.984	0.030	0.023	1.89
Model with age and sex as covariates				
X→Y→Z→D	0.991	0.024	0.020	1.59
Model with age, sex and years of education as covariates				
X→Y→Z→D	0.884	0.080	0.053	7.41

PC1, the first principal component from a principal component analysis of all drinking-related measures; DLPFC β, β estimates of dorsolateral prefrontal cortex; $RT_{2\text{-}0}$, the difference in RT of correct trials between 2- and 0-back; $CSI_{2\text{-}0}$, difference in CSI between 2- and 0-back; CFI, comparative fit index; RMSEA, root mean square estimation of approximation; SRMR, standardized root mean square residual.

https://dx.doi.org/10.21037/qims-24-156

Table S3 Statistics of path models of *Figure S1*

Figure	CFI	RMSEA	SRMR	Chi-square/df
Figure S1A	0.770	0.081	0.059	7.56
Figure S1B	0.991	0.016	0.022	1.26
Figure S1C	0.456	0.106	0.066	12.04
Figure S1D	1.000	0.000	0.015	0.66
Figure S1E	0.995	0.010	0.020	1.10

CFI, comparative fit index; RMSEA, root mean square estimation of approximation; SRMR, standardized root mean square residual.

https://dx.doi.org/10.21037/qims-24-156