

Supplementary Information

Association between dietary patterns and premenstrual disorders: a cross-sectional analysis of 1382 college students in China

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Table S1. Factor loading matrix of major dietary patterns by principal component analysis with varimax rotation.

	Traditional North China Diet (TNCD)	Traditional South China Diet (TSCD)	Lacto-ovo Vegetarian Diet (LVD)
Rice	-0.08	0.74	-0.11
Wheat	0.56	0.32	-0.04
Other staple food	0.68	-0.03	0.13
Red meat	0.1	0.71	0.11
Poultry	0.27	0.53	0.15
Fish/seafood	0.62	0.06	0.22
Eggs	0.25	0.24	0.48
Soy products	0.38	0.28	0.39
Preserved vegetables	0.66	-0.01	0.06
Fresh vegetables	-0.07	0.50	0.52
Fresh fruits	0.11	-0.07	0.75
Dairy products	0.09	-0.01	0.71

Note: 47% cumulative variance was explained in this model.

Table S2. Associations between food consumption frequency (measured by days per week) and premenstrual disorders (PMDs).

	Food consumption frequency in participants without PMDs (Mean [SD]), N=1045	Food consumption frequency in participants with PMDs(Mean [SD]), N=337	Crude Model OR (95%CI)	Model 2^a OR (95%CI)	Model 3^b OR (95%CI)^a
Rice	5.67 (1.65)	5.48 (1.81)	0.94 (0.88–1.01)	0.94 (0.87–1.00)	0.93 (0.87–1.00)
Wheat	3.38 (2.00)	3.21 (2.01)	0.96 (0.91–1.02)	0.96 (0.91–1.02)	0.96 (0.90–1.02)
Other staple food	1.12 (1.61)	1.22 (1.71)	1.04 (0.96–1.11)	1.04 (0.97–1.12)	1.04 (0.97–1.12)
Red meat	5.15 (2.09)	5.03 (2.13)	0.97 (0.92–1.03)	0.97 (0.92–1.03)	0.97 (0.92–1.03)
Poultry	4.11 (2.17)	3.91 (2.16)	0.96 (0.91–1.01)	0.96 (0.91–1.02)	0.96 (0.90–1.01)
Fish/seafood	1.10 (1.28)	1.13 (1.33)	1.02 (0.92–1.11)	1.01 (0.92–1.11)	1.02 (0.93–1.12)
Eggs	3.55 (2.40)	3.45 (2.36)	0.98 (0.93–1.04)	0.98 (0.93–1.04)	0.98 (0.93–1.04)
Soy products	3.10 (2.22)	2.93 (2.21)	0.97 (0.91–1.02)	0.97 (0.91–1.02)	0.96 (0.91–1.02)
Fresh vegetables	0.83 (1.28)	0.84 (1.36)	1.01 (0.91–1.10)	1.01 (0.91–1.10)	1.01 (0.92–1.10)
Preserved vegetables	5.41 (1.86)	5.44 (1.85)	1.01 (0.94–1.08)	1.01 (0.94–1.08)	1.01 (0.94–1.08)
Fresh fruits	3.40 (2.10)	3.39 (2.14)	1.00 (0.94–1.06)	1.00 (0.94–1.06)	1.01 (0.95–1.07)
Dairy products	3.63 (2.29)	3.33 (2.31)	0.94 (0.89–1.00)	0.95 (0.90–1.00)	0.95 (0.90–1.01)

Abbreviations: adverse childhood experiences (ACEs), body mass index (BMI), confidence interval (CI), OR odds ratio (OR), standard deviation (SD).

a. Adjusted for age and school.

b. Additionally adjusted for BMI group, ACEs, and alcohol consumption.

Table S3. Associations between Traditional South China Diet (TSCD) adherence and premenstrual disorders (PMDs) symptoms (z score).

	No. of participants with symptoms ^a	Symptom score (Mean[SD])	Fully adjusted β (95%CI) ^b
Overall symptoms	1288	14.45 (12.01)	-0.11 (-0.16 to -0.05)
Affective symptoms	1058	5.35 (5.19)	-0.08 (-0.13 to -0.02)
Anxiety	641	0.62 (0.77)	-0.03 (-0.09 to 0.02)
Irritability	759	0.79 (0.85)	-0.07 (-0.12 to -0.02)
Emotional hypersensitivity	889	0.97 (0.89)	-0.04 (-0.10 to 0.01)
Mood swings	896	0.96 (0.87)	-0.07 (-0.12 to -0.01)
Tearfulness	512	0.55 (0.82)	-0.05 (-0.10 to 0.01)
Angry outbursts	503	0.50 (0.76)	-0.07 (-0.12 to -0.01)
Increased desire to be alone	452	0.41 (0.67)	-0.09 (-0.14 to -0.03)
Depression	570	0.55 (0.74)	-0.08 (-0.14 to -0.03)
Physical/behavioral symptoms	1273	9.09 (12.01)	-0.12 (-0.17 to -0.06)
Abdominal bloating	735	0.72 (0.78)	-0.07 (-0.12 to -0.01)
Breast tenderness	635	0.64 (0.79)	-0.06 (-0.11 to -0.01)
Dizziness	235	0.21 (0.50)	-0.06 (-0.11 to -0.00)
Headache	219	0.21 (0.53)	-0.07 (-0.12 to -0.01)
Hot flashes	277	0.24 (0.53)	-0.06 (-0.11 to -0.01)
Nausea	206	0.18 (0.47)	-0.07 (-0.12 to -0.02)
Swelling in the extremities	217	0.19 (0.48)	-0.08 (-0.14 to -0.03)
Acne	834	0.85 (0.82)	-0.05 (-0.10 to 0.01)
Diarrhea	699	0.71 (0.82)	-0.08 (-0.13 to -0.03)
Food cravings	614	0.65 (0.84)	-0.08 (-0.13 to -0.03)
Palpitations	208	0.18 (0.46)	-0.05 (-0.11 to 0.00)
Increased appetite	556	0.57 (0.78)	-0.05 (-0.10 to 0.00)
Decreased appetite	238	0.21 (0.51)	-0.07 (-0.12 to -0.01)
Fatigue	957	1.02 (0.85)	-0.07 (-0.12 to -0.01)
Insomnia	306	0.29 (0.62)	-0.07 (-0.12 to -0.02)
Confusion	542	0.52 (0.73)	-0.07 (-0.12 to -0.01)
Forgetfulness	309	0.28 (0.58)	-0.07 (-0.12 to -0.02)
Abdominal cramping	616	0.65 (0.86)	-0.09 (-0.14 to -0.03)
Lower back pain	728	0.77 (0.86)	-0.09 (-0.14 to -0.03)

Abbreviations: confidence interval (CI), standard deviation (SD).

a. Reporting symptoms were classified as none/minimal, mild, moderate, or severe, which were coded as 0, 1, 2, and 3, respectively.

Table S4. Sensitivity analysis of the association between Traditional South China Diet (TSCD) adherence and premenstrual disorders (PMDs).

	Participants without PMDs, (N = 579)	Participants with PMDs, (N = 183)	Fully adjusted OR (95%CI)^a
TSCD (z score), Mean (SD)	0.07 (1.00)	-0.11 (0.98)	0.83 (0.70–0.98)
TSCD (quintiles), N (%)			
Q1	98 (18.2)	38 (21.7)	Ref.
Q2	99 (18.4)	41 (23.4)	1.10 (0.65–1.87)
Q3	110 (20.4)	35 (20.0)	0.79 (0.46–1.36)
Q4	112 (20.8)	34 (19.4)	0.79 (0.45–1.36)
Q5	120 (22.3)	27 (15.4)	0.57 (0.32–0.99)
<i>P-for-trend</i>			0.028

Abbreviations: confidence interval (CI), OR odds ratio (OR), standard deviation (SD).

- a. Adjusted for age, school, categorical body mass index (BMI) group, adverse childhood experiences (ACEs), and alcohol consumption.