

Body mass index mediates the association between disordered eating and cardiometabolic risks: evidence from the China Health and Nutrition Survey

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Background

- Cardiometabolic diseases are major public health concerns in China.
- Disordered eating (DE) is associated with elevated cardiometabolic risks (CMR), such as dyslipidemia, hypertriglyceridemia, hypertension, and type-2 diabetes.
- Most previous studies were conducted in clinical settings in Western countries with small samples.
- Body mass index (BMI) is important in the association between DE and CMR, yet no study has formally tested its potential mediating role.
- **We investigated the association between DE and CMR in a large population-based sample of women in mainland China and tested the mediating role of BMI.**

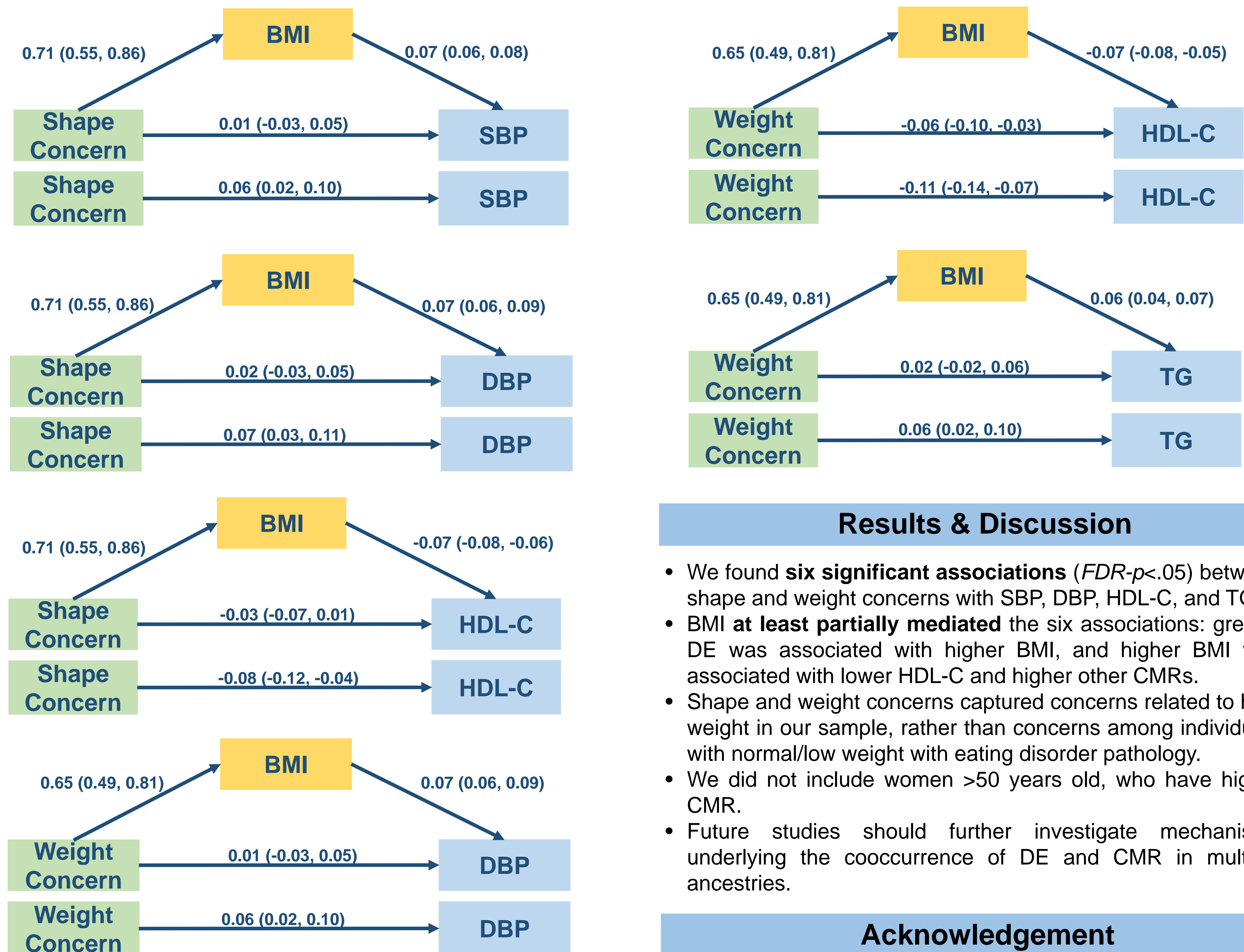
Methods

- **Participants:** 2,005 women (18-50 years old) from the 2015 wave of the China Health and Nutrition Survey.
- **Exposures:** self-reported DE characteristics (loss of control eating, restraint, shape concern, weight concern).
- **Outcomes:** staff measured CMRs (BMI, WHR, SBP, DBP, HbA1c, glucose, TC, HDL-C, LDL-C, TG).
- **Statistical analysis:**
 - Generalized linear models to examine associations between each DE characteristic with each CMR, adjusting for age and education level.
 - False discovery rate used for multiple testing correction.
 - Structural equation modeling to test if BMI mediated significant associations between DE and CMR.

Table 1. Characteristics of participants from the 2015 wave of the China Health and Nutrition Survey (N=2,005).

Age (year), Mean (SD)	38.38 (7.97)
BMI (kg/m ²), Mean (SD)	23.51 (3.76)
Per capita household income (Chinese Yuan), Mean (SD)	23521.27 (41480.83)
Rural setting (vs. urban), n (%)	1,324 (66.03)
Education, n (%)	
None or primary education	274 (13.67)
Middle education	1,007 (50.22)
Technical or vocational degree	193 (9.63)
University degree or higher	405 (20.20)

Figure 1. BMI mediating six significant associations between DE with CMR



Note: SBP: systolic blood pressure; DBP: diastolic blood pressure; HDL-C: high-density lipoprotein cholesterol; TG: triglycerides. Standardized regression coefficient (β) displayed in each figure.

Results & Discussion

- We found **six significant associations** ($FDR-p < .05$) between shape and weight concerns with SBP, DBP, HDL-C, and TG.
- BMI **at least partially mediated** the six associations: greater DE was associated with higher BMI, and higher BMI was associated with lower HDL-C and higher other CMRs.
- Shape and weight concerns captured concerns related to high weight in our sample, rather than concerns among individuals with normal/low weight with eating disorder pathology.
- We did not include women >50 years old, who have higher CMR.
- Future studies should further investigate mechanisms underlying the cooccurrence of DE and CMR in multiple ancestries.

Acknowledgement



This work is supported by grants from the National Institute on Alcohol Abuse and Alcoholism (K01 AA025113), the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R01 HD30880), the National Institute on Aging (R01 AG065357), and the National Institute of Diabetes and Digestive and Kidney Diseases (R01 DK104371).