Supplementary results

Table S1. Spearman correlation coefficients between oxytocin, eating behavior, and metabolic parameters.

Variable 1	Variable 2	Spearman r	p-value
Oxytocin	EDE-Q Global	−0.611	<0.001
Oxytocin	HOMA-IR	−0.419	<0.001
Oxytocin	VAI	−0.547	<0.001
Oxytocin	HSI	−0.444	<0.001
Oxytocin	Emotional eating (EE)	−0.617	<0.001
Oxytocin	External eating (EX)	−0.572	<0.001
EDE-Q Global	HOMA-IR	0.580	<0.001

Spearman rank correlation coefficients (r) are presented. All p-values are two-tailed. EDE-Q = Eating Disorder Examination Questionnaire; HOMA-IR = Homeostatic Model Assessment of Insulin Resistance; VAI = Visceral Adiposity Index; HSI = Hepatic Steatosis Index; EE = Emotional eating; EX = External eating.

Table S2. EBA-O domain scores according to descriptive EDE-Q symptom burden categories.

EBA-O Domain	Overall (N = 99)	Lower EDE-Q (n = 33)	Higher EDE-Q (n = 66)	p-value
Food Addiction	0.66 (0.20–2.00)	0.20 (0.10–0.20)	1.73 (0.70–2.33)	<0.001
Night Eating	0.00 (0.00–1.00)	0.00 (0.00–0.00)	0.50 (0.00–1.20)	<0.001
Binge Eating	1.50 (0.30–4.00)	0.30 (0.20–0.30)	3.00 (1.50–4.62)	<0.001
Sweet Eating	0.80 (0.70–3.90)	0.80 (0.70–0.80)	3.00 (0.00–4.50)	0.001
Hyperphagia	1.00 (0.30–2.00)	0.30 (0.20–0.30)	1.77 (1.05–2.47)	<0.001

EBA-O = Eating Behavior Assessment for Obesity.

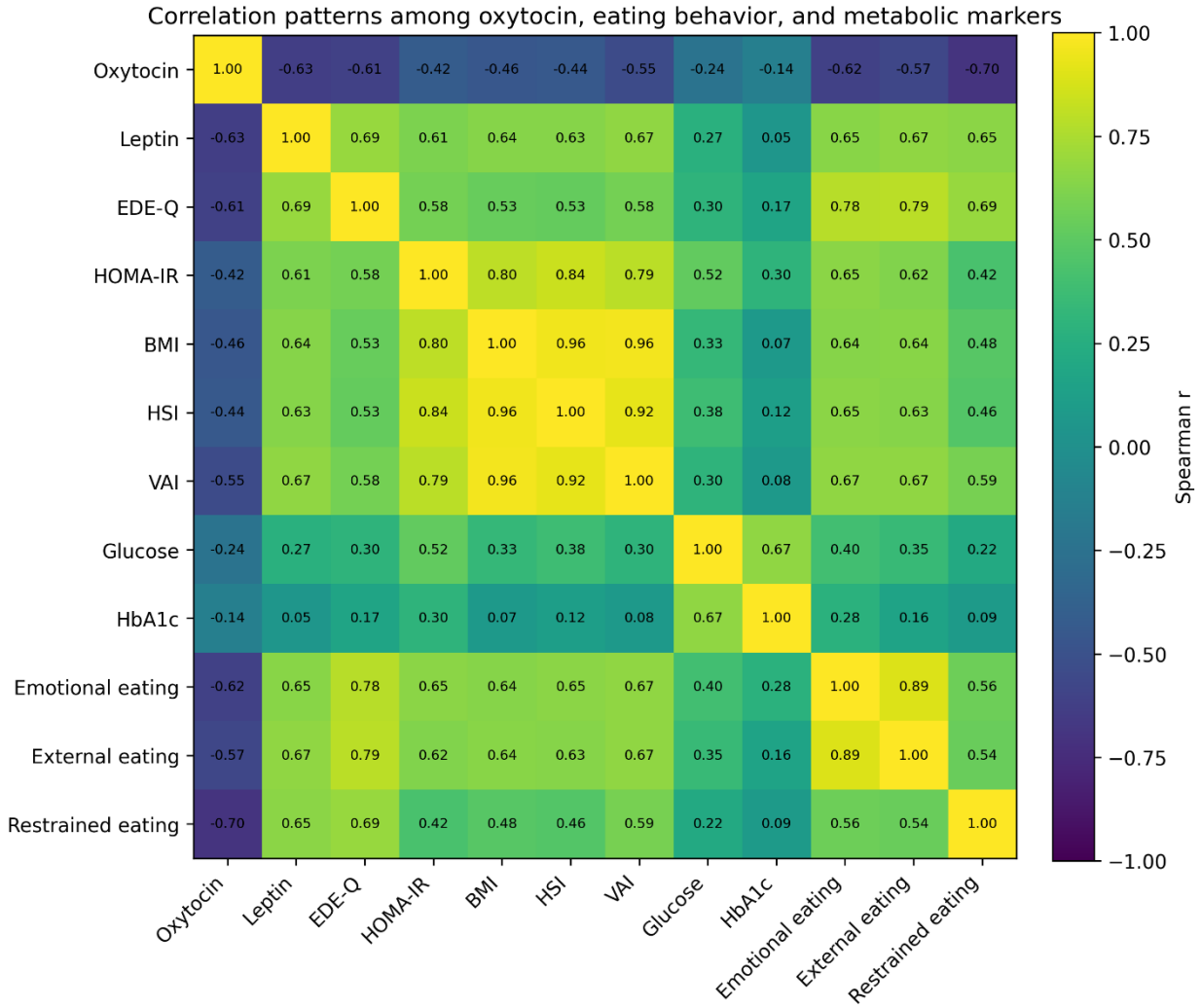

Figure S1. Correlation patterns among neuroendocrine, behavioral, and metabolic variables.

Spearman correlation heatmap illustrating associations among plasma oxytocin concentrations, leptin, eating behavior measures (EDE-Q, emotional eating, external eating, and restrained eating), and metabolic indices (BMI, HOMA-IR, HSI, VAI, glucose, and HbA1c). Correlation coefficients are displayed within cells. Positive correlations are shown by warmer colors and negative correlations by cooler colors. The figure provides an overview of the interrelationships among neuroendocrine, behavioral, and metabolic domains examined in the study.

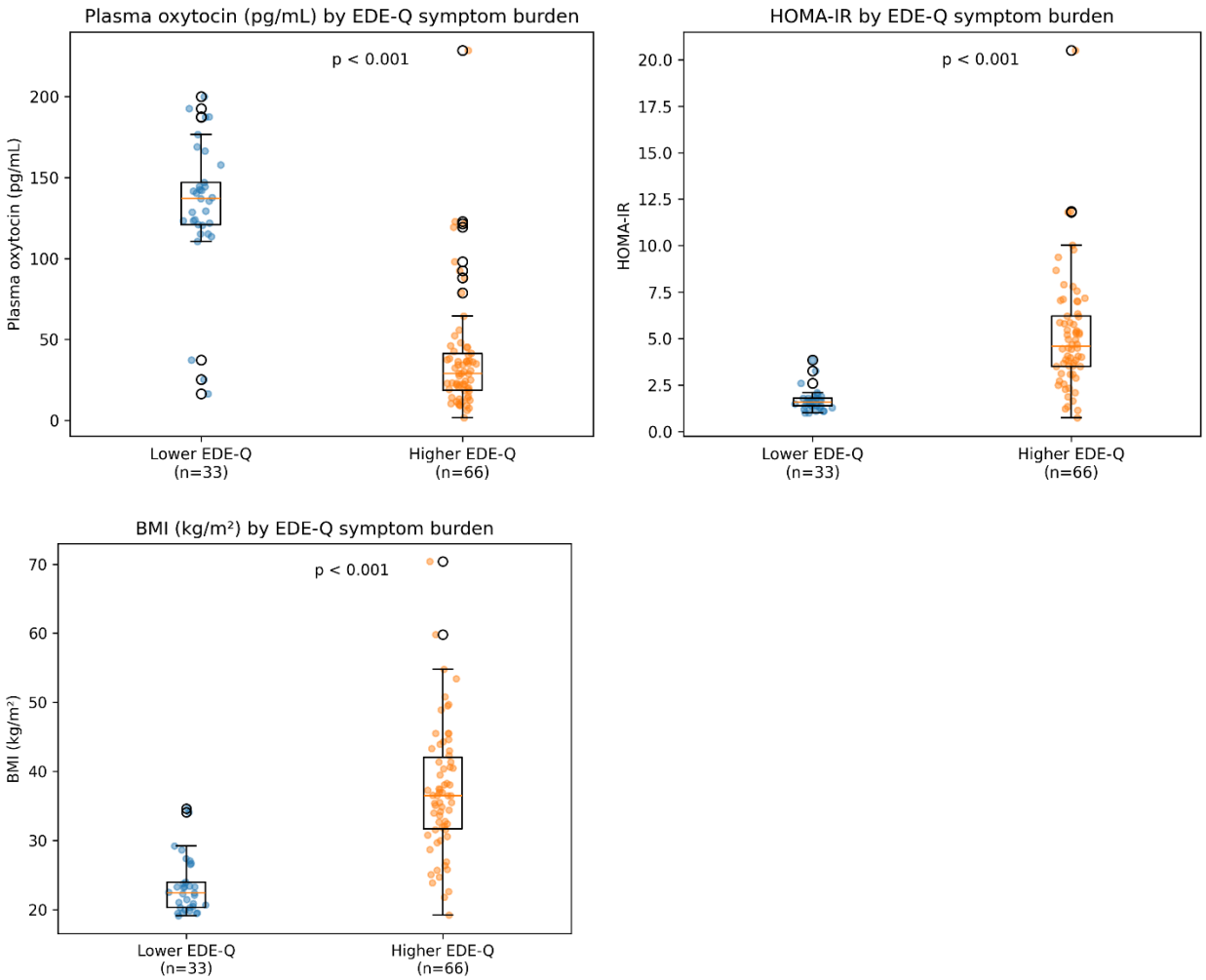

Figure S2. Group differences according to EDE-Q symptom burden categories.

Plasma oxytocin concentrations, HOMA-IR, and body mass index (BMI) stratified by EDE-Q symptom burden categories (<2.3 vs. ≥2.3). Boxplots display the median, interquartile range, and individual observations. Participants with higher eating psychopathology exhibited lower oxytocin concentrations and higher levels of insulin resistance and adiposity. P-values were calculated using the Mann–Whitney U test.

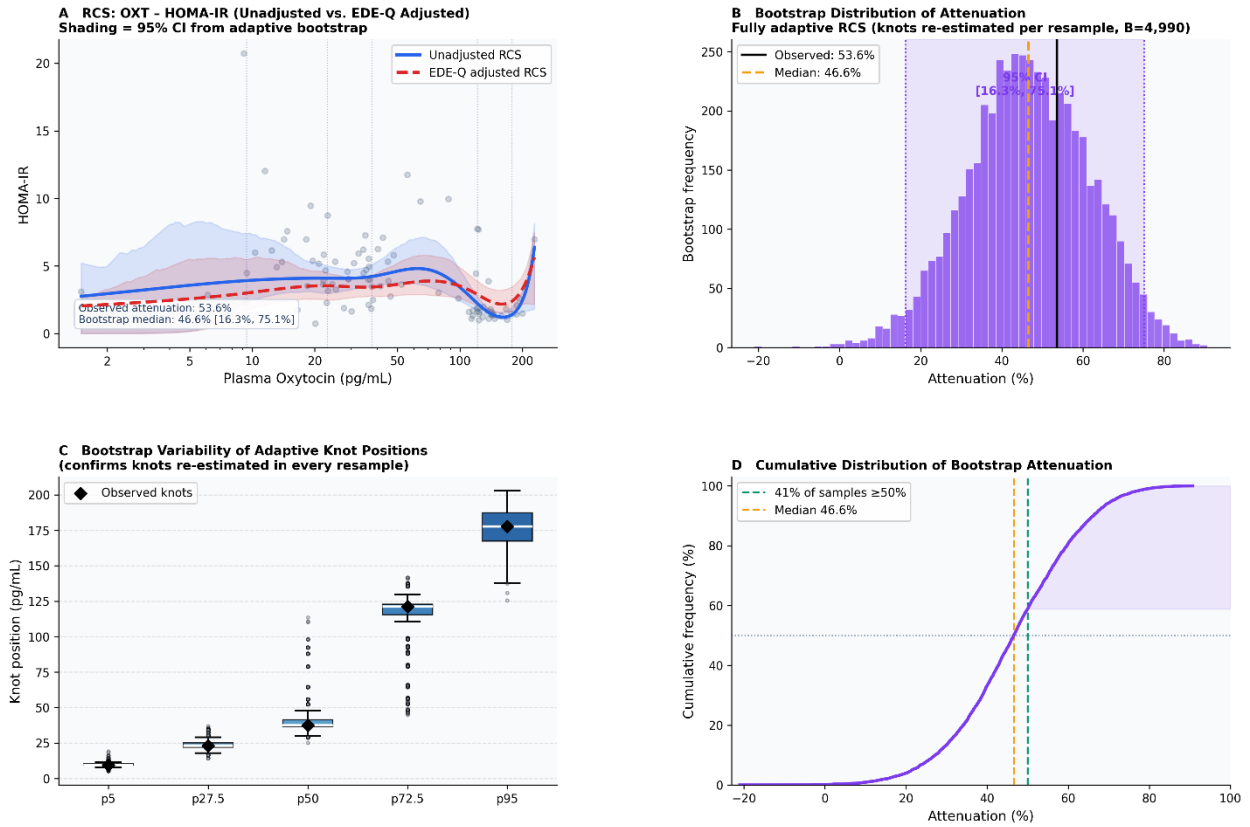

Figure S3. Exploratory restricted cubic spline (RCS) analysis of the association between plasma oxytocin concentrations and HOMA-IR before and after adjustment for EDE-Q global score.

Panel A shows adaptive RCS curves fitted before (solid blue line) and after (dashed red line) adjustment for EDE-Q. Shaded regions indicate bootstrap-derived 95% confidence intervals. Panel B presents the bootstrap distribution of attenuation in curve amplitude following adjustment for EDE-Q. Panel C shows the variability of knot positions across bootstrap resamples, confirming adaptive knot placement. Panel D displays the cumulative distribution of attenuation estimates. These analyses were performed post hoc to explore whether eating psychopathology contributed to the non-linear association between oxytocin and insulin resistance and should be interpreted as exploratory rather than confirmatory.