

Table 2 Multivariable-adjusted ORs and 95% CIs for depression, anxiety and high psychological distress across categories of BMI and waist circumference for men^a

	BMI status ^b				P _{trend}	WC status ^c			P _{trend}
	Normal weight	Overweight	Obese			Normal	Abdominal obesity level 1	Abdominal obesity level 2	
Depression (borderline+severe)									
Crude	1.0	0.80 (0.64–1.01)	1.28 (0.89–1.84)	0.95	1.0	0.98 (0.70–1.34)	0.84 (0.56–1.26)	0.48	
Adjusted ^d	1.0	0.89 (0.66–1.21)	1.50 (0.93–2.42)	0.38	1.0	1.04 (0.70–1.55)	0.71 (0.42–1.20)	0.40	
Depression (severe)									
Crude	1.0	0.82 (0.56–1.20)	1.14 (0.62–2.10)	0.83	1.0	0.92 (0.54–1.58)	0.49 (0.21–1.12)	0.16	
Adjusted	1.0	0.83 (0.48–1.44)	1.44 (0.61–3.38)	0.79	1.0	0.95 (0.46–1.95)	0.21 (0.04–0.95)	0.10	
Depression (borderline)									
Crude	1.0	0.80 (0.61–1.04)	1.34 (0.89–2.02)	0.83	1.0	0.99 (0.68–1.45)	1.0 (0.64–1.57)	0.98	
Adjusted	1.0	0.92 (0.65–1.29)	1.50 (0.88–2.55)	0.37	1.0	1.10 (0.70–1.73)	0.91 (0.52–1.59)	0.98	
Anxiety (borderline+severity)									
Crude	1.0	0.94 (0.68–1.28)	1.0 (0.59–1.71)	0.85	1.0	1.10 (0.69–1.75)	0.90 (0.49–1.64)	0.96	
Adjusted	1.0	1.02 (0.66–1.57)	0.86 (0.38–1.92)	0.85	1.0	0.91 (0.50–1.66)	0.57 (0.24–1.34)	0.26	
Anxiety (severe)									
Crude	1.0	1.03 (0.64–1.68)	1.16 (0.53–2.55)	0.72	1.0	1.03 (0.49–2.18)	1.44 (0.64–3.21)	0.47	
Adjusted	1.0	1.41 (0.70–2.81)	1.35 (0.43–4.29)	0.38	1.0	0.77 (0.28–2.09)	0.58 (0.16–2.14)	0.38	
Anxiety (borderline)									
Crude	1.0	0.87 (0.58–1.31)	0.92 (0.46–1.85)	0.61	1.0	1.17 (0.66–2.09)	0.60 (0.24–1.45)	0.59	
Adjusted	1.0	0.89 (0.52–1.52)	0.66 (0.22–1.94)	0.44	1.0	1.07 (0.50–2.24)	0.58 (0.19–1.76)	0.54	
Psychological distress									
Crude	1.0	0.91 (0.71–1.17)	0.82 (0.52–1.28)	0.31	1.0	1.19 (0.84–1.68)	0.92 (0.58–1.44)	0.79	
Adjusted	1.0	1.05 (0.76–1.45)	1.01 (0.58–1.76)	0.84	1.0	0.99 (0.65–1.53)	0.66 (0.37–1.18)	0.30	

^aSevere anxiety and depression was defined as Hospital Anxiety and Depression Scale score ≥ 11 ; 8–10 was considered as borderline. Psychological distress was defined as General Health Questionnaire score ≥ 4 .

^bNormal weight (≤ 24.9 kg/m²), overweight (25.0–29.9 kg/m²) and obesity (≥ 30.0 kg/m²).

^cNormal (< 94 cm), abdominal obesity level 1 (94–101.99 cm), abdominal obesity level 2 (≥ 102 cm).

^dAdjusted for age, marital status, education, smoking and physical activity.

BMI = body mass index; CI = confidence interval; OR = odds ratio; WC = waist circumference.

(BMI ≥ 40 kg/m²) individuals. Although overweight and obesity were highly prevalent in our study, the prevalence of severe obesity was not so high. Different types of obesity and location of fat accumulation might affect psychological disorders. We discovered a significant positive relationship between abdominal obesity and depression, anxiety and high psychological distress in crude models. However, the relationships disappeared after adjusting for potential confounders. A positive association was reported between waist to height ratio and anxiety in women, independent of confounders. However, some studies have proposed that central obesity

does not impose further risk for depressive disorders compared with that for general obesity (25,26).

In the current study, there was no association between general obesity and depression, anxiety and high psychological distress, neither in men nor in women. However, while there was a positive link between abdominal obesity and these psychological disorders in women, an inverse relationship between abdominal obesity and severe depression was observed in men. Earlier studies have mostly shown that abdominal obesity is connected with these psychological disorders