

Supplementary Appendices

Table 1S: Urbanicity - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI classification on urbanicity with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for gender, age strata, and income quintile, World Health Survey, 2002–2003.

Table 2S: Sex -Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI classification on male sex with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and income quintile, World Health Survey, 2002–2003.

Table 3S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI underweight classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

Table 4S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI overweight classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

Table 5S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI obese classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

Socio-economic disparities in obesity and underweight

Table 1S: Urbanicity - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI classification on urbanicity with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for gender, age strata, and income quintile, World Health Survey, 2002–2003.

	Underweight Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)	Overweight Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)	Obese Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)	No. Clusters	Sample Size
Bangladesh ^a	1.01 (0.58-1.77)	0.75 (0.44-1.27)	0.47 (0.14-1.56)	167	803
Bosnia and Herzegovina	1.19 (0.44-3.22)	1.36 (0.97-1.92)	1.87* (1.05-3.34)	112	995
Brazil	2.08** (1.21-3.60)	1.25* (1.01-1.56)	0.79 (0.52-1.20)	242	4147
Burkina Faso ^a	1.54 (0.75-3.18)	1.06 (0.73-1.53)	4.88* (1.17-20.32)	117	1620
Chad	0.97 (0.58-1.63)	0.97 (0.72-1.30)	1.28 (0.74-2.20)	103	3172
China	0.73 (0.48-1.10)	1.08 (0.67-1.73)	1.94 (0.84-4.43)	30	3846
Comoros	1.38 (0.82-2.31)	1.44 (0.96-2.15)	1.74 (0.79-3.83)	49	1622
Congo	0.95 (0.48-1.87)	1.36 (0.88-2.09)	2.83 (0.86-9.29)	108	2061
Côte d'Ivoire	0.97 (0.65-1.44)	1.05 (0.82-1.35)	1.18 (0.75-1.87)	172	2651
Croatia	2.56 (0.77-8.48)	1.03 (0.72-1.48)	0.75 (0.49-1.16)	184	911
Czech Republic ^b	1.06 (0.33-3.47)	0.86 (0.58-1.27)	0.62 (0.36-1.08)	188	853
Dominican Republic	0.81 (0.58-1.12)	1.18 (0.96-1.46)	1.36* (1.01-1.83)	250	2980
Ecuador	0.78 (0.48-1.28)	0.92 (0.76-1.12)	1.00 (0.71-1.42)	220	3496
Estonia	0.24 (0.09-0.60)	1.17 (0.86-1.59)	0.82 (0.58-1.16)	49	955
Ethiopia ^a	0.70 (0.26-1.85)	1.30 (0.71-2.39)	1.25 (0.26-6.05)	94	919
Georgia	2.01 (0.93-4.36)	1.03 (0.75-1.41)	1.34 (0.82-2.19)	68	2579
Ghana	0.99 (0.76-1.28)	1.41* (1.08-1.86)	2.63*** (1.57-4.39)	269	3310
Guatemala ^c	1.43	1.21	0.84	---	2869

Socio-economic disparities in obesity and underweight

	(0.81-2.50)	(0.99-1.48)	(0.62-1.14)		
Hungary	0.90 (0.44-1.87)	0.96 (0.74-1.24)	0.82 (0.58-1.16)	194	1299
India	0.89 (0.74-1.08)	1.75*** (1.42-2.14)	1.76*** (1.16-2.67)	369	7306
Kazakhstan	1.02 (0.59-1.77)	1.00 (0.84-1.19)	0.74 (0.54-1.03)	65	4186
Kenya	0.86 (0.66-1.12)	2.00 (1.62-2.48)	2.76 (1.96-3.89)	275	4020
Laos	0.63* (0.44-0.91)	1.33 (0.99-1.80)	1.86 (0.97-3.56)	248	3536
Latvia ^b	2.15 (0.38-12.07)	0.71* (0.51-0.98)	0.75 (0.45-1.23)	133	714
Malawi	0.92 (0.64-1.31)	1.25 (0.97-1.61)	1.55 (1.00-2.42)	71	4855
Malaysia	1.07 (0.83-1.39)	0.88 (0.74-1.05)	0.64*** (0.50-0.82)	390	4546
Mali ^b	1.26 (0.50-3.17)	1.25 (0.66-2.37)	1.43 (0.50-4.09)	173	326
Mauritania	1.04 (0.61-1.76)	0.97 (0.67-1.41)	1.22 (0.74-2.00)	156	2586
Mauritius	1.17 (0.80-1.71)	0.84 (0.67-1.07)	0.80 (0.53-1.22)	100	2423
Mexico	1.04 (0.79-1.36)	1.07 (0.98-1.17)	1.03 (0.90-1.18)	453	22668
Morocco	1.65 (0.75-3.63)	1.02 (0.64-1.61)	0.94 (0.47-1.89)	244	1722
Myanmar	1.34 (0.96-1.86)	1.74*** (1.29-2.35)	1.98* (1.01-3.89)	110	5539
Namibia	0.85 (0.65-1.10)	1.02 (0.82-1.27)	1.09 (0.76-1.56)	229	3451
Nepal	0.79 (0.58-1.09)	1.18 (0.87-1.59)	0.30** (0.13-0.70)	267	2608
Pakistan	0.84 (0.62-1.13)	1.01 (0.78-1.30)	1.29 (0.85-1.96)	285	2835
Paraguay	1.31 (0.90)	1.12 (0.94-1.33)	1.09 (0.84-1.41)	498	4505
Philippines	1.01 (0.81-1.26)	1.12 (0.91-1.37)	1.36 (0.96-1.92)	238	7557
Russian Federation	0.84 (0.32-2.19)	0.86 (0.66-1.10)	0.69 (0.45-1.05)	123	3373
Senegal	1.09 (0.74-1.59)	1.06 (0.74-1.53)	0.99 (0.45-2.19)	225	1271
Slovakia ^d	2.09 (0.58-7.53)	0.57** (0.39-0.84)	0.32*** (0.19-0.54)	282	1650
Slovenia ^{c,e}	---	---	---	---	550
South Africa ^b	0.69 (0.42-1.14)	0.86 (0.60-1.22)	0.57 (0.34-0.95)	151	1256
Spain	1.06	0.82*	0.89	993	5964

Socio-economic disparities in obesity and underweight

	(0.63-1.77)	(0.71-0.94)	(0.74-1.07)		
Sri Lanka	0.62*** (0.48-0.80)	1.25 (0.98-1.60)	1.30 (0.79-2.15)	144	4661
Swaziland	0.71 (0.26-1.91)	0.85 (0.62-1.18)	1.17 (0.83-1.64)	95	1581
Tunisia	0.84 (0.54-1.31)	1.15 (0.92-1.45)	1.52* (1.02-2.27)	265	4117
Turkey ^f	1.02 (0.80-1.31)	1.00 (0.90-1.12)	1.15 (0.98-1.35)	471	8041
Ukraine	1.54 (0.74-3.18)	0.88 (0.66-1.16)	0.78 (0.55-1.12)	111	2187
United Arab Emirates	1.49 (0.58-3.83)	0.77 (0.54-1.09)	0.45 (0.28-0.75)	60	1084
Uruguay	2.07 (0.89-4.82)	0.75 (0.58-0.98)	1.42 (0.94-2.14)	61	2847
Vietnam	0.86 (0.64-1.14)	1.11 (0.54-2.29)	---	137	2995
Zambia ^c	1.52 (1.02-2.26)	1.11 (0.86-1.45)	1.25 (0.80-1.95)	---	2139
Zimbabwe	0.93 (0.61-1.42)	1.05 (0.85-1.31)	1.45* (1.05-2.00)	125	2388

*Boded indicates significance ($p < 0.05$).

^aAdjusted using income as continuous variable and age as 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^bAdjusted using age as a 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^cRobust standard errors.

^dAdjusted using age as continuous variable.

^eUnadjusted for urbanicity.

^fUnadjusted for income.

Socio-economic disparities in obesity and underweight

Table 2S: Sex - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI classification on male sex with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and income quintile, World Health Survey, 2002–2003.

Country	Underweight Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)	Overweight Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)	Obese Relative Risk Ratio (RRR) 95% Confidence Intervals (95%CI)
Bangladesh ^a	1.43 (0.69-2.96)	0.71 (0.39-1.31)	0.54 (0.12-2.49)
Bosnia and Herzegovina	0.71 (0.32-1.56)	1.19 (0.87-1.62)	0.50 (0.27-0.93)
Brazil	0.57 (0.42-0.79)	1.15 (1.00-1.33)	0.72 (0.57-0.91)
Burkina Faso ^a	0.89 (0.53-1.50)	0.84 (0.66-1.08)	0.41 (0.21-0.82)
Chad	0.91 (0.65-1.27)	0.97 (0.81-1.16)	1.14 (0.84-1.56)
China	0.85 (0.65-1.12)	1.04 (0.82-1.33)	0.64 (0.32-1.30)
Comoros	0.51 (0.33-0.78)	0.77 (0.61-0.97)	0.29 (0.12-0.70)
Congo	0.95 (0.71-1.27)	0.96 (0.74-1.24)	0.61 (0.38-1.01)
Côte d'Ivoire	0.65 (0.46-0.92)	0.82 (0.68-1.00)	0.32 (0.21-0.48)
Croatia	0.35 (0.08-1.41)	1.41 (1.05-1.89)	0.98 (0.64-1.52)
Czech Republic ^b	0.12 (0.02-0.63)	2.17 (1.62-2.90)	1.43 (0.92-2.22)
Dominican Republic	0.70 (0.51-0.95)	1.27 (1.06-1.51)	1.00 (0.78-1.29)
Ecuador	0.96 (0.65-1.43)	1.31 (1.13-1.52)	0.53 (0.40-0.69)
Estonia	0.19 (0.04-0.85)	0.90 (0.69-1.18)	0.47 (0.32-0.69)
Ethiopia ^a	0.78 (0.45-1.36)	0.62 (0.36-1.06)	0.47 (0.15-1.44)
Georgia	0.34 (0.18-0.62)	1.47 (1.18-1.85)	0.81 (0.60-1.10)
Ghana	1.19 (0.95-1.49)	0.56 (0.46-0.68)	0.24 (0.16-0.37)
Guatemala ^c	1.25 (0.79-1.96)	0.79 (0.66-0.94)	0.47 (0.35-0.63)
Hungary	0.19 (0.07-0.52)	1.48 (1.13-1.93)	0.98 (0.71-1.37)
India	1.51 (1.34-1.71)	0.77 (0.64-0.93)	0.44 (0.32-0.62)
Kazakhstan	0.30 (0.19-0.46)	1.15 (0.95-1.38)	0.44 (0.33-0.59)
Kenya	1.91 (1.55-2.37)	0.56 (0.46-0.69)	0.32 (0.22-0.47)
Laos	1.02 (0.80-1.30)	0.76 (0.61-0.93)	0.52 (0.26-1.03)
Latvia ^b	0.25 (0.05-1.28)	1.20 (0.80-1.80)	0.49 (0.28-0.84)
Malawi	0.84 (0.65-1.09)	1.15 (0.99-1.33)	0.89 (0.66-1.19)
Malaysia	1.43 (1.13-1.79)	1.06 (0.92-1.23)	0.72 (0.57-0.90)
Mali ^b	1.06 (0.28-4.03)	0.63 (0.27-1.50)	0.87 (0.21-3.71)
Mauritania	1.34 (0.95-1.89)	0.49 (0.39-0.62)	0.32 (0.21-0.47)
Mauritius	0.85 (0.60-1.19)	0.90 (0.70-1.15)	0.65 (0.46-0.93)
Mexico	1.01 (0.82-1.26)	1.12 (1.05-1.19)	0.60 (0.55-0.65)
Morocco	0.88 (0.54-1.44)	0.56 (0.42-0.73)	0.24 (0.16-0.36)
Myanmar	1.03 (0.84-1.26)	0.61 (0.49-0.75)	0.57 (0.33-0.98)

Socio-economic disparities in obesity and underweight

Namibia	0.81 (0.64-1.02)	0.86 (0.71-1.03)	0.46 (0.34-0.60)
Nepal	1.25 (0.94-1.67)	0.94 (0.71-1.26)	0.51 (0.27-0.98)
Pakistan	1.22 (0.92-1.63)	0.80 (0.66-0.97)	0.74 (0.52-1.05)
Paraguay	0.46 (0.34-0.64)	1.22 (1.06-1.40)	0.84 (0.68-1.05)
Philippines	1.00 (0.84-1.19)	1.00 (0.87-1.16)	0.62 (0.48-0.79)
Russian Federation	0.32 (0.16-0.64)	1.13 (0.93-1.37)	0.36 (0.28-0.46)
Senegal	1.17 (0.82-1.68)	0.61 (0.45-0.84)	0.34 (0.20-0.57)
Slovakia ^d	0.05 (0.01-0.22)	3.45 (2.62-4.55)	1.78 (1.18-2.66)
Slovenia ^{c,e}	---	1.15 (0.60-2.21)	1.15 (0.67-1.98)
South Africa ^b	0.96 (0.58-1.61)	0.91 (0.67-1.23)	0.58 (0.42-0.81)
Spain	0.53 (0.31-0.89)	2.04 (1.81-2.31)	1.40 (1.19-1.65)
Sri Lanka	1.34 (1.13-1.60)	0.85 (0.70-1.03)	0.51 (0.37-0.70)
Swaziland	0.84 (0.42-1.67)	0.98 (0.75-1.27)	0.57 (0.43-0.77)
Tunisia	1.08 (0.77-1.50)	0.75 (0.65-0.86)	0.38 (0.30-0.50)
Turkey ^f	0.41 (0.31-0.55)	1.01 (0.91-1.12)	0.52 (0.45-0.61)
Ukraine	0.16 (0.07-0.39)	1.10 (0.87-1.40)	0.42 (0.30-0.59)
United Arab Emirates	1.25 (0.58-2.72)	1.16 (0.88-1.51)	0.98 (0.69-1.39)
Uruguay	0.41 (0.20-0.84)	1.87 (1.62-2.15)	0.90 (0.71-1.14)
Vietnam	1.21 (0.98-1.49)	0.95 (0.63-1.44)	---
Zambia ^c	0.83 (0.59-1.18)	0.88 (0.70-1.11)	0.62 (0.43-0.90)
Zimbabwe	1.49 (1.03-2.16)	0.77 (0.64-0.94)	0.59 (0.43-0.80)

*Bolded indicates significance ($p < 0.05$).

^aAdjusted using income as continuous variable and age as 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^bAdjusted using age as a 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^cRobust standard errors.

^dAdjusted using age as continuous variable.

^eUnadjusted for urbanicity.

^fUnadjusted for income.

Socio-economic disparities in obesity and underweight

Table 3S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI underweight classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

	Lowest income quintile RRR (95%CI)	IQ 2 RRR (95%CI)	IQ 3 RRR (95%CI)	IQ 4 RRR (95%CI)	IQ 5 (ref)
Bangladesh ^a	---	---	---	---	---
Bosnia and Herzegovina	2.56 (0.48-13.76)	3.70 (0.72-19.00)	1.42 (0.24-8.49)	2.96 (0.59-14.92)	---
Brazil	1.92 (1.12-3.29)	1.33 (0.79-2.23)	1.19 (0.70-2.03)	1.15 (0.68-1.94)	---
Burkina Faso ^a	---	---	---	---	---
Chad	1.73 (1.02-2.94)	0.88 (0.47-1.65)	1.04 (0.56-1.92)	0.94 (0.60-1.49)	---
China	1.85 (0.98-3.49)	1.48 (0.81-2.72)	1.04 (0.58-1.85)	0.69 (0.40-1.19)	---
Comoros	1.82 (0.73-4.56)	1.20 (0.52-2.77)	1.46 (0.60-3.60)	1.51 (0.72-3.14)	---
Congo	1.80 (0.92-3.54)	1.32 (0.67-2.61)	0.73 (0.33-1.61)	1.15 (0.56-2.35)	---
Côte d'Ivoire	1.42 (0.81-2.51)	1.14 (0.63-2.06)	0.85 (0.43-1.66)	1.18 (0.65-2.14)	---
Croatia	4.62 (0.49-43.16)	4.20 (0.65-26.98)	2.55 (0.49-13.28)	0.98 (0.16-6.01)	---
Czech Republic ^b	---	0.31 (0.04-2.58)	0.71 (0.17-2.94)	1.95 (0.58-6.54)	---
Dominican Republic	1.24 (0.71-2.15)	1.16 (0.68-1.97)	1.30 (0.77-2.19)	0.93 (0.55-1.58)	---
Ecuador	1.09 (0.55-2.16)	0.79 (0.39-1.62)	1.00 (0.57-1.74)	0.61 (0.32-1.19)	---
Estonia	0.34 (0.10-1.24)	0.15 (0.02-1.02)	0.44 (0.14-1.42)	0.39 (0.13-1.15)	---
Ethiopia ^a	---	---	---	---	---
Georgia	1.56 (0.57-4.28)	1.44 (0.58-3.59)	1.45 (0.65-3.21)	2.06 (0.92-4.60)	---
Ghana	1.38 (0.91-2.11)	1.65 (1.08-2.53)	1.06 (0.68-1.65)	1.08 (0.69-1.68)	---
Guatemala ^c	0.77 (0.30-1.95)	1.22 (0.57-2.60)	1.29 (0.65-2.56)	0.75 (0.39-1.46)	---
Hungary	0.88 (0.28-2.77)	1.57 (0.69-3.61)	0.10 (0.01-0.81)	1.24 (0.55-2.81)	---
India	1.88 (1.49-2.38)	1.73 (1.38-2.18)	1.71 (1.39-2.11)	1.38 (1.12-1.70)	---
Kazakhstan	1.37 (0.62-3.00)	1.25 (0.58-2.70)	0.76 (0.35-1.66)	1.00 (0.51-1.96)	---
Kenya	2.11 (1.43-3.11)	1.59 (1.05-2.40)	1.24 (0.85-1.82)	1.22 (0.79-1.88)	---
Laos	0.94 (0.58-1.53)	1.15 (0.71-1.85)	0.96 (0.61-1.53)	1.06 (0.69-1.60)	---
Latvia ^b	---	0.37 (0.04-3.39)	1.76 (0.47-6.65)	0.27 (0.03-2.18)	---
Malawi	1.38 (0.93-2.06)	1.45 (0.94-2.39)	1.30 (0.90-1.87)	1.21 (0.82-1.79)	---
Malaysia	1.66 (1.09-2.52)	1.69 (1.15-2.48)	1.30 (0.91-1.86)	1.17 (0.80-1.72)	---
Mali ^b	---	1.36 (0.30-6.24)	0.80 (0.21-3.03)	1.55 (0.52-4.65)	---
Mauritania	1.13 (0.57-2.23)	0.68 (0.34-1.35)	1.21 (0.72-2.05)	1.42 (0.86-2.33)	---
Mauritius	1.14 (0.63-2.06)	1.16 (0.68-1.96)	1.23 (0.78-1.93)	1.01 (0.65-1.58)	---

Socio-economic disparities in obesity and underweight

Mexico	1.29 (0.89-1.87)	1.25 (0.88-1.77)	1.17 (0.82-1.66)	1.13 (0.80-1.61)	---
Morocco	1.28 (0.43-3.77)	0.98 (0.38-2.51)	0.88 (0.41-1.91)	1.12 (0.63-1.96)	---
Myanmar	1.20 (0.82-1.76)	1.26 (0.88-1.80)	1.34 (0.97-1.86)	1.12 (0.84-1.50)	---
Namibia	1.29 (0.86-1.93)	1.01 (0.67-1.53)	0.93 (0.60-1.45)	0.80 (0.51-1.24)	---
Nepal	1.51 (0.97-2.35)	1.49 (1.02-2.19)	1.49 (1.06-2.09)	1.33 (0.98-1.81)	---
Pakistan	1.24 (0.81-1.92)	1.26 (0.80-1.98)	0.86 (0.53-1.38)	1.35 (0.86-2.13)	---
Paraguay	2.49 (1.41-4.41)	1.66 (0.96-2.86)	1.74 (1.06-2.87)	0.87 (0.47-1.63)	---
Philippines	0.93 (0.68-1.26)	0.97 (0.73-1.28)	0.96 (0.75-1.23)	0.94 (0.73-1.21)	---
Russian Federation	1.12 (0.46-2.74)	0.42 (0.20-0.91)	0.47 (0.22-1.02)	0.55 (0.26-1.15)	---
Senegal	1.78 (0.96-3.31)	1.45 (0.86-2.44)	0.92 (0.47-1.79)	1.19 (0.68-2.10)	---
Slovakia ^d	---	0.76 (0.35-1.63)	0.72 (0.29-1.77)	1.46 (0.57-3.74)	---
Slovenia ^{c,e}	---	---	---	---	---
South Africa ^b	---	0.92 (0.50-1.69)	0.55 (0.25-1.23)	2.20 (1.19-4.07)	---
Spain	0.85 (0.38-1.93)	1.13 (0.57-2.21)	0.75 (0.39-1.44)	0.90 (0.49-1.66)	---
Sri Lanka	1.75 (1.31-2.35)	1.60 (1.20-2.13)	1.33 (1.02-1.74)	1.41 (1.08-1.85)	---
Swaziland	2.56 (0.93-7.09)	0.92 (0.32-2.70)	1.67 (0.62-4.49)	1.13 (0.37-3.39)	---
Tunisia	1.15 (0.61-2.16)	1.02 (0.57-1.84)	1.01 (0.59-1.74)	0.95 (0.57-1.60)	---
Turkey ^f	---	---	---	---	---
Ukraine	1.09 (0.43-2.76)	0.49 (0.20-1.24)	1.08 (0.47-2.50)	1.11 (0.51-2.44)	---
United Arab Emirates	0.67 (0.24-1.86)	2.26 (0.91-5.57)	0.88 (0.27-2.90)	1.16 (0.40-3.34)	---
Uruguay	1.12 (0.56-2.23)	1.08 (0.57-2.05)	1.31 (0.64-2.71)	0.76 (0.39-1.48)	---
Vietnam	1.34 (0.93-1.93)	1.24 (0.90-1.70)	1.43 (1.03-2.00)	1.11 (0.81-1.52)	---
Zambia ^c	1.81 (0.95-3.43)	1.75 (0.96-3.17)	1.43 (0.76-2.69)	2.00 (1.12-3.57)	---
Zimbabwe	1.17 (0.61-2.27)	0.78 (0.41-1.49)	0.70 (0.40-1.22)	0.85 (0.45-1.59)	---

*Indicates significance ($p < 0.05$) of at least one income quintile compared to wealthiest quintile.

Bolded indicates significance ($p < 0.05$).

^aIncome quintiles created sparse cells for regression analyses.

^bAdjusted using age as a 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^cRobust standard errors.

^dAdjusted using age as continuous variable.

^eUnadjusted for urbanicity.

^fUnadjusted for income.

Socio-economic disparities in obesity and underweight

Table 4S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI overweight classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

	Lowest income quintile RRR (95%CI)	IQ 2 RRR (95%CI)	IQ 3 RRR (95%CI)	IQ 4 RRR (95%CI)	IQ 5 (ref)
Bangladesh ^a	---	---	---	---	---
Bosnia and Herzegovina	0.68 (0.36-1.29)	0.58 (0.34-0.99)	0.67 (0.40-1.15)	0.91 (0.56-1.48)	---
Brazil	0.74 (0.58-0.94)	0.85 (0.68-1.06)	1.06 (0.85-1.32)	1.02 (0.82-1.25)	---
Burkina Faso ^a	---	---	---	---	---
Chad	1.45 (0.96-2.19)	1.51 (1.06-2.16)	1.16 (0.86-1.57)	1.04 (0.78-1.37)	---
China	0.19 (0.11-0.32)	0.60 (0.39-0.90)	0.91 (0.64-1.29)	0.98 (0.71-1.35)	---
Comoros	0.67 (0.45-0.99)	0.86 (0.57-1.29)	0.67 (0.45-1.00)	0.64 (0.43-0.96)	---
Congo	0.47 (0.29-0.75)	0.61 (0.41-0.90)	0.56 (0.39-0.79)	0.63 (0.46-0.86)	---
Côte d'Ivoire	0.66 (0.46-0.94)	0.68 (0.48-0.95)	0.76 (0.54-1.06)	0.84 (0.61-1.15)	---
Croatia	0.62 (0.35-1.11)	1.59 (0.95-2.64)	1.30 (0.80-2.13)	1.22 (0.75-1.99)	---
Czech Republic ^b	---	1.36 (0.88-2.10)	1.24 (0.81-1.91)	0.89 (0.58-1.36)	---
Dominican Republic	0.58 (0.42-0.81)	0.83 (0.62-1.13)	0.92 (0.70-1.23)	0.84 (0.64-1.10)	---
Ecuador	0.69 (0.53-0.89)	0.78 (0.61-1.01)	0.86 (0.66-1.11)	1.04 (0.83-1.30)	---
Estonia	0.70 (0.48-1.00)	0.70 (0.49-0.99)	0.71 (0.44-1.16)	1.11 (0.75-1.64)	---
Ethiopia ^a	---	---	---	---	---
Georgia	0.58 (0.40-0.86)	0.72 (0.50-1.04)	0.86 (0.64-1.17)	1.08 (0.82-1.41)	---
Ghana	0.29 (0.20-0.42)	0.39 (0.28-0.56)	0.47 (0.34-0.65)	0.71 (0.52-0.98)	---
Guatemala ^c	0.58 (0.41-0.81)	0.74 (0.54-1.01)	0.99 (0.76-1.29)	0.98 (0.78-1.23)	---
Hungary	0.64 (0.40-1.00)	0.75 (0.48-1.17)	0.75 (0.52-1.08)	0.98 (0.65-1.46)	---
India	0.47 (0.33-0.65)	0.51 (0.38-0.69)	0.62 (0.47-0.82)	0.78 (0.62-0.99)	---
Kazakhstan	0.69 (0.52-0.92)	0.81 (0.64-1.02)	0.91 (0.73-1.14)	0.98 (0.78-1.22)	---
Kenya	0.30 (0.22-0.41)	0.37 (0.28-0.51)	0.45 (0.35-0.59)	0.73 (0.57-0.93)	---
Laos	0.40 (0.27-0.60)	0.34 (0.22-0.52)	0.37 (0.24-0.57)	0.72 (0.54-0.95)	---
Latvia ^b	---	1.19 (0.77-1.86)	1.00 (0.55-1.80)	1.22 (0.76-1.97)	---
Malawi	0.53 (0.40-0.69)	0.70 (0.56-0.88)	0.68 (0.54-0.87)	0.76 (0.61-0.94)	---
Malaysia	0.59 (0.45-0.77)	0.90 (0.71-1.14)	0.83 (0.66-1.03)	1.06 (0.87-1.29)	---
Mali	---	0.51 (0.18-1.46)	0.55 (0.25-1.22)	0.66 (0.34-1.26)	---
Mauritania	0.74 (0.48-1.14)	1.00 (0.66-1.51)	1.02 (0.71-1.46)	0.83 (0.60-1.14)	---
Mauritius	0.98 (0.71-1.35)	0.86 (0.65-1.14)	0.89 (0.67-1.17)	0.95 (0.71-1.28)	---
Mexico	0.83 (0.73-0.93)	1.05 (0.94-1.16)	1.12 (1.01-1.24)	1.21 (1.09-1.35)	--

Socio-economic disparities in obesity and underweight

Morocco	0.41 (0.23-0.72)	0.63 (0.39-1.01)	0.50 (0.34-0.75)	0.66 (0.48-0.91)	---
Myanmar	0.51 (0.34-0.78)	0.57 (0.40-0.81)	0.64 (0.48-0.87)	0.76 (0.58-1.00)	---
Namibia	0.38 (0.27-0.53)	0.51 (0.37-0.69)	0.56 (0.42-0.75)	0.61 (0.47-0.81)	---
Nepal	0.34 (0.18-0.62)	0.36 (0.23-0.57)	0.45 (0.32-0.65)	0.38 (0.25-0.56)	---
Pakistan	0.47 (0.34-0.64)	0.46 (0.33-0.64)	0.51 (0.38-0.68)	0.59 (0.44-0.79)	---
Paraguay	0.39 (0.29-0.51)	0.52 (0.40-0.67)	0.68 (0.56-0.84)	0.89 (0.72-1.09)	---
Philippines	0.44 (0.34-0.57)	0.78 (0.64-0.95)	0.79 (0.65-0.96)	0.82 (0.67-0.99)	---
Russian Federation	0.53 (0.36-0.77)	0.70 (0.54-0.91)	0.80 (0.65-1.00)	0.85 (0.67-1.07)	---
Senegal	0.59 (0.34-1.02)	0.44 (0.26-0.76)	0.89 (0.56-1.42)	0.91 (0.60-1.39)	---
Slovakia ^d	---	0.99 (0.69-1.42)	1.03 (0.70-1.50)	0.98 (0.72-1.32)	---
Slovenia ^{c,e}	1.37 (0.69-2.72)	1.15 (0.60-2.21)	1.14 (0.61-2.14)	1.15 (0.60-2.18)	---
South Africa ^b	---	1.12 (0.73-1.72)	1.37 (0.94-1.99)	1.51 (1.07-2.13)	---
Spain	1.30 (1.04-1.62)	1.33 (1.09-1.62)	1.17 (0.98-1.41)	1.13 (0.95-1.35)	---
Sri Lanka	0.61 (0.41-0.90)	0.65 (0.44-0.96)	0.62 (0.47-0.81)	0.68 (0.52-0.90)	---
Swaziland	0.84 (0.56-1.26)	0.79 (0.55-1.14)	0.78 (0.53-1.14)	0.78 (0.54-1.14)	---
Tunisia	0.52 (0.38-0.71)	0.64 (0.49-0.82)	0.76 (0.59-0.97)	0.94 (0.76-1.17)	---
Turkey ^f	---	---	---	---	---
Ukraine	0.57 (0.39-0.84)	0.68 (0.50-0.92)	0.82 (0.59-1.15)	0.85 (0.60-1.23)	---
United Arab Emirates	1.05 (0.72-1.55)	1.48 (0.97-2.26)	1.09 (0.74-1.61)	0.80 (0.49-1.31)	---
Uruguay	0.93 (0.72-1.20)	0.98 (0.73-1.33)	1.18 (0.94-1.47)	1.04 (0.86-1.27)	---
Vietnam	0.54 (0.28-1.03)	0.20 (0.08-0.50)	0.25 (0.12-0.50)	0.31 (0.17-0.57)	---
Zambia ^c	0.46 (0.30-0.68)	0.35 (0.24-0.52)	0.56 (0.40-0.79)	0.65 (0.47-0.92)	---
Zimbabwe	0.56 (0.43-0.74)	0.61 (0.44-0.85)	0.61 (0.46-0.82)	0.94 (0.73-1.20)	---

*Indicates significance ($p < 0.05$) of at least one income quintile compared to wealthiest quintile.

*Bolded indicates significance ($p < 0.05$).

^aIncome quintiles created sparse cells for regression analyses.

^bAdjusted using age as a 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^cRobust standard errors.

^dAdjusted using age as continuous variable.

^eUnadjusted for urbanicity.

^fUnadjusted for income.

Socio-economic disparities in obesity and underweight

Table 5S: Income - Relative risk ratios (RRRs) and 95% confidence interval (CI) from multinomial multivariable model (using BMI 18.5-24.9 kg/m² as the referent) regressing BMI obese classification on income quintiles (using highest income quintile as the referent) with clustered robust standard errors (CRSE) of primary sampling units (PSUs), adjusted for urbanicity, age strata, and sex, World Health Survey, 2002–2003.

	Lowest income quintile RRR (95%CI)	IQ 2 RRR (95%CI)	IQ 3 RRR (95%CI)	IQ 4 RRR (95%CI)	IQ 5 (ref)
Bangladesh ^a	---	---	---	---	---
Bosnia and Herzegovina	1.13 (0.47-2.70)	0.93 (0.43-1.98)	0.58 (0.23-1.45)	1.07 (0.46-2.47)	---
Brazil	0.55 (0.35-0.88)	0.77 (0.53-1.13)	0.99 (0.72-1.38)	1.21 (0.85-1.72)	---
Burkina Faso ^a	---	---	---	---	---
Chad	1.31 (0.72-2.37)	1.18 (0.69-2.02)	1.36 (0.87-2.13)	0.88 (0.56-1.39)	---
China	0.19 (0.02-2.49)	2.06 (0.51-8.38)	2.72 (0.82-9.02)	2.69 (0.81-8.97)	---
Comoros	0.39 (0.10-1.51)	1.04 (0.42-2.59)	0.78 (0.35-1.70)	1.16 (0.50-2.71)	---
Congo	0.25 (0.10-0.61)	0.47 (0.23-0.98)	0.43 (0.23-0.81)	0.58 (0.35-0.96)	---
Côte d'Ivoire	0.67 (0.33-1.34)	0.87 (0.47-1.61)	0.51 (0.24-1.08)	1.28 (0.73-2.24)	---
Croatia	0.82 (0.40-1.66)	1.71 (0.85-3.45)	1.81 (0.96-3.39)	1.07 (0.52-2.21)	---
Czech Republic ^b	---	2.34 (1.29-4.27)	1.92 (0.96-3.83)	0.95 (0.49-1.81)	---
Dominican Republic	0.25 (0.14-0.44)	0.71 (0.45-1.12)	0.96 (0.68-1.36)	0.88 (0.64-1.21)	---
Ecuador	0.78 (0.50-1.23)	0.97 (0.67-1.42)	0.94 (0.67-1.31)	0.99 (0.69-1.41)	---
Estonia	0.61 (0.33-1.10)	0.71 (0.38-1.35)	0.67 (0.37-1.19)	0.78 (0.44-1.38)	---
Ethiopia ^a	---	---	---	---	---
Georgia	0.48 (0.26-0.90)	0.62 (0.36-1.08)	0.96 (0.55-1.67)	1.06 (0.70-1.62)	---
Ghana	0.11 (0.05-0.24)	0.26 (0.13-0.48)	0.33 (0.19-0.57)	0.58 (0.37-0.91)	---
Guatemala ^c	0.17 (0.09-0.36)	0.38 (0.23-0.64)	0.69 (0.45-1.05)	1.03 (0.74-1.43)	---
Hungary	1.08 (0.59-1.99)	1.36 (0.78-2.38)	1.14 (0.66-1.99)	1.59 (0.91-2.80)	---
India	0.26 (0.11-0.58)	0.49 (0.26-0.93)	0.50 (0.26-0.95)	1.01 (0.63-1.63)	---
Kazakhstan	0.54 (0.39-0.77)	0.57 (0.41-0.79)	0.70 (0.54-0.92)	1.04 (0.77-1.39)	---
Kenya	0.14 (0.08-0.25)	0.13 (0.07-0.24)	0.27 (0.18-0.42)	0.43 (0.30-0.63)	---
Laos	0.15 (0.03-0.65)	0.27 (0.07-0.95)	0.22 (0.07-0.67)	0.62 (0.31-1.24)	---
Latvia ^b	---	1.01 (0.57-1.80)	1.00 (0.54-1.85)	1.00 (0.53-1.92)	---
Malawi	0.35 (0.22-0.56)	0.54 (0.38-0.76)	0.72 (0.51-1.02)	0.65 (0.47-0.89)	---
Malaysia	0.77 (0.54-1.10)	0.87 (0.62-1.22)	0.98 (0.70-1.37)	1.07 (0.79-1.44)	---
Mali	---	0.64 (0.13-3.14)	0.42 (0.08-2.13)	0.80 (0.27-2.39)	---
Mauritania	1.15 (0.63-2.11)	1.24 (0.68-2.26)	1.14 (0.68-1.92)	0.90 (0.53-1.53)	---
Mauritius	1.25 (0.67-2.31)	1.06 (0.59-1.91)	0.91 (0.56-1.49)	1.00 (0.58-1.72)	---
Mexico	0.70 (0.59-0.83)	1.12 (0.97-1.30)	1.19 (1.03-1.37)	1.34 (1.17-1.54)	---

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Morocco	0.45 (0.17-1.20)	0.77 (0.33-1.80)	1.08 (0.56-2.07)	1.17 (0.72-1.88)	---
Myanmar	0.14 (0.05-0.43)	0.35 (0.14-0.88)	0.57 (0.27-1.17)	0.50 (0.23-1.09)	---
Namibia	0.19 (0.11-0.33)	0.27 (0.17-0.43)	0.52 (0.34-0.82)	0.71 (0.48-1.04)	---
Nepal	0.18 (0.05-0.72)	0.25 (0.09-0.72)	0.13 (0.04-0.42)	0.23 (0.09-0.57)	---
Pakistan	0.29 (0.17-0.49)	0.25 (0.14-0.45)	0.40 (0.25-0.66)	0.38 (0.25-0.59)	---
Paraguay	0.21 (0.14-0.33)	0.35 (0.24-0.51)	0.40 (0.29-0.56)	0.75 (0.56-0.99)	---
Philippines	0.57 (0.34-0.97)	0.51 (0.32-0.79)	0.68 (0.47-0.99)	0.88 (0.64-1.21)	---
Russian Federation	0.62 (0.39-0.97)	0.74 (0.50-1.08)	0.81 (0.55-1.19)	0.90 (0.62-1.30)	---
Senegal	0.42 (0.13-1.33)	0.70 (0.27-1.82)	0.54 (0.22-1.34)	0.57 (0.30-1.19)	---
Slovakia ^d	---	0.93 (0.53-1.61)	0.85 (0.51-1.43)	1.06 (0.65-1.72)	---
Slovenia ^{c,e}	1.99 (0.72-5.51)	2.14 (0.84-5.45)	1.51 (0.57-3.98)	0.73 (0.25-2.14)	---
South Africa ^b	---	1.20 (0.71-2.02)	1.00 (0.61-1.64)	1.14 (0.70-1.85)	---
Spain	2.77 (2.01-3.81)	2.47 (1.84-3.30)	2.14 (1.61-2.85)	1.37 (1.03-1.84)	---
Sri Lanka	1.48 (0.81-2.69)	1.21 (0.72-2.03)	1.08 (0.67-1.74)	0.82 (0.51-1.32)	---
Swaziland	0.73 (0.47-1.16)	0.62 (0.39-0.97)	0.66 (0.47-0.94)	0.70 (0.51-0.95)	---
Tunisia	0.44 (0.25-0.76)	0.59 (0.37-0.94)	0.97 (0.67-1.42)	1.13 (0.80-1.59)	---
Turkey ^f	---	---	---	---	---
Ukraine	0.53 (0.32-0.86)	0.46 (0.28-0.76)	0.71 (0.45-1.13)	0.95 (0.60-1.51)	---
United Arab Emirates	1.24 (0.67-2.31)	1.71 (0.96-3.06)	1.53 (0.86-2.73)	0.88 (0.50-1.55)	---
Uruguay	0.83 (0.63-1.09)	1.33 (0.98-1.82)	1.35 (0.95-1.93)	0.96 (0.72-1.29)	---
Vietnam	---	---	---	---	---
Zambia ^c	0.29 (0.13-0.61)	0.27 (0.14-0.54)	0.62 (0.36-1.06)	0.61 (0.37-1.03)	---
Zimbabwe	0.38 (0.24-0.62)	0.47 (0.29-0.74)	0.38 (0.24-0.59)	0.70 (0.47-1.05)	---

*Indicates significance ($p < 0.05$) of at least one income quintile compared to wealthiest quintile.

Bolded indicates significance ($p < 0.05$).

^aIncome quintiles created sparse cells for regression analyses.

^bAdjusted using age as a 3-category variable (18-29 years old; 30-49 years old; 50 plus).

^cRobust standard errors.

^dAdjusted using age as continuous variable.

^eUnadjusted for urbanicity.

^fUnadjusted for income.