

Prevalence and Time-Trends of Adult overweight and obesity in 36 Countries in the WHO African Region from 2003 to 2022: A Study of 54 WHO STEPS Surveys representing 156 million Adults

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Context



- **Overweight & obesity** drive chronic diseases (**CVD, T2D, cancers**) reducing quality of life and causing early death.
- Growing evidence that this epidemic has accelerated in LMICs
- In Africa, obesity is raising and driven by urbanization, globalization, weak HS, limited resources, insufficient PH policies, and lack of data.
- Prior evidence: selected populations, multi-country studies with limited number of African countries; NCD RF Collab: heterogeneity of data sources.

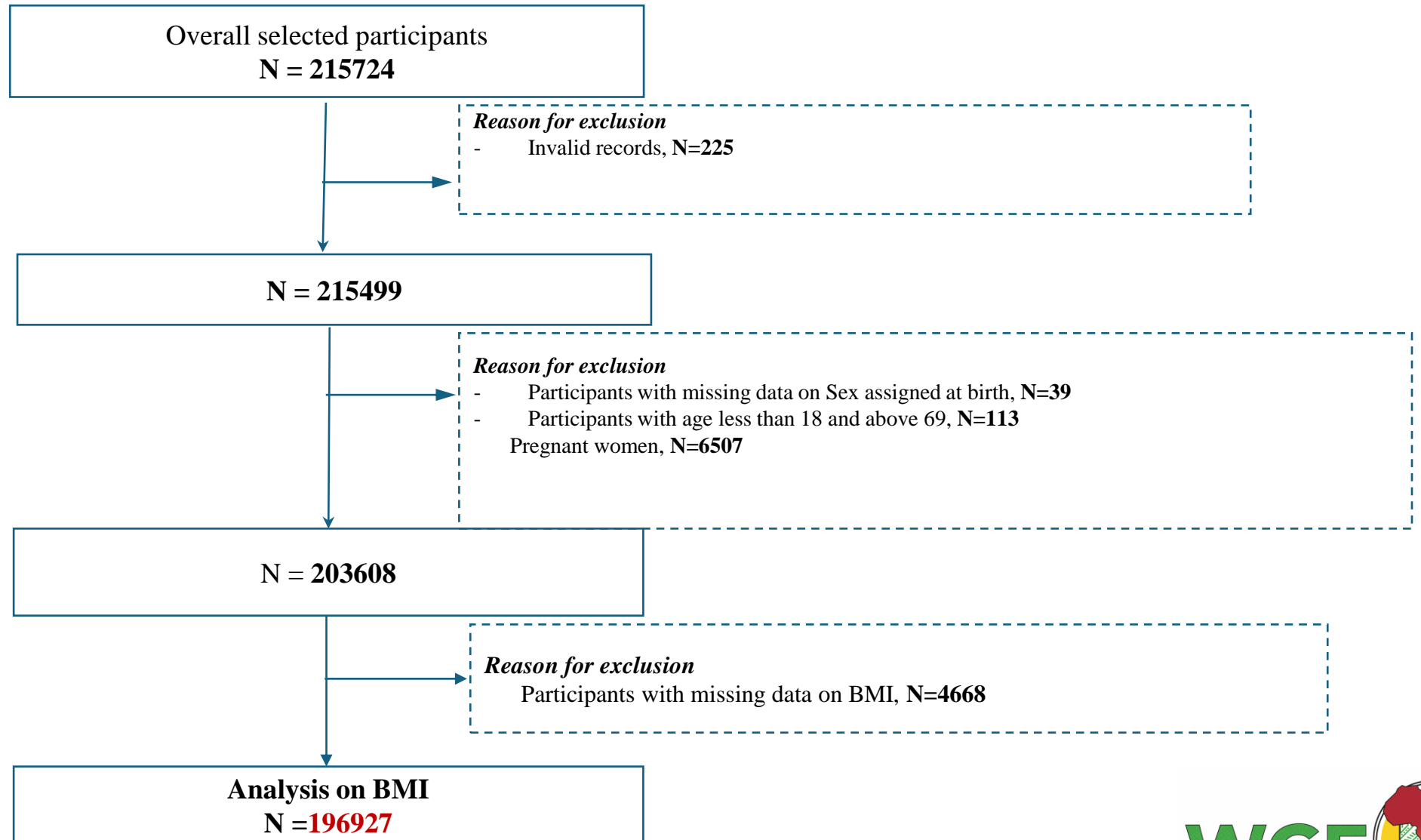
Objective

- We investigated the **prevalence** and **factors associated** with **overweight, and obesity** in African adults, along with temporal trends in overweight and obesity across 36 countries

Data source

- **WHO STEPS**; Cross-sectional, population-based surveys , national or subnational representation, with consistency in methodology to enable comparability across countries and over time.
 - **Step 1**: Collects information on key **behavioural risk factors** such as tobacco use, alcohol consumption, diet, and physical activity.
 - **Step 2: Physical Measurements** - blood pressure, height, weight, and waist
 - **Step 3: Biochemical Measurements**- blood glucose and cholesterol levels.

Participant flow diagram

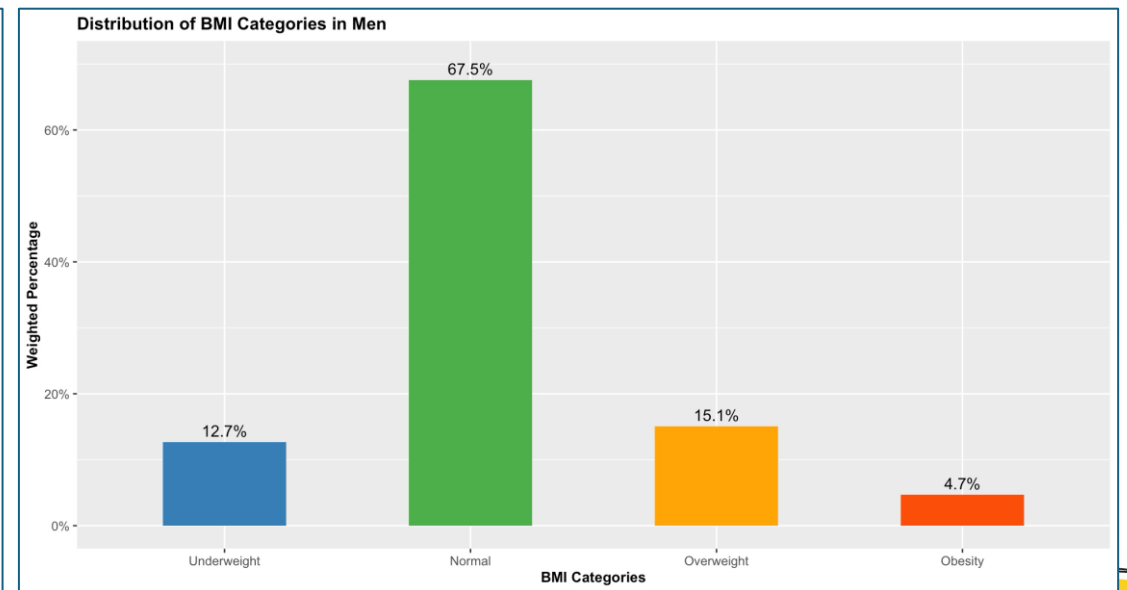
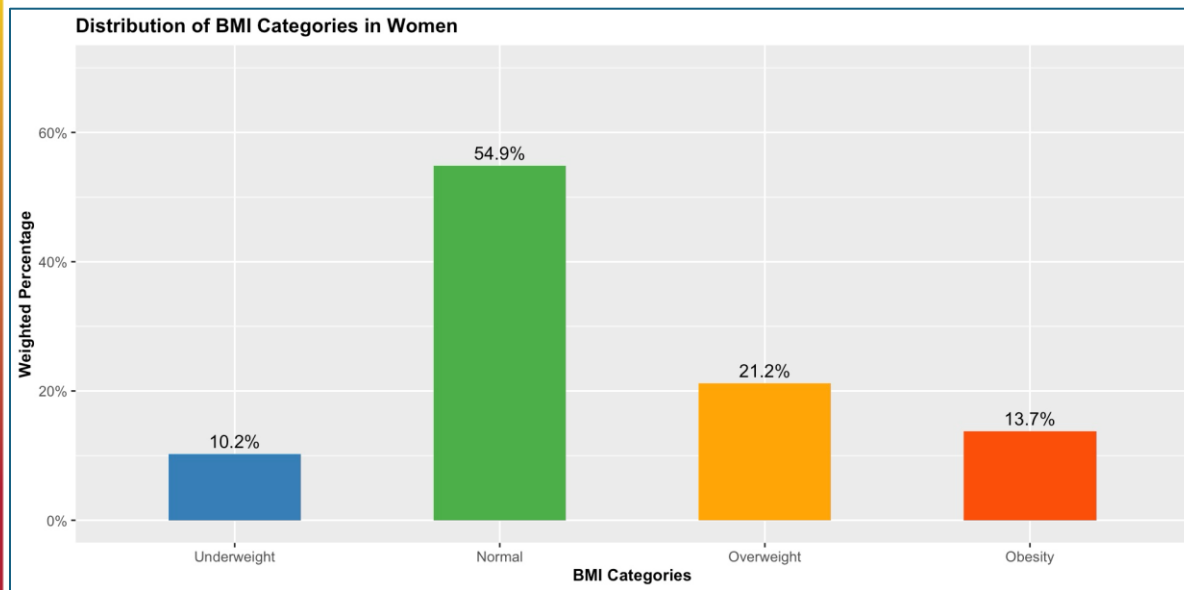


Methods

- **54** WHO STEPS surveys from **36 countries**, 2003 to 2022
- **Weighted prevalences** of overweight and obesity accounting for the study sampling
- **Hierarchical (multilevel) multinomial mixed-effects logistic regression** models with **random effects for country and survey year** to explore **factors associated with BMI categories**
- We used spatiotemporal Bayesian model to estimate the annual trends in mean BMI and the prevalence of overweight and obesity from 2003 to 2022

Findings (1/4)

- **196,927 adults** (50.1% women) representing 156 million people,
- mean age of **38.94 ± 12.68** years.
- **Overweight: 18.1%**
- **Obesity 9.2%**



Findings (2/4)

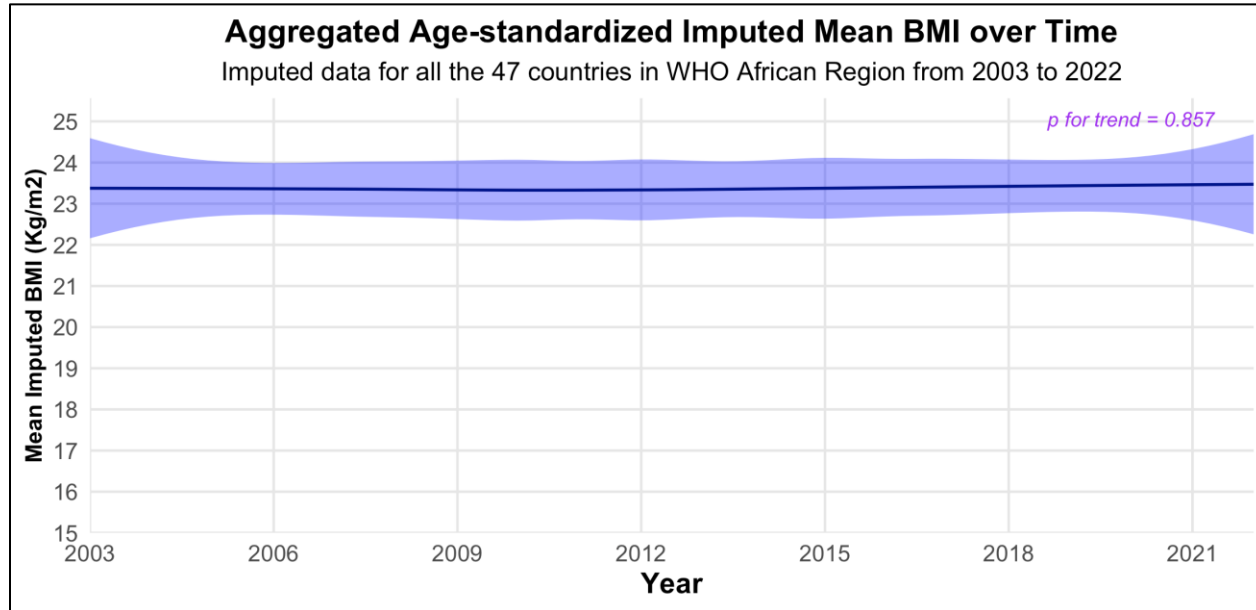


Figure 2. Trend in overall age-standardised mean MI from 2003 – 2022

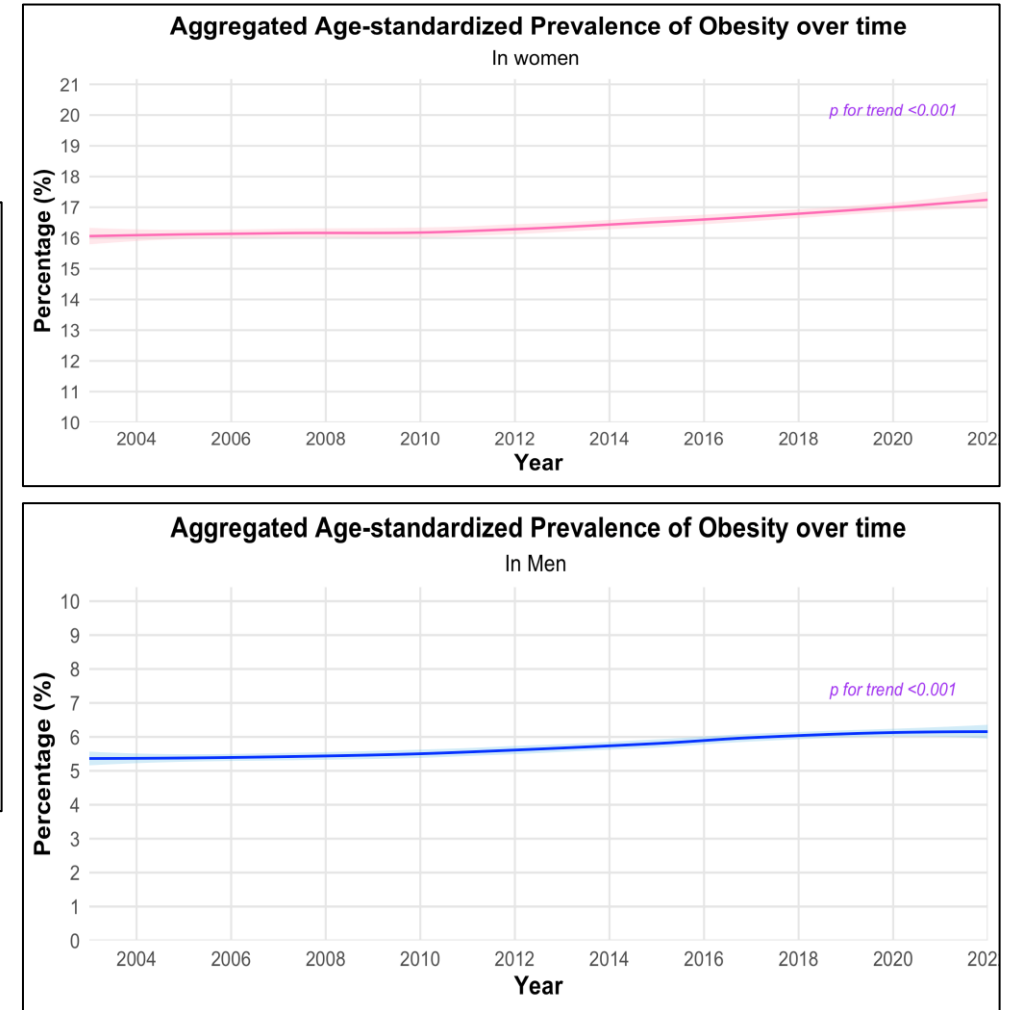


Figure 3. Trend in age-standardised prevalence of Obesity by sex from 2003 – 2022

Findings (3/4)

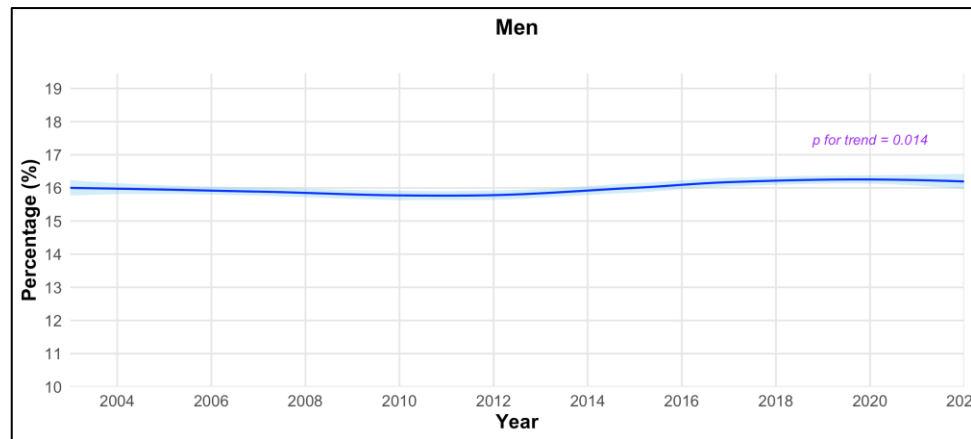
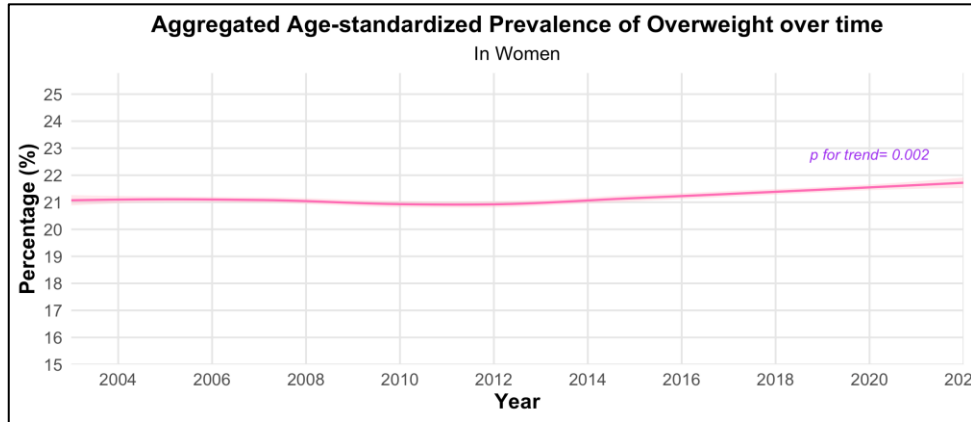


Figure 4. Trend in age-standardised prevalence of Overweight by sex from 2003 – 2022

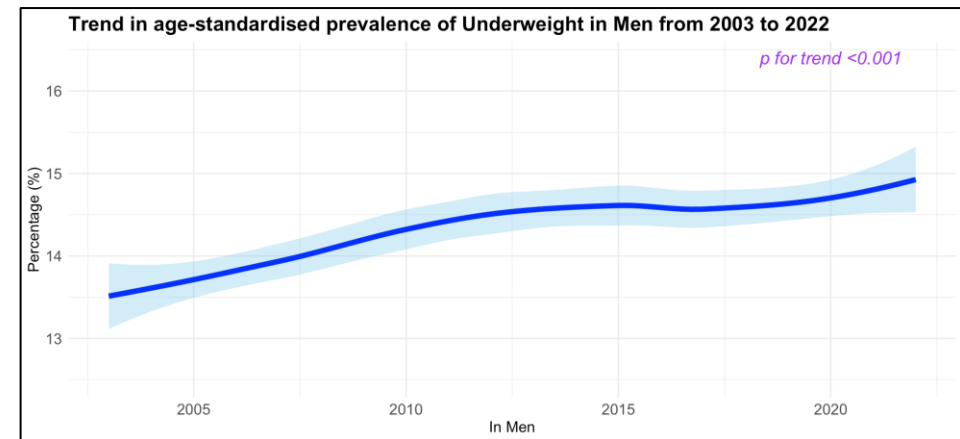
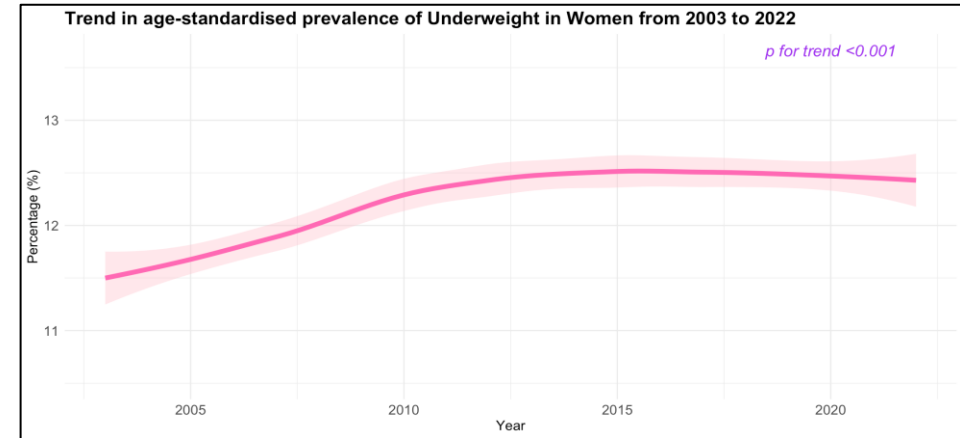


Figure 5. Trend in age-standardised prevalence of Underweight by sex from 2003 – 2022

Predictors	Underweight vs Normal		Overweight vs Normal		Obese vs Normal	
	OR*	CI	OR*	CI	OR*	CI
Sex						
Men	1(ref)		1(ref)		1(ref)	
Women	1.02	0.99 – 1.06	2.01	1.96 – 2.07	4.86	4.66 – 5.07
Age groups, years						
[18,25)	1(ref)		1(ref)		1(ref)	
[25,35)	0.75	0.71 – 0.80	1.95	1.84 – 2.06	3.06	2.80 – 3.36
[35,45)	0.81	0.76 – 0.87	2.77	2.62 – 2.93	6.23	5.68 – 6.82
[45,55)	0.99	0.93 – 1.06	3.14	2.95 – 3.33	8.18	7.45 – 8.99
[55,69]	1.16	1.08 – 1.25	3.10	2.92 – 3.30	7.90	7.18 – 8.70
Level of education						
No education	1(ref)		1(ref)		1(ref)	
Primary education	0.81	0.78 – 0.85	1.36	1.31 – 1.40	1.71	1.64 – 1.80
Secondary education	0.75	0.71 – 0.80	1.78	1.71 – 1.86	2.50	2.37 – 2.64
Tertiary education	0.69	0.63 – 0.76	2.19	2.07 – 2.32	3.29	3.06 – 3.55
Physical activity						
≥150 min/wk moderate or ≥75 min/wk vigorous or ≥150 combination	1(ref)		1(ref)		1(ref)	
1–149 min/wk moderate or 1–74 min/wk vigorous or 1–149 min/wk combination	1.04	0.98 – 1.10	1.08	1.03 – 1.12	1.21	1.15 – 1.28
None	1.14	1.08 – 1.19	1.10	1.06 – 1.14	1.30	1.24 – 1.36
Fruit & vegetable consumption						
4–5 Components	1(ref)		1(ref)		1(ref)	
2–3 Components	0.99	0.93 – 1.05	1.09	1.05 – 1.12	1.13	1.08 – 1.17
0–1 Component	1.06	1.00 – 1.13	1.05	1.01 – 1.10	1.15	1.09 – 1.21



Conclusion

- In Africa:  **1 in 3 women** and  **1 in 5 men** are overweight or obese.
- **Increasing trend of obesity** from 2003 to 2022.
- Action is needed to intensify efforts to combat the growing obesity epidemic:
 -  **Strengthen and expand public health initiatives** focusing on obesity prevention, education, and access to healthy food options.
 -  Promote **physical activity** and regulate **unhealthy food environments** to encourage healthier lifestyles.
 -  Ensure **affordable healthcare** to manage obesity-related complications and improve treatment outcomes.
 -  Foster **multisectoral collaboration** to address the social, economic, and environmental drivers of obesity

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