### Urban Noncommunicable Diseases in Jamaica: Patterns, Disparities, and Policy Implications

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### Paul Andrew Bourne\*

Vocational Training Development Institute, Jamaica, WI

### **Abstract**

Urban Jamaica faces a substantial and shifting burden of noncommunicable diseases (NCDs) shaped by demographic change, built environments, and social determinants, Drawing on nationally representative surveillance and global benchmarks, this paper synthesizes the epidemiology of NCD risk and outcomes among urban residents, contrasts patterns with rural Jamaica, and positions Jamaica within regional and international contexts. Using the Jamaica Health and Lifestyle Survey III (JHLS III, 2016-2017; technical report published 2024) as the principal source, supplemented by Pan American Health Organization (PAHO), World Health Organization (WHO), World Bank and Global Nutrition Report (GNR) datasets, we estimate the prevalence and distribution of key risks - adiposity, physical inactivity, diet, tobacco - and selected outcomes including chronic kidney disease (CKD). Urban-rural contrasts are pronounced for physical activity (lower high-activity prevalence in cities) and selected risks such as overweight, while CKD remains more prevalent in rural areas. Comparative benchmarks show Jamaica's adult obesity and diabetes burdens are broadly aligned with Caribbean norms, with relatively low adult smoking prevalence and marked sex disparities in adiposity. Descriptively, urban residents exhibit higher overweight and lower rates of high physical activity than rural peers. Bivariate analyses indicate significant associations between urban residence and physical activity categories, with parish-level heterogeneity. Inferential patterns from JHLS III multivariable analyses of neighbourhood contexts suggest that within metropolitan areas, higher perceived disorder is associated with greater current tobacco and alcohol use. At the same time, stronger collective efficacy correlates with lower substance use. Policy implications include prioritizing urban physical-activity infrastructure, food environment reform, and neighbourhood-level social capital interventions alongside primary-care management for hypertension and diabetes.

### Introduction

Urbanisation is reshaping Jamaica's health landscape, concentrating populations in metropolitan parishes where environments, services, and exposures differ from rural settings. Recent national data highlight that NCDs account for the majority of deaths and disability, mirroring regional trends in the Americas while reflecting local social and infrastructural determinants [1-3]. Urban living may amplify certain risks - reduced physical activity opportunities, food environments favouring ultra-processed products, and neighbourhood stressors - yet can also confer advantages such as better access to services. Understanding how urban residence relates to NCD risks and outcomes is essential for targeting effective prevention and control strategies in line with national plans and Vision 2030 priorities [1,2].

This paper focuses on adults in urban Jamaica, synthesizing current evidence from nationally representative surveys and authoritative international datasets. We privilege the JHLS III because it provides disaggregated urban-rural estimates for behavioural and metabolic risks and includes modules on neighbourhood contexts not previously captured [1]. We triangulate these findings with PAHO's Health in the Americas indicators, WHO country profiles, World Bank urbanization statistics, and the GNR to compare Jamaica with regional norms [2-4,5]. This approach enables a nuanced appraisal of where urban Jamaica aligns with or departs from Caribbean and global patterns.

### Research questions are:

- a) What is the prevalence of significant NCD risks and selected outcomes among urban adults in Iamaica?
- b) How do these compare with rural residents?
- c) Within urban areas, how are neighbourhood social environments associated with risk behaviours?
- d) How does Jamaica's urban NCD profile compare with Caribbean and global benchmarks?
- e) What policy levers are most promising for urban NCD control?

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### \*Corresponding author

Paul Andrew Bourne, Vocational Training Development Institute, Jamaica, WI

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Research objectives are to quantify key urban NCD indicators using valid sources; to compare urban and rural prevalence where available; to examine bivariate and inferential associations relevant to urban settings; to benchmark Jamaica internationally; and to translate results into actionable recommendations for urban health policy and practice. The paper adopts British English and Vancouver citation in square brackets, and each section includes five paragraphs to meet scholarly and formatting requirements.

Compared with prior literature that often reports national averages, our urbanfocused synthesis foregrounds within-country heterogeneity salient for policy. Earlier Jamaican studies have emphasized sex disparities and overall risk clustering [1,6]; here we extend the conversation by isolating urban-specific patterns and neighbourhood effects, thereby complementing regional comparative work from PAHO and GNR [2,5].

### Theoretical Framework

We anchor our analysis in a socio-ecological framework linking individual behaviours and metabolic risks to built environments, social contexts, and policy-level determinants. At the personal level, dietary intake, physical activity, and substance use affect adiposity, blood pressure, glycaemia, and lipids, which in turn shape NCD outcomes. Urban environments influence these behaviours via transport systems, land use, food retail density, and recreation opportunities, while social cohesion and perceived disorder can modify stress and coping pathways [1]. This layered perspective is widely used in NCD prevention and urban health studies across the Americas and is well-suited to Jamaica's mixed urban forms [2].

Within this framework, collective efficacy and perceived neighbourhood disorder operate as community-level constructs mediating risk behaviours. JHLS III provides rare national data on these constructs and demonstrates significant associations with current tobacco and alcohol use among urban residents [1]. These findings align with international literature showing that social capital mitigates risky behaviours and that disorder elevates stress-related coping with substances. They also extend prior Jamaican work that primarily focused on individual risk factors without integrating neighbourhood dynamics [6].

A second pillar is the nutrition transition hypothesis, wherein urbanisation accelerates shifts towards energy-dense, ultra-processed foods and sedentary lifestyles. PAHO's regional indicators and the GNR's national estimates situate Jamaica within a Caribbean pattern of rising overweight/obesity and diabetes, with distinctive female–male differentials [2,5]. JHLS III corroborates high overweight prevalence and lower physical activity in urban residents, consistent with this transition [1].

Third, we incorporate health systems access as a contextual determinant modifying detection, treatment, and control. WHO health expenditure profiles and PAHO core indicators place Jamaica within upper-middle-income norms, implying capacity but also the need for targeted urban primary care and community screening to translate resources into risk control [2,3,7].

Finally, the framework includes policy environments - notably Jamaica's NCD strategy and initiatives such as "Jamaica Moves" - which can shape urban behaviours through infrastructure, communication campaigns, and regulatory levers [1,2]. This matter integrates macro-level policy with meso-level neighbourhood context and micro-level behaviours, allowing a holistic interpretation of urban NCD patterns in Jamaica.

### **Literature Review**

Nationally representative Jamaican studies show substantial burdens of overweight/obesity, central adiposity, physical inactivity, and metabolic abnormalities, with pronounced sex differences [1]. JHLS III reports obesity at

28.6% and overweight/obesity at 53.8% among adults ≥15 years, with women bearing higher adiposity; it further documents lower prevalence of high physical activity among urban residents and higher overweight in urban compared with rural peers [1]. These findings are consistent with urbanisation-related patterns across the Americas while revealing local nuances such as parish-level variability in physical activity [1,2].

PAHO's Health in the Americas country profile for Jamaica indicates adult tobacco use at 8.6% (2023), overweight/obesity at 61.1% (2022), and insufficient physical activity at 32.6% (2016), situating Jamaica within regional trends but on the lower end for smoking [2]. WHO profiles confirm Jamaica's upper-middle-income status and health expenditure levels typical for peers, alongside persistent NCD mortality shares [3]. Together, these sources portray a stable but high NCD burden that policy must address through prevention and improved control.

Comparative nutrition data from the GNR place Jamaica's female obesity above regional averages and male obesity slightly below, with diabetes affecting a double-digit share of adults - especially women -underscoring sexed patterns relevant to urban settings [5]. Such sex disparities intersect with urban living, where food environments, caregiving roles, and safety concerns may constrain activity differentially. The literature suggests that tailored, gender-responsive urban interventions are warranted.

JHLS III's neighbourhood modules add an essential dimension: among urban residents, higher perceived physical and social disorder correlates with higher current use of alcohol and tobacco, whereas higher collective efficacy relates to lower current and lifetime substance use [1]. This matter aligns with international evidence that social cohesion protects against risk behaviours, and that disorder raises stress and reduces outdoor activity - mechanisms salient in dense urban areas.

Finally, macro-level trends in urbanization frame the problem. World Bank data show Jamaica is highly urbanized and continues a long-term trend of urban population concentration, focusing on challenges and opportunities in cities [4]. STATIN's documentation of urban–rural distributions underscores definitional and territorial nuances that shape surveillance and service delivery [8]. These data together support a targeted urban NCD response that complements national strategies [2,7].

### Methods (including keywords and definitions)

This paper is a secondary analysis and narrative synthesis using publicly available, authoritative datasets and reports. The primary dataset is the Jamaica Health and Lifestyle Survey III (2016–2017), a nationally representative, multistage household survey of Jamaicans aged ≥15 years, with anthropometry, blood pressure, and biospecimens, and with urban–rural disaggregation and neighbourhood constructs; the technical report was published in 2024 [1]. Supplementary sources are PAHO Health in the Americas indicators for Jamaica (updated 2024), PAHO core indicators portal, WHO Jamaica profiles, World Bank urbanisation statistics, and the Global Nutrition Report country profile [2-5,7].

We extracted urban-rural prevalence where explicitly reported (e.g., physical activity levels, overweight, CKD) and used national estimates where urban disaggregation was not available, clearly indicating the scope. Descriptive statistics are presented as proportions with supporting 95% confidence intervals where provided. Bivariate associations draw on JHLS III chi-square tests (e.g., physical activity by residence; parish differences). Inferential patterns are summarised from JHLS III adjusted models for neighbourhood constructs and substance use among urban residents (odds ratios with 95% confidence intervals as reported) [1].

Keywords and definitions follow JHLS III and international standards: Urban residence—as classified in the sampling frame used by STATIN and JHLS III [1,8]; Overweight/obesity—BMI  $\geq$ 25/ $\geq$ 30 kg/m²; Central obesity - elevated waist





circumference using sex-specific cut-offs; Insufficient physical activity—below WHO-recommended thresholds; Current tobacco/alcohol use - use within defined recent periods per JHLS III; CKD - biomarker-defined renal impairment per [HLS III protocol [1].

International benchmark indicators were taken as published: adult tobacco use (% of ≥15 years), overweight/obesity prevalence (% of adults), and diabetes prevalence (% of adults), ensuring year tags and measurement definitions match source conventions [2,3,5,7]. Urbanization (% population in urban areas) is from the World Bank SP.URB.TOTL.IN.ZS series [4].

All results are presented in British English with Vancouver citations in braces. The synthesis compares findings to prior Jamaican and regional literature, highlighting concordance and divergence. No primary human subjects research was conducted; therefore, ethics approval was not required.

### **Findings**

**Table 1.** Physical activity levels by area of residence (Jamaica, ≥15y). Source: JHLS III 2016–2017 (technical report 2024)

High physical activity: Urban 31.8%, Rural 43.5%; Low physical activity: Urban 39.8%, Rural 31.1%; Sex-specific differences: urban males high PA 41.3% vs rural males 56.6%; urban females high PA 22.1% vs rural females 30.0 (all patterns as reported; significance noted in JHLS III) [1].

Table 2. Overweight and obesity by residence.

Source: JHLS III 2016–2017 (technical report 2024)

Overweight (BMI  $\geq$ 25): Urban 56.9% vs Rural 50.9% (p-value per JHLS III); Obesity and central obesity—no statistically significant urban-rural differences; central obesity increases with education and household possessions [1].

 $\textbf{Table 3.} \ \textbf{Chronic kidney disease (CKD) prevalence by residence.}$ 

Source: JHLS III 2016-2017 (technical report 2024)

CKD overall 15.2%; higher in rural (18.5%) than urban (12.4%); higher in women (17.6%) than men (12.4%) [1].

Table 4. International benchmarks (Jamaica vs regional/global).

Sources: PAHO Health in the Americas (tobacco, overweight/obesity, physical inactivity); Global Nutrition Report (sex-specific obesity, diabetes context); WHO (expenditure/mortality context)

Adult tobacco use (≥15y): Jamaica 8.6% (2023); Overweight/obesity: 61.1% (2022); Insufficient physical activity: 32.6% (2016) [2]. GNR: female obesity above LAC averages, male obesity slightly below; diabetes affects a double-digit share of adults, especially women [5]. WHO/PAHO: Jamaica within uppermiddle-income norms for health spending; NCD mortality remains dominant [2,3,7].

### Results Descriptive findings

Urban residents in Jamaica display distinct behavioural risk profiles compared with rural counterparts. According to JHLS III, the prevalence of high physical activity is lower among urban residents (31.8%) than rural residents (43.5%), with low physical activity higher in urban areas (39.8% vs 31.1%) [1]. These differences are sex-specific: urban men report lower high-activity prevalence than rural men (41.3% vs 56.6%) and urban women lower than rural women (22.1% vs 30.0%) [1]. The pattern is consistent with urban transport and land-use contexts documented in the survey, including greater reliance on private motor vehicles in cities [1].

For adiposity, urban adults have a higher prevalence of overweight (56.9%) than rural adults (50.9%), whereas obesity and central obesity show no statistically significant urban – rural differences overall [1]. Nonetheless, central obesity rises with education and household possessions - markers more common in urban settings - suggesting socioeconomic gradients that may accentuate urban health risks [1]. These findings echo regional evidence on urban nutrition transitions reported by PAHO and the GNR [2,5].

Regarding dietary behaviours, JHLS III notes a lower frequency of sugarsweetened beverage intake among urban residents relative to rural residents in some categories. However, overall diet quality remains a concern, given the confluence of eating out and processed food availability in cities [1]. This complexity underscores that urban diet risks are not limited to a single product type and require comprehensive food-environment policies.

In terms of substance use, national adult smoking prevalence is low by regional standards (8.6%), with urban smoking levels shaped by neighbourhood conditions: within metropolitan areas, higher perceived physical and social disorder correlates with higher current tobacco and alcohol use [1,2]. This matter aligns with socio-ecological expectations that social environments influence coping behaviours.

Finally, outcomes vary by residence. CKD prevalence is lower in urban than rural areas (12.4% vs 18.5%), indicating that not all NCD outcomes are more prevalent in cities [1]. This divergence reminds policymakers that urban disadvantage does not uniformly extend to every condition, and that rural health system access, environmental exposures, and chronic care pathways require equal attention.

**Table 1:** Physical activity levels by area of residence (Jamaica, adults ≥15 years). **Source:** JHLS III 2016–2017 (Technical Report, 2024).

Physical activity level	Urban (%)	Rural (%)	Notes/sex-specific differences
High physical activity	31.8	43.5	Urban males 41.3 vs rural males 56.6; urban females 22.1 vs rural females 30.0
Moderate physical activity	28.4	25.4	Not statistically significant
Low physical activity	39.8	31.1	Higher in urban residents (p<0.05)



### **Bivariate findings**

Bivariate cross-tabulations in JHLS III demonstrate significant associations between physical activity level and residence, with p-values indicating higher high-activity prevalence in rural areas and higher low-activity prevalence in urban areas [1]. Age-stratified tables show that urban high-activity peaks around 25–34 or 45–54 years, depending on sex, whereas rural high-activity remains elevated across middle ages [1]. These differences are consistent with urban transport and occupational patterns and are comparable to findings from other Caribbean settings reported by PAHO [2].

Parish-level analyses reveal heterogeneity, with some metropolitan parishes (e.g., Kingston) exhibiting higher proportions of low physical activity, particularly among women, than many rural parishes [1]. Such spatial disparities within urban Jamaica suggest that neighbourhood and infrastructural features modulate risk, a nuance sometimes masked in studies reporting only national means [2].

Urban residence is associated with greater overweight in bivariate analyses (56.9% vs 50.9%), while no significant urban–rural difference is observed for

overall obesity or central obesity in JHLS III [1]. This matter partially contrasts with international literature that often finds higher obesity in urban areas; Jamaica's pattern may reflect countervailing factors such as rural energy expenditure coupled with dietary risks and measurement timing [2,5].

For CKD, bivariate comparisons confirm higher prevalence in rural residents, diverging from the expectation that urban risks necessarily translate into higher chronic disease outcomes [1]. This matter is consistent with some Caribbean reports noting rural disadvantages in access and environmental exposures, reinforcing the need for geographically tailored interventions [2].

Within urban areas, bivariate comparisons by neighbourhood perception indicate that higher physical or social disorder is associated with higher current tobacco and alcohol use. In contrast, higher collective efficacy is associated with lower current and lifetime use of these substances [1]. These patterns align with urban social epidemiology literature and provide actionable urban levers beyond individual counselling.

**Table 2:** Overweight and obesity by residence. **Source:** JHLS III 2016–2017 (Technical Report, 2024).

Indicator (BMI/waist- based)	Urban (%)	Rural (%)	Statistical notes
Overweight (BMI ≥25)	56.9	50.9	p<0.05 (significant difference)
Obesity (BMI ≥30)	28.6	27.4	Not significant
Central obesity (waist)	48	46.7	No significant urban- rural difference; increases with education & possessions.

**Table 3:** Chronic kidney disease (CKD) prevalence by residence. **Source:** JHLS III 2016–2017 (Technical Report, 2024).

Subgroup	CKD prevalence (%)	
Overall ( ≥15 years)	15.2	
Urban	12.4	
Rural	18.5	
Men	12.4	
Women	17.6	



### **Inferential findings**

JHLS III reports adjusted associations (odds ratios with 95% confidence intervals) linking neighbourhood constructs to substance use among urban residents, controlling for age and other covariates [1]. Specifically, higher perceived physical disorder and social disorder are associated with significantly higher odds of current tobacco use and alcohol use in urban settings. In contrast, higher collective efficacy is associated with significantly lower odds of current and lifetime substance use [1]. These inferential results strengthen causal plausibility for urban social-environment interventions.

Although JHLS III does not provide adjusted urban-specific odds for all metabolic outcomes in the public report, the direction of effects for physical activity and overweight by residence remains robust in stratified and adjusted comparisons presented in the technical chapters [1]. The inferential implication is that urban infrastructural and social factors likely mediate part of the risk gradient beyond individual demographics, a finding consistent with PAHO regional analyses [2,7].

International benchmarking provides contextual inference: Jamaica's relatively low adult smoking prevalence compared with the Americas and global averages may attenuate some cardiometabolic risks despite high adiposity [2]. Conversely, female obesity above regional averages and double-digit diabetes prevalence - as collated by the GNR - indicate substantial metabolic risk burdens where urban policy could yield outsized gains [5].

WHO and PAHO expenditure and mortality profiles place Jamaica within uppermiddle-income norms for health spending, yet NCD mortality shares remain high [2,3,7]. The inference is that improving urban primary-care pathways (screening, treatment, control) and modifying environments could convert expenditure into measurable risk factor control, particularly for hypertension and diabetes.

Finally, given Jamaica's high level of urbanization and ongoing concentration of population in metropolitan areas, the potential population-attributable impact of urban-focused interventions is considerable [4]. This matter aligns with the international literature that prioritizes city-centric design, mobility, and food-system reforms as cost-effective levers for NCD prevention and control (Table 5).

**Table 4:** International benchmarks: Jamaica compared with regional and global data. **Sources:** PAHO Health in the Americas (2024), WHO (2023–2025), Global Nutrition Report (2024), World Bank (2025).

Indicator	Jamaica	Regional/Global benchmark	Notes
Adult tobacco use (≥15y, 2023)	8.60%	Americas average: ~15%	Jamaica relatively low
Overweight/obesity (2022)	61.10%	LAC regional: ~63%	Aligned with regional norms
Insufficient physical activity (2016)	32.60%	Global average: ~27%	Higher than the global mean
Female obesity	Above LAC average	GNR 2024	Marked sex disparity
Male obesity	Slightly below LAC average	GNR 2024 Distinctive differen	
Diabetes (adult prevalence)	Double-digit %, higher in women	LAC norm ~10–12% Aligned with region	
Health expenditure	Upper-middle-income norm	WHO/PAHO profiles	Persistent high NCD mortality



Table 5: Inferential findings on neighbourhood context, residence, and NCD risks in urban Jamaica Source: JHLS III 2016–2017 (Technical Report, 2024); PAHO (2024); WHO (2023–2025); GNR (2024); World Bank (2025).

Domain	Finding	Interpretation
Neighbourhood disorder	Higher perceived physical and social disorder is associated with significantly higher odds of current tobacco and alcohol use (ORs adjusted for age and covariates)	Disorder increases stress-related coping behaviours in urban settings.
Collective efficacy	Higher collective efficacy is associated with significantly lower odds of current and lifetime tobacco and alcohol use.	Social cohesion protects against substance use
Physical activity & overweight	Urban-rural gradients in physical activity and overweight remain robust in stratified and adjusted comparisons.	Urban infrastructural and social factors mediate risks beyond demographics
Adult smoking (international benchmark)	Jamaica 8.6% vs Americas ~15%	Low smoking prevalence may mitigate some cardiometabolic risks
Female obesity & diabetes (GNR 2024)	Female obesity above LAC average; diabetes prevalence in double digits, higher in women	Indicates high metabolic burden and urgent need for gender-responsive policy
Health spending & mortality (WHO/PAHO)	Jamaica is within upper-middle- income norms for health expenditure; NCD mortality remains dominant.	Resources are not fully translating into effective NCD control
Urbanisation impact	High and increasing urbanisation concentration	Urban-focused interventions can yield substantial population-level gains

### Discussion

This synthesis demonstrates that urban Jamaica has lower levels of physical activity and higher overweight than rural Jamaica, with sex-specific differences. At the same time, obesity and central obesity do not show apparent urban-rural gaps in JHLS III [1]. Compared with regional literature, Jamaica's pattern of relatively low smoking prevalence and pronounced female adiposity stands out, suggesting interventions should prioritise diet and physical activity rather than tobacco as the leading urban lever [2,5]. The finding of higher rural CKD indicates that urban disadvantage is not universal across outcomes, underscoring the need for differentiated strategies by condition and geography [1].

Neighbourhood-level constructs matter within cities. The observed associations between disorder and substance use, and the protective role of collective efficacy, mirror international urban health literature and point to community development and violence prevention as health policies by another name [1,2]. These insights complement previous Jamaican studies that emphasised individual risk factor clustering without explicit attention to neighbourhood social environments [6].

Benchmarking shows Jamaica is typical for the Caribbean in overall NCD burden but distinctive in its sexed adiposity profile and low adult smoking, an advantageous platform for shifting policy energy towards food environments, active transport, and gender-responsive interventions [2,5]. The combination of urban infrastructure investments and primary-care strengthening can reduce risk factor prevalence and improve control rates.

Our findings are broadly consistent with PAHO and WHO regional assessments of the Americas, while adding granularity from JHLS III's urban-rural disaggregation [1-3,7]. Where contrasts exist - such as the absence of a clear urban-rural obesity gap in Jamaica versus typical regional patterns - contextual explanations include occupational activity in rural areas, migration histories, and measurement differences, warranting further analytic work with microdata.

Policy translation requires aligning city planning (walkability, public transport access, green space), food policy (marketing, procurement, retail zoning), and clinical pathways (screen–treat–control) in urban primary care. Given Jamaica's upper-middle-income resource envelope and active national initiatives, this alignment is feasible and likely to yield measurable gains in urban NCD risk reduction [1-3.7].

### **Conclusion**

Urban Jamaica exhibits a recognizable NCD risk profile marked by lower levels of physical activity and higher overweight relative to rural areas, alongside sex-specific adiposity differentials and low adult smoking. Not all outcomes are





worse in cities - CKD is higher in rural areas - highlighting the importance of tailored strategies. Neighbourhood social conditions within urban areas shape substance use, offering community-level levers.

Comparative benchmarks situate Jamaica near Caribbean norms for obesity and diabetes, but with opportunities arising from its low smoking prevalence. Aligning urban planning with public health and integrating robust primary care for hypertension and diabetes could sequentially compress risk exposure and improve control.

The weight of evidence from JHLS III and regional datasets supports prioritizing active mobility, food environment reform, and community cohesion as central planks of an urban NCD strategy. The anticipated impact is significant given Jamaica's urban population share.

Ongoing surveillance with urban disaggregation, including periodic JHLS updates and harmonized administrative data, will be crucial for accountability. Future work should deploy multilevel modelling of microdata to quantify how individual, neighbourhood, and parish-level determinants interact to shape urban NCD risks and outcomes.

In sum, urban health is both a challenge and an opportunity for Jamaica's NCD agenda; targeted, context-sensitive policies can deliver meaningful gains for population health and productivity [9,10].

### Recommendations

- a) Design cities for health. Expand sidewalks, shade, safe crossings, and connected cycling corridors; prioritise transit-oriented development in metropolitan parishes to raise daily physical activity [1,2].
- b) Reform food environments. Implement healthy procurement in public institutions, support healthier retail zoning near schools and workplaces, and strengthen front-of-pack labelling and marketing restrictions consistent with regional best practice [2,5].
- c) Strengthen urban primary care. Scale systematic screening and tight control for hypertension and diabetes, supported by team-based care and medication adherence programmes in high-density clinics [2,3,7].
- d) Invest in neighbourhood social capital. Fund community safety, public space activation, and civic groups that enhance collective efficacy, given their association with lower substance use in urban residents [1].
- e) Adopt gender-responsive approaches. Address female-specific barriers to activity (safety, caregiving time) and tailor dietary counselling and workplace wellness supports to women's needs [1,5].

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