INITIATIVE ON Sustainable Healthy Diets

Bangladesh

Urban nutrition profile

INITIATIVE ON Resilient Cities

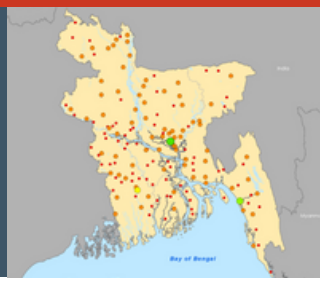
Total population: 171 million

Annual urban growth rate: 3%

33% of the urban population lives in greater Dhaka

52% of the urban population lives in informal settlements

Poverty rate (2022): 15% urban, 21% rural



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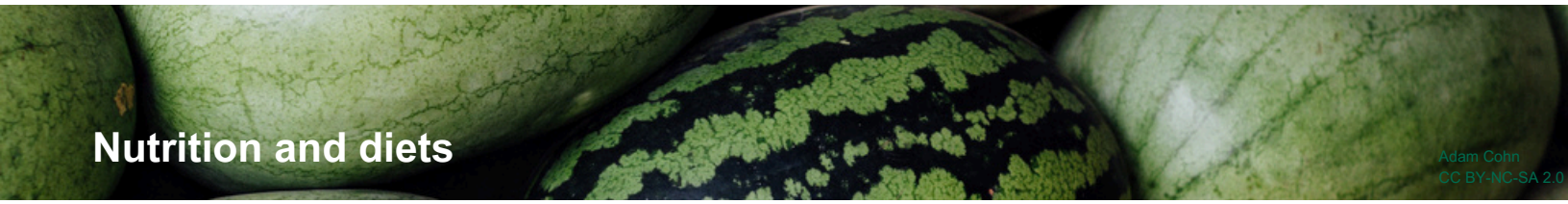
Key messages

- **Urban-rural disparities in undernutrition in children under five have dissipated. Stunting declined from 2014 to 2022 in both urban and rural areas, but more so in rural areas, leading to comparable rates of stunting in urban and rural areas (22 percent, 24 percent).**
- **Wasting remains "high" (according to the World Health Organization) in both urban and rural areas (11 percent).**
- **The prevalence of child overweight is low but increasing, especially in Dhaka.**
- **Vitamin A deficiency affects half of children under five. Vitamin D and iron deficiencies are higher in urban areas, with zinc and iodine deficiencies more prevalent in rural areas.**
- **Urban and rural diets lack fruits and vegetables. A third of urban households have inadequate caloric intake.**
- **The cost of a healthy diet increased from $3.03 to $3.64 per person per day from 2017–2022 and the percentage of the population unable to afford a healthy diet fell from 65 to 48 percent. Currently, 82 million people are unable to afford a healthy diet in the country.**
- **The diet diversity of young children has improved since 2011, but gains were seen mostly in rural areas. The percentage of all children fed the minimum meal frequency dropped by 20 percentage points from 2017 to 2022.**
- **Urban informal settlements are a concern – children have higher rates of stunting, lower dietary diversity, and higher prevalence of micronutrient deficiencies compared to other urban children.**
- **Overweight and obesity in urban adults is a critical problem. More urban women (48 percent) are overweight compared to rural women (35 percent); the same is true for urban men (29 percent) compared to 17 percent for rural men.**
- **Some urban nutrition interventions to tackle child undernutrition are being implemented, but few have been rigorously evaluated.**
- **Data on urban food environments (FEs) is becoming more available, but there are gaps in knowledge, particularly on the design and evaluation of interventions to counter the influence of the country's increasingly obesogenic urban FE.**
- **National policies include targeted actions to improve urban diets and nutrition. More could be done, however, to improve the healthiness and safety of FEs, leverage social protection programs for the urban poor to make healthy diets more affordable, and to implement double-duty actions to address all forms of malnutrition.**

Summary

Bangladesh has made steady progress in reducing undernutrition, including achieving its goal to reduce child stunting to 25 percent by 2023. However, like many other countries, Bangladesh is grappling with the rise in overnutrition and diet-related noncommunicable diseases (NCDs) such as hypertension, which now affects half of urban women. The government of Bangladesh is addressing urban diet and nutrition challenges through the national nutrition action plan. This plan includes actions and research to support urban agriculture, social protection for the urban poor, and urban nutrition-targeted disaster response. Research is needed to understand food and nutrition challenges in informal settlements, and to expand social protection programs that inadequately serve these vulnerable populations [1]. To address the multiple burdens of malnutrition, urban programs also need to incorporate double-duty actions [1] [2], which are defined as interventions that simultaneously address multiple forms of malnutrition, into their nutrition-sensitive social protection, agriculture, and school nutrition and health programming.

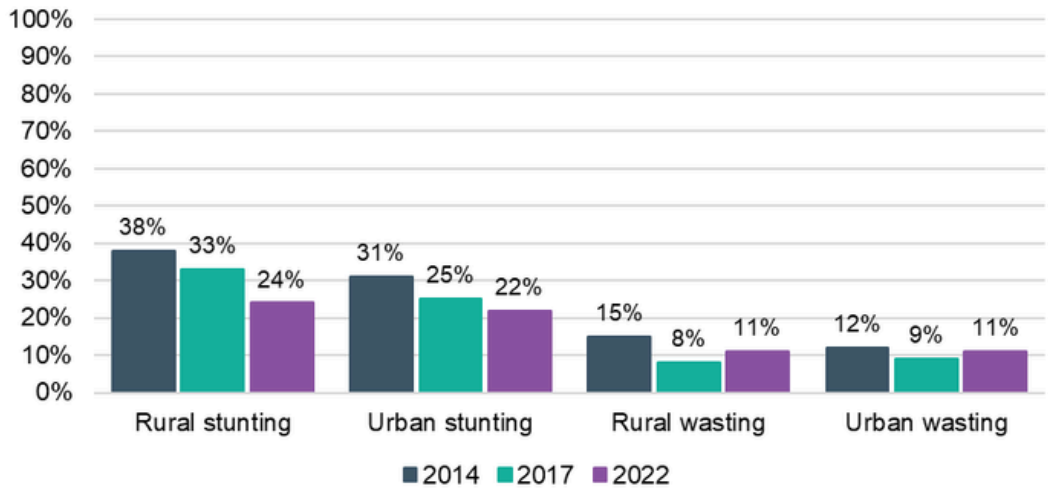


Bangladesh has made remarkable progress in reducing child undernutrition over the past decade, in both urban and rural areas. Currently, stunting affects 22 percent of urban and 24 percent of rural children, and wasting affects 11 percent of children in both urban and rural areas. The diets of both urban and rural residents lack fruits and vegetables, and urban residents appear to consume more food outside the home. It follows that overweight and obesity is becoming more prevalent, especially in urban areas.

Undernutrition

The prevalence of child undernutrition in Bangladesh has consistently declined over time [3]. While the prevalence of stunting in children under five years of age has historically been higher in rural areas, it is now similar between urban and rural areas (22 percent urban, 24 percent rural). The prevalence of child wasting declined only slightly since 2014, falling to 11 percent in both rural and urban areas (**Figure 1**) [4, 5, 6], a country-level prevalence ranked by the World Health Organization as "high" (between 10 and 15 percent) [7].

Figure 1: Child* nutrition status in Bangladesh, 2014–2022



Source: DHS [4, 5, 6]. **Note**: *Children under the age of five years. DHS = Demographic and Health Survey.

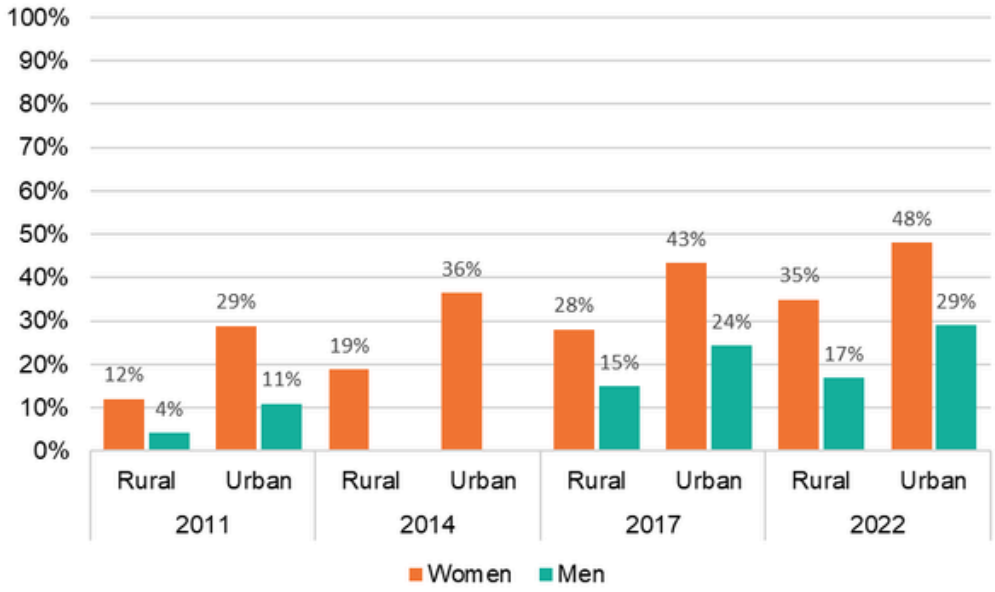
Overnutrition

Adult overweight and obesity [II] has increased dramatically over time in both rural and urban areas. Overweight and obesity, diabetes, and hypertension are more common among urban households than households in rural areas [8]. By 2022, 48 percent of urban women were overweight or obese, compared to 35 percent in rural areas, but the urban–rural gap narrowed (from a 17 to 13 percentage point difference) since 2011 (**Figure 2**).

Overweight also increased rapidly among men in both rural and urban areas in the past decade (with rural men experiencing more than a 4-fold increase in overweight or obesity and urban men a 2.5-fold increase) [6]. A study also documented that urban residents were less active than their rural counterparts [9]. Overweight and obesity are correlated with hypertension, diabetes, and other comorbidities in Bangladesh [10]. Also, parental overweight is positively associated with overweight and obesity in urban children and adolescents [11]. Overweight among urban adolescent girls aged 15-19 years is more prevalent (16 percent) than among those living in rural areas (13 percent) [6].

Bangladesh is experiencing a growing double burden of malnutrition (DBM) characterized by the coexistence of under- and overnutrition within individuals, households, and populations [12]. In 2018, overall DBM prevalence in mother-child pairs was 21 percent (13.4 percent overweight [OW] mother and stunted, wasted, or underweight [UW] child; and 7.7 percent UW mother and OW child). The prevalence of all types of DBM was higher in urban (25 percent) compared to rural areas (20 percent) [13].

Figure 2: Overweight and obesity* in adults in Bangladesh, 2011–2022



Source: DHS [4, 5, 6]. **Note:** *According to a BMI ≥ 25. The 2014 DHS did not include male overweight and obesity.

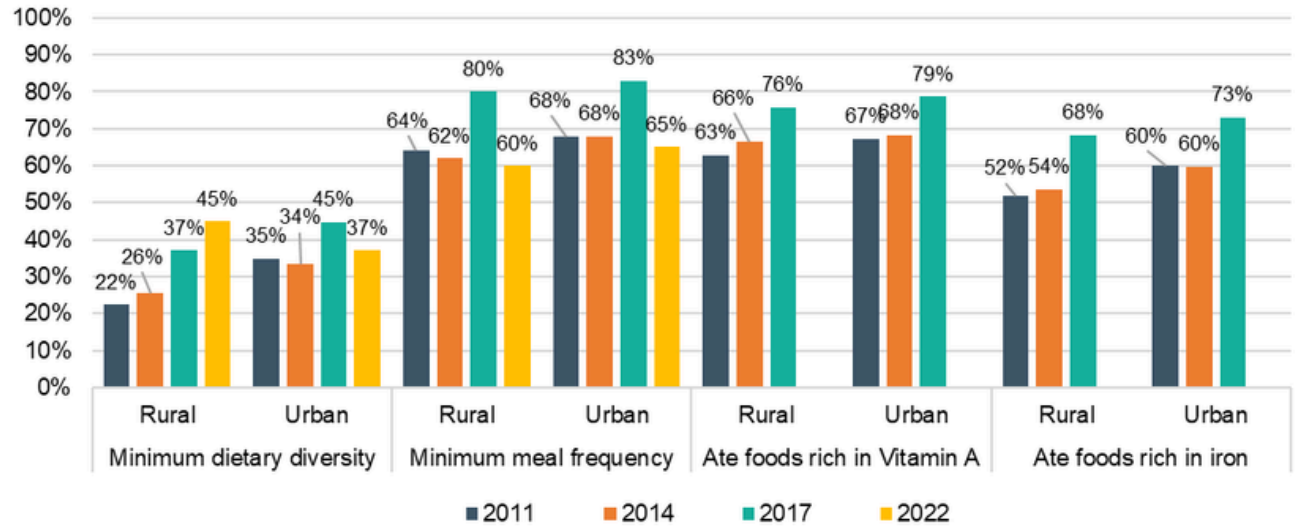
The prevalence of child and adolescent overweight has also increased, rising to 7 percent [III], with higher rates in urban than rural areas [14]. However, a more recent meta-analysis suggests a higher overall prevalence in this age group (14 percent overweight and 8 percent obesity)[IV] [15]. The National Adolescent Health Survey also found that urban adolescents were more likely to be overweight than rural adolescents (22 percent and 14 percent in ever-married girls, 14 percent and 9 percent in unmarried girls, 14 percent and 7 percent in unmarried boys) [16]. The prevalence of overweight children under five years of age is low nationally (2 percent) and comparable between urban (3 percent) and rural (2 percent) areas [5].

Another survey with a different approach [17], also conducted nationally in rural and urban areas, measured the same overall national prevalence of overweight children under five but disaggregated to district and division levels. The survey found a higher prevalence of overweight children under five in Dhaka district [v] (10 percent), while overweight in Dhaka division was closer to national prevalence rates (5 percent) [18]. National data show that urban residence and wealth are predictors of child overweight [19].

Progress in reducing undernutrition among children 6-23 months of age between 2011 and 2022 was accompanied by (and likely associated with) improvements in infant and young child feeding practices. For example, there were meaningful increases in the proportion of children that met the minimum dietary diversity (MDD - number of food groups consumed)[vi] apart from a notable drop of 8 percentage points from 2017 to 2022 in urban children meeting MDD. The percentage of children fed the minimum meal frequency also decreased by approximately 20 percentage points (pp) from 2017 to 2022 in both urban and rural areas [vii] (**Figure 3**) [5, 6][viii].

The proportion of urban and rural children that consumed at least one type of iron-rich or vitamin A–rich food in the past day increased also from 2011–2017 (**Figure 3**) [4, 5, 20]. In 2022, urban children were more likely to be fed according to recommended infant and young child feeding (IYCF) practices (34 percent) than rural children (27 percent) [6]. Also, 71 of IYC diets in informal settlements did not meet the recommended dietary diversity as compared to 65 percent and 58 percent in non-slum urban and rural areas, respectively [21].

Figure 3: Infant and young child* feeding practices in Bangladesh, 2011–2022



Source: DHS [4, 5, 6, 20]. **Note**: *Children ages 6–23 months of age. Data measure consumption over the last 24 hours. For the 2022 DHS, the consumption of vitamin A and iron rich foods indicators were not available. Also, the definition of meeting minimum dietary diversity changed from 4+ food groups (2014) to 5+ (2017 and 2022).

The prevalence of deficiencies in vitamin A (VAD), zinc, and vitamin D declined from 2011 to 2019 [22, 23]. The most recent micronutrient survey showed no urban/rural differences in VAD, but half of all children under five were affected by mild to severe VAD. However, the prevalence of vitamin D and iron deficiencies was higher in urban areas (27 percent for vitamin D, 22 percent for iron) than in rural areas (19 percent, 12 percent). For zinc and iodine deficiencies, a higher prevalence was observed in rural areas (34 percent for zinc, 26 percent for iodine) than in urban areas (26 percent, 8 percent) [23].

Urban areas are far from homogeneous and children living in informal urban settlements face higher nutritional risks. The Urban Health Survey (UHS) (2021)—a nationally representative survey of populations in city corporations, district municipalities, and large towns—found that the prevalence of childhood stunting in urban informal settlements was higher (34 percent) than in non-informal settlement urban areas (27 percent) and other urban areas (29 percent). However, child stunting, wasting, and underweight prevalence moderately declined since 2006 in both informal and non-informal settlements [24]. VAD and zinc deficiencies were also higher (38 percent for vitamin A, 52 percent for zinc) in these settlements than in urban (21 percent, 30 percent) or rural (20 percent, 49 percent) areas [22]. Also, oil fortified with vitamin A is reportedly consumed regularly by 21 percent, 28 percent, and 34 percent of people in rural, urban informal settlements, and urban non-informal settlements, respectively; and Vitamin D and E fortified oil was more likewise to be consumed among urban non-informal settlements (19 percent) compared to rural and urban informal settlements (12 percent each) [21]. A national survey also identified 25,000 food insecure street children; of this group, a third were homeless and 40 percent experienced a night without food in the week prior to the survey [25]. Additionally, among refugees living in dense humanitarian camps—such as the 900,000 Rohingya in Cox's Bazaar (the fourth-largest urban center in the country)—children under five have higher prevalence of malnutrition including stunting (41 percent) and wasting (15 percent) [26, 27], and inadequate IYCF practices (only 16 percent of Rohingya refugee children achieved a minimum adequate diet) [28].

In Bangladesh, urbanization is associated with more modern dietary patterns [29], and rapidly increasing consumption of ultra-processed foods (UPFs), sugar-sweetened beverages (SSBs), and prepared foods and meals. UPFs are unhealthy, inexpensive, highly palatable, and convenient manufactured food products that may displace nutritious whole foods and are associated with increased risk of adverse health outcomes [30]. The National Urban Socioeconomic survey (2020) showed that 45 percent of households ate prepared foods outside the home in the past day; and 61 percent of those purchases were from street vendors, and only half of the foods purchased were covered (that is, packaged or purchased from covered stalls to reduce contamination and food safety risks) [31]. Diet quality and diversity is also generally low in Bangladesh. Both urban and rural populations fail to consume the recommended daily amounts of fruits and vegetables [32]; consumption of at least one fruit is well below 50 percent (41 percent urban, 30 percent rural) [33]; and only 35 percent of urban households ate fruit in the past week, mostly in small quantities [31]. A national survey found that only 39 percent of women achieved minimum dietary diversity (35 percent rural, 46 percent urban) [23]. Most urban household expenditures are spent on food (51 percent), and rice is the main staple food consumed [31]. Close to half of the population was unable to afford a healthy diet in 2022, an improvement from 2017 when 65 percent could not afford a healthy diet. The cost of a healthy diet data is unfortunately not available for comparison by urban-rural residence.

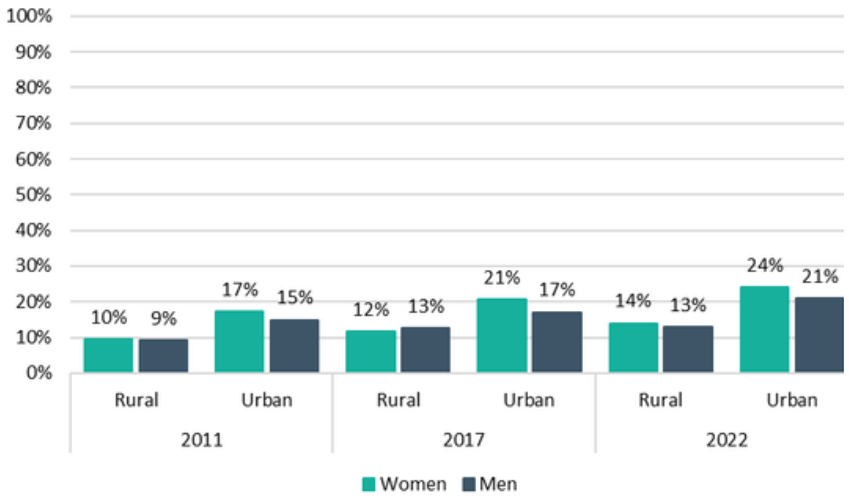
Suggestive evidence shows fast foods are growing in popularity among urban schoolchildren, adolescents, and university students [34]. Studies of Dhaka adolescents found that average consumption of fruits and vegetables was fewer than two servings daily [35], and another study of adolescents in low-income households showed low consumption of healthy foods (e.g., vitamin A–rich foods, nuts and seeds, and whole grains) [36].

Likewise, national data find that 16 percent of urban and 13 percent of rural adults often or always consume processed foods high in salt [9]. A nationally representative survey found a relatively low proportion of individuals 15 years of age and older consuming SSBs (soda, energy drinks, sports drinks) (12 percent urban, 8 percent rural) compared to other countries in the region (Pakistan—26 percent urban, 20 percent rural; Nepal—18 percent urban, 11 percent rural; Myanmar—23 percent urban, 15 percent rural), but nearly half of the urban and rural population surveyed consumed sweet tea, coffee, or cocoa [33]. A study of older adolescents (10–19 years) found that half of them commonly consumed SSBs, and there was significantly higher mean weekly SSB consumption in adolescents from non-informal urban settlements (compared to rural areas and informal urban settlements) [37]. The national mean SSB intake[ix] was higher in urban youth (3–19 years) (0.7 servings/week) than in rural youth (0.2 servings/week) and showed little absolute change from 1990 to 2018 [38].

Diet-related noncommunicable diseases

NCDs are an increasing problem–nineteen percent of total NCD deaths in Bangladesh are attributable to dietary risks. Diabetes mellitus (DM) prevalence increased among urban and rural men and women from 2011 to 2022, with similar differences between urban and rural women (24 percent, 14 percent) and urban and rural men (21 percent, 13 percent) (**Figure 4**) [4, 5]. DM is more prevalent in urban areas, and urban residents have a 1.8 times higher risk of prediabetes (and prehypertension), with the highest risk in Dhaka (2.3 times higher) [39].

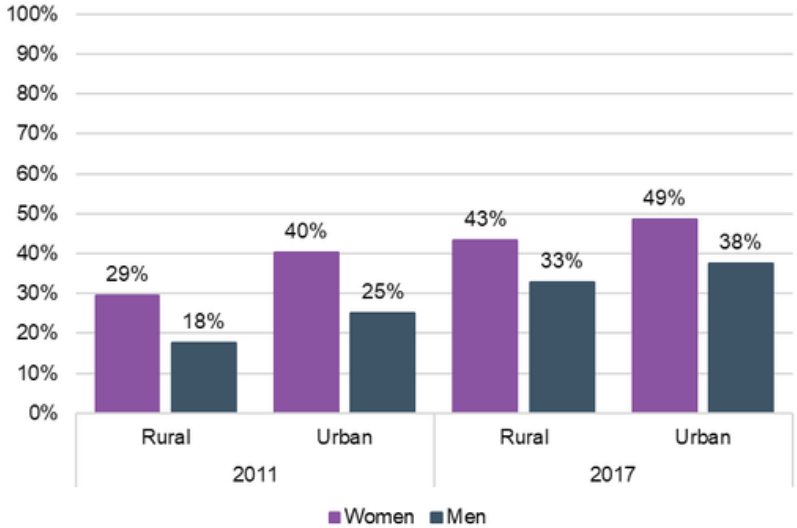
Figure 4: Adult* diabetes in Bangladesh, 2011–2022



Source: DHS [5, 6], 20. **Note**: *Adults 35 years of age and older.

Hypertension has increased in adults (35 years of age and above) since 2011 and now affects half of urban women (vs. 43 percent of rural women) and 38 percent of urban men (vs. 33 percent of rural men) (**Figure 5**).

Figure 5: Adult* hypertension in Bangladesh, 2011–2017



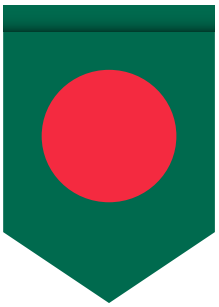
Source: [19, 5]. **Note**: *Adults 35 years of age and older. The 2022 DHS did not report hypertension prevalence in this age group by residence.

National urban nutrition plans, policies, programs and guidelines

The government of Bangladesh (GoB) has long prioritized nutrition. The Bangladesh National Nutrition Council (BNNC) was created in 1975, and since then, the GoB has developed a series of national nutrition plans. The Joint Action for Nutrition Outcomes group created monitoring dashboards for multisectoral nutrition planning and the BNNC developed nutrition profiles that can be visualized at national, division, and district levels.

The National Food and Nutrition Security Plan of Action (PoA) (2021–2030) [40] implements the National Food and Nutrition Security Policy, which aligns with food and nutrition security targets for the UN Sustainable Development Goals. The PoA acknowledges the health impacts of shifts away from traditional diets in urban areas and outlines strategic areas, including the promotion of–and research on–urban food production. The PoA emphasizes urban social protection, like increasing coverage of the Vulnerable Women's Benefit program (VWBP).

Despite the plan's emphasis, urban coverage of social safety net programs (SSNPs) is low. Coverage has been reported to be as low as 1 percent (Open Market Sale food-based safety net, Lactating Mothers Allowance Program) to 2 percent (Old Age Allowance monthly cash program) [31], with only 5 percent of SSNP expenditures directed to urban areas [41].



The GoB will continue to subsidize staple foods (rice [x], wheat flour) for urban populations to increase food access, as well as to incorporate nutrition into disaster response.

The National Urban Health Strategy (UHS) (2020) includes nutrition sensitization by urban health service providers with support from the GoB to cities. However, a review of the strategy noted that it has little explicit focus on urban nutrition services and also does not address gender equity in healthcare.

The National Plan of Action for Adolescent Health Strategy (2017–2030) focuses on adolescent nutrition, such as undernutrition and micronutrient deficiencies. Adolescents in informal settlements are highlighted as populations for whom data are required on specific health needs and services.

The Bangladesh Food Safety Authority established food safety laws and regulations, but implementation could be strengthened, particularly in informal urban markets.

The 8th Five Year Plan includes developing an urban health and nutrition strategy and action plan, an urban needs assessment, and a permanent cross-institutional mechanism to address urban health and nutrition and improving urban primary healthcare, including nutrition and NCD screenings [42]. Urban social protection coverage remains low compared to coverage in rural areas, in spite of evidence from the COVID-19 pandemic showing that urban household participation in social programs was associated with reduced prevalence of food insecurity (9–13 pp) and moderate and severe food insecurity (7–13 pp) [43].

The National Multisectoral Urban Nutrition Strategy (MUNS) is currently being drafted by the BNNC. The MUNS will include a focus on low-income urban communities, policies for urban food systems (e.g., urban food production) investments in urban social safety nets and strengthening nutrition linkages in the next version of the UHS.

Urban nutrition interventions

Evidence on urban nutrition interventions is mostly focused on testing different approaches and nutrient or food supplements to improve maternal and young child nutrition (**Table 1**), with a focus on undernutrition. Of three randomized controlled trials, one found a small protective effect of a high zinc/low iron supplement targeted to children (9-11 months) on linear growth faltering [44]; another, focused on moderate acute malnutrition, showed a slightly greater impact on weight-for-length and weight-for-age z-scores from a specially formulated food supplement compared to a standard supplement [45]; a three-month prenatal nutrition education program increased maternal weight gain and infant birth weight and reduced the prevalence of low birthweight [46].

Nonrandomized studies show mixed results from food supplementation on child undernutrition, including improved growth and appetite with egg, milk, and/or micronutrient supplements [47, 48], but no impacts from a cereal-based supplement [49]. In women of reproductive age, fortified lunch with iron-folic acid supplements and behavior change communication reduced anemia prevalence [50]. Intensive prenatal maternal infant and young child nutrition services improved dietary diversity [51]. Populations studied included malnourished children in informal settlements [45, 47, 48, 49], and working [50] and/or pregnant women [8]. Evidence is lacking on urban nutrition programs targeting school-age children, adolescents, and men. Several studies failed to use rigorous evaluation designs, limiting conclusions about urban nutrition interventions in this context. In addition, supplementation studies typically addressed a specific nutrient deficiency or type of malnutrition, but no studies focused on improving overall diet quality and diversity. Interventions must be tested to address urban needs, but evidence on what works to improve diets and to address all forms of malnutrition is lacking.

Table 1: Nutrition interventions in urban Bangladesh, 2010–2022

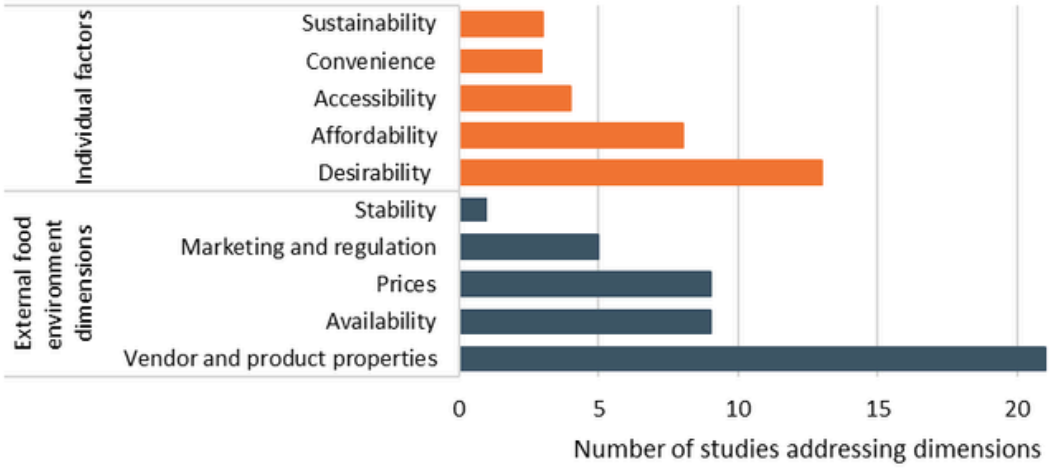
Randomized controlled trial	Population	Intervention	Results
Yes [44]	Children (9–11 months)	Zinc supplementation (6 months) of different dosages, duration, and frequency: (1) standard MNP daily (4.1 mg zinc/10mg iron), (2) high-zinc (10 mg)/ low iron (6 mg) (HiZn LoFe) MNP daily, (3) HiZn LoFe, no iron MNPs on alternating days, (4) dispersible zinc (10 mg) daily, (5) dispersible zinc (10 mg) daily for 2 weeks and 12 weeks, (6) placebo powder daily.	Small protective effect of HiZn LoFe MNP against declines in growth (LAZ) compared to placebo; no differences in incidence or prevalence of diarrhea in any group.
Yes [45]	Children (12–18 months) with MAM	Food supplementation (3 months), comparison of two: (1) MDCF-2 and (2) RUSF.	Slightly increased growth (mean weekly change in WHZ, WAZ) in acutely malnourished children in MCDF-2 compared to existing supplement (RUSF); changes in plasma proteins/bacteria that mediate growth, but no change in MUAC or LAZ.
Yes [46]	Pregnant women	Prenatal nutrition education (3 months) focused on increasing frequency of food intake and consumption of khichuri.	Improved birth weight, maternal weight gain, and lower rate of LBW compared to control.
No [47]	Children (12–18 months) with LAZ < 1	Food and micronutrient supplementation (daily egg, 150mL milk for 90 feeding days, and 1 sachet MNP for 60 feeding d) and nutrition counseling compared to (stunted) control.	Increased growth in stunted children and children at risk for stunting compared to control.
No [48]	Children (12–18 months) with LAZ < −2	Food supplementation (daily egg and 150mL milk 6d/3m), psychosocial stimulation compared to (non-stunted) control.	Appetite scores increased in stunted children compared with non-stunted children.
No [49]	Children (6–23 m) with WAZ <−2	Food supplementation (rice/lentil food daily for 5 m) compared to (non-stunted) control.	Suboptimal growth (height and weight gain) in both groups.
No [50]	WRA	IFA supplements and BCC: (1) lunch with fortified rice, weekly IFA, and monthly BCC, (2) lunch control (regular meal and BCC), (3) non-meal intervention (twice weekly IFA, enhanced BCC), (4) non-meal control (BCC only).	Anemia prevalence reduced with fortified lunch (32 pp) and non-meal intervention (12 %).
No [51]	Pregnant women, new mothers	Intensive MIYCN service provision (hiring, training of counselors, home visits, and BCC) vs. standard maternal services.	Increase in number of food groups consumed, and minimum dietary diversity in intensive compared to standard; no effect on prenatal IFA or calcium consumption.

Note: BCC = behavior change communication; HiZn LoFe = high-zinc/low-iron; IFA = iron-folic acid; LAZ = length-for-age z-score; LBW = low birthweight; m = months; MAM = moderate acute malnutrition; MDCF-2 = microbiota-directed complementary food prototype; mg = milligrams; MIYCN = maternal, infant, and young children nutrition; mL = milliliters; MNP = multiple micronutrient powder; MUAC = mid-upper arm circumference; pp = percentage points; RUSF = ready-to-use supplementary food; WAZ = weight-for-age z-score; WRA = women of reproductive age. Khichuri is a South Asian dish made of rice and lentils (dal).

Urban food environments

Studies on urban food environments (FE) (n=32) were mostly based in Dhaka (59 percent), and they were primarily descriptive (n=19), conceptual (n=4), modeling (n=4), or laboratory studies (n=2). Quantitative methods (n=22) were most common, followed by qualitative (n=7) and mixed methods (n=3). The dominant FE types were formal (such as supermarkets) and informal (such as street markets) (n=12, 14), while institutional FEs (such as schools) had limited evidence despite their key role in child nutrition (n=3). Cultivated FEs [xi] (such as urban gardens) were absent despite being featured in national policy. Vendor and product properties and desirability were the most studied dimensions, followed by prices, availability, and affordability (**Figure 6**).

Figure 6: Studies of urban food environments in Bangladesh, 2000–2023



Source: Authors. **Note**: This figure summarizes the results of a systematic scoping review of the urban FE literature in Bangladesh. Papers were categorized under multiple dimensions of the food environment as appropriate.

Studies of vendors/product properties and consumer characteristics outlined knowledge, attitudes, and practices. In Dhaka, a characterization of informal vendors by level of mobility (permanent, semi-permanent, mobile, semi-mobile) around a hospital showed how vendor types alternate by time of day in response to both varying consumer demand and tolerance by authorities. These findings also show the crucial role of vendors in the resilience of a mega urban food system [52].

Most of the other studies were related to food safety. There was greater contamination of complementary foods with fecal coliforms in urban than in rural households, mainly due to poor food preparation practices; contamination was associated with child malnutrition and diarrhea [53]. Arsenic intake was double the maximum tolerable daily limit in urban areas and higher than in rural areas, a finding attributed to higher urban consumption of fish, meat, milk, and fruit [54][xii]. Poor hygiene was common among street vendors, and contracting additional employees was associated with improved hygiene [55]. A qualitative study describing the challenges of street vendors identified gaps in regulation and legal rights [56]. Poor food handling was also found in urban restaurants [57]. Street vendors around schools had poor knowledge of food safety risks [58], and other vendors were poorly informed of food safety impacts on consumer health [59]. Another study found most vendors had adequate food safety knowledge (73 percent), but few used safe practices (1 percent) [60].

Other studies highlighted consumer food safety awareness, with students acting as knowledge brokers with vendors [61]. While urban students had better food safety knowledge than rural ones, they did not have higher individual food handling practices (such as hygiene, preparation, and storage) [62]. A study found urban supermarket consumers were more worried about food hazards than consumers at rural/urban bazaars [63], yet it is unclear whether this was due to higher education and/or food safety awareness of supermarket consumers, or that more educated consumers are more likely to shop in supermarkets due to concerns with bazaar hygiene. Finally, two studies examined regulatory violations: documenting that violat in labeling and promotion of breastmilk substitutes [64] and a study that found sufficient vitamin-A fortification levels in packaged edible oils but insufficient fortification in unbranded, bulk, edible oils, which make up most of the edible oil market volume [65].

Several studies examined consumer behavior, such as the relationship between FEs and food purchases or intention. Six studies focused on healthy and/or sustainable diets. Food safety, ecolabeling, trust, and climate change concerns were associated with buying organic produce [66, 67, 68]. Adolescent beliefs and taboos affected preferences, a qualitative study elicited views that vegetables are associated with poverty and associated 'rich' foods like meat and milk with wealth [69]. A qualitative study explored student food preferences around consumption and influences of unhealthy offerings in/around schools: cultural changes toward convenience, less home food preparation, and food safety concerns were barriers to healthy diets [70]. In urban areas, high food prices presented barriers to efforts to empower women to improve their diets through increased nutrition knowledge [71]. Consumer trust was a factor in food preferences: trust in information sources was associated with milk purchase intention in a crisis [72], and trust affected halal food purchases [72], mediating relationships between customer satisfaction and restaurant revisit intention [74].

Research identified FE predictors of unhealthy food consumption, such as preferences, convenience and marketing, reflecting the increasing influence of obesogenic urban FEs. A study of university students found that identity, preferences, unhealthy food marketing, availability, and accessibility were associated with fast food consumption [75]. Another study noted that stress related to food choice was associated with planning to consume fast food [76]. An analysis of the relationship between marketing and consumption suggests marketing has no impact on the consumption of unhealthy snacks, although advertising promoted the availability and taste of those products [77]. A study identified factors that fast food outlets could promote to gain student consumers, including reputation, accessibility, price, and taste, which raises concerns of unhealthy food marketing to youth [78].

There was also some research on the short-term effects of national COVID-19 mobility and hygiene restrictions on food affordability and availability in urban FEs.

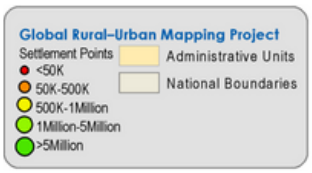
More urban households lacked food stocks than rural ones (81 percent urban, 62 percent rural), and monthly urban food expenditures decreased as rural food expenditures increased, possibly from food price hikes [79]. Indeed, urban food prices increased during lockdowns in 2020 and 2021, reducing food affordability and consumption for urban consumers [80, 81] and disproportionally for vulnerable urban migrant populations [82] and residents of informal settlements [xiii]. Negative supply-side impacts also occurred in profit losses for urban retailers [83]. Our review did not identify papers on post-COVID trends or responses, although analyses on the pandemic recovery highlighted the emergence of new urban poor and emphasized the role of social program coverage in supporting rural resilience (cash, food).

In summary, existing FE research in Bangladesh focuses on consumers (34 percent), vendors (31 percent), students (16 percent), and retail outlets (13 percent). Evidence is lacking on informal settlements (3 percent) and migrant workers (3 percent). Recommendations to address challenges outlined in the literature include school-based interventions, such as increasing the availability of healthy foods and restricting unhealthy food marketing to prevent the adoption of unhealthy diets that persist into adulthood. The rise in overweight prevalence among urban adults—especially in women who are the primary decision-makers on food purchases and preparation—suggests a need for consumer-oriented interventions focused on the promotion of healthy diets and lifestyles. Food safety training and support for vendors is needed, and extant regulations must be monitored and enforced (such as food safety laws and fortification guidelines). Despite these challenges, we did not identify any evaluations of urban FE interventions. There is a clear need to assess interventions in the urban FE as Bangladesh grapples with coexisting problems of undernutrition, overnutrition, poor quality diets, and diet-related NCDs.

Endnotes

[i] Double-duty actions are interventions, programs, or policies that simultaneously prevent or reduce the risk of both nutritional deficiencies leading to underweight, wasting, stunting, and micronutrient deficiencies and problems of overweight, obesity, and diet-related NCDs.
[ii] Overweight and obesity prevalence is measured as a BMI equal to or greater than 25 (total overweight and obese).
[iii] Pooled prevalence from Biswas et al. (2017) [18] systematic review and meta-analysis.
[iv] Child overweight and obesity measurement guidelines: World Health Organization.
[v] In Bangladesh, divisions are the first level of administrative unit, of which there are eight total, each with the name of the major city within its boundaries. Each division is divided into districts, which are smaller administrative units, and then into smaller units called upazilas.
[vi] Minimum dietary diversity (MDD) measures food intake of children ages 6–23 months from at least four food groups from a list of seven groups (grains, roots, and tubers; legumes and nuts; dairy products; flesh foods; eggs; vitamin A–rich fruits and vegetables; and other fruits and vegetables).
[vii] MAD is a composite indicator composed of minimum dietary diversity and minimum meal frequency (MMF); MMF is the minimum recommended number of feedings daily for age and breastfeeding status. Declines in MAD appear to be driven by declines in MMF in both rural and urban areas from 2017 to 2022.
[viii] The 2022 DHS took place from August to December 2022, during the global COVID-19 pandemic, which likely affected IYCF practices particularly in urban areas.
[ix] Mean intakes in 248 gram servings a week of SSBs, which are defined as any beverage with added sugars and 50 kilocalories per 237 gram serving, such as commercial and homemade beverages, soft drinks, energy drinks, fruit drinks, punch, lemonade, and aguas frescas, but exclude 100 percent fruit and vegetable juice, non-caloric artificially sweetened beverages, and sweetened milk [38].
[x] In collaboration with the World Food Programme and Nutrition International, the GoB is also producing rice fortified with zinc, iron, folic acid, vitamin A, vitamin B1, and vitamin B12. Fortified rice composes part of the package under the Vulnerable Women's Benefit program.
[xi] The cultivated FE includes natural FEs where consumers procure foods from home gardens, agricultural systems, orchards, fields, and pastures [86].
[xii] Data on heavy metals and blood lead levels will be measured for the first time in the Multiple Indicator Cluster Surveys (MICS): Round 7 (2024–2025) by the Bangladesh Bureau of Statistics and UNICEF.
[xiii] Residents of informal urban settlements suffered greater income shocks (−18%) from the two COVID-19 lockdowns (2020, 2021) than rural households (−15%); in August 2021, per capita daily income of these populations was lower than in rural areas despite higher costs of urban living. Informal workers, women, and the urban poor were most impacted by the social and economic impacts of COVID-19 [83]. Another paper (not part of our review) using food prices collected during the pandemic found the burden of unaffordability was significantly greater in rural (42 percent) than in in urban areas (39 percent) [85].

Map (page 1): Urban Settlement Points: Bangladesh. Center for International Earth Science Information Network (CIESIN), Columbia University, CUNY Institute for Demographic Research (CIDR), International Food Policy Research Institute (IFPRI), The World Bank, and Centro Internacional de Agricultura Tropical (CIAT). 2017. Global Rural-Urban Mapping Project, Version 1 (GRUMPv1): Settlement Points, Revision 01. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). Accessed 2023.



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