# Unhealthy foods in Rajshahi, Bangladesh

*Consumption, perceptions, and exposure to advertisements*

Data Note 38 | December 2023

**ABOUT THIS DATA NOTE |** The Transforming Agrifood Systems in South Asia (TAFSSA) district agrifood systems assessment aims to provide a reliable, accessible, and integrated evidence base that links farm production, market access, dietary patterns, climate risk responses, and natural resource management with gender as a cross-cutting issue in rural areas in Bangladesh, India, and Nepal. It is designed to be a district-level multi-year assessment. Using data collected in February-April 2023, this data note describes the types of unhealthy foods people are eating, where they get those foods, perceptions about key unhealthy foods, and from what source they receive information about different unhealthy foods. This is one of a set of data notes that, together, provide a holistic picture of the agrifood system in the district.

**Figure 1. District location within Bangladesh**
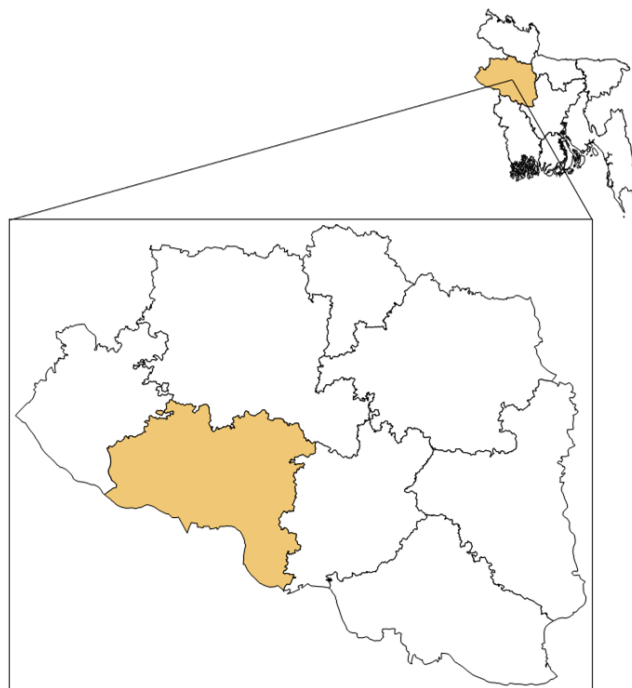


**Figure 2. Highlights from this data note**



**>40%** Adults and adolescents consumed sweets and ice cream in previous 24h

**~60%** Adults and adolescents considered biscuits as nutritious and safe

**45%** Male adults consumed unhealthy foods in the afternoon

**>80%** Households purchased unhealthy foods from haats or retail shops

**~2** Times higher exposure to ads for unhealthy foods among male adults than female adults

## OVERVIEW OF CONTENTS

TAFSSA's district-level agrifood systems assessment included interviews with three respondents per household: a female adult (aged 20+ years), a male adult (aged 20+ years), and an adolescent (aged 10-19 years). A description of the household and respondent sampling strategy is provided at the end of this data note.

In this data note, you will find information on background characteristics of the households and individuals who were interviewed. This is followed by information on the types of *unhealthy foods* people are eating, which was measured using two methods. Respondents were asked about the unhealthy foods they ate the day before the interview (24-hour recall) and about how often they ate certain unhealthy foods in the past week (food frequency questionnaire). The 24-hour recall was conducted using the Global Diet Quality Score (GDQS) application, which also captures when (at different eating occasions such as breakfast, a snack between breakfast and lunch, lunch, etc.) people ate each unhealthy food item.

In addition to what people eat, you will find information on *where* they get their unhealthy foods.

Finally, you will learn *why* people choose to eat certain unhealthy foods. Respondents were asked about the availability, accessibility, taste, and other factors that may influence their decisions to consume certain unhealthy foods.

## Table 1. Household and individual characteristics

| Household characteristics | | Individual characteristics | | | | |
|---|---|---|---|---|---|---|
| | | | Adult female | Adult male | Adolescent female | Adolescent male |
| Number | 1000 | Number | 968 | 449 | 501 | 499 |
| Female-headed, % | 8 | Age, yrs. mean (range) | 37 (20-71) | 44 (20-72) | 15 (10-19) | 14 (10-19) |
| Education of head, yrs, mean | 5 | Currently in school, % | - | - | 82 | 90 |
| Involved in agriculture, % | 91 | Education, yrs. mean (range) | 5 (0-17.5) | 5 (0-17.5) | 7 (3-11.5) | 7 (0-11.5) |
| Has improved toilet[1], % | 98 | Married, % | 96 | 98 | 27 | 2.0 |
| Drinking water source | | Employed, % | 9 | 99 | 1 | 19 |
| | | Primary occupation | | | | |
| Tube well or borehole, % | 89 | Unpaid household work, % | 92 | 0 | 27 | 0 |
| | | Farming, % | 2 | 46 | 0 | 2 |
| Piped to neighbor, % | 4 | Own enterprise or business, % | 1 | 15 | 0 | 2 |
| | | Student, % | 0 | 0 | 72 | 84 |

[1]Improved toilet includes flush or pour flush toilet, pit latrine, and twin pit/composting toilet

## MEASURING UNHEALTHY FOOD CONSUMPTION |

Diets were measured by asking people about what they ate or drank on the previous day, from the time they woke up until the time they went to bed and did not eat or drink anymore. This includes all foods, both healthy and unhealthy, consumed at home and away from home. This data note focuses only on the unhealthy foods, which were categorized in 7 groups (see box on right). The Global Diet Quality Score (GDQS) application (Bromage et al, 2021)[2] was used to capture this information.

Among the 9 GDQS unhealthy food groups (7 unhealthy food groups plus red meat and high-fat dairy, which are unhealthy when consumed in excess), we have excluded two – refined grains and baked goods, and white roots and tubers. These were excluded because the consumption rates for these two food groups approached nearly 100% among all survey respondents, as these foods constitute staple dietary items or the most consumed sources of carbohydrates across the study regions. We show the percentages of individuals who consume foods from the 7 unhealthy groups (**Figure 3**), commonly consumed foods and beverages within the unhealthy food groups (**Figure 4**), how many times per day people eat unhealthy foods (**Figure 5**), and who eats unhealthy foods at various eating occasions (**Figure 6**).

**GDQS unhealthy food groups included in this data note**

1. Processed meat
2. Sugar-sweetened beverages
3. Sweets and ice cream
4. Fried foods at home
5. Purchased fried foods
6. High-fat dairy[2]
7. Red meat[2]

[2]Bromage S, Batis C, Bhupathiraju SN et al. Development and validation of a novel food-based global diet quality score (GDQS). Journal of Nutrition 2021, volume 151, number 10S, Supplement 2.

**Figure 3. Consumption of unhealthy food groups on previous day (GDQS unhealthy food groups)**



## FINDINGS

✓ Male adults and adolescents consumed more sweets and ice-cream than their female counterparts.

✓ Adult males consumed twice as many sweets and ice-cream and red meat per day than adult females.

✓ Compared to adult males and females, adolescent males and females consumed twice as much purchased fried foods and sugar sweetened beverages.

✓ Adolescent females consumed slightly higher processed meat, fried foods at home, and high-fat dairy than adolescent males..

Note: [1]High-fat dairy and red meat are considered unhealthy when consumed in high quantities.

# Figure 4. Foods and beverages consumed by GDQS unhealthy food group
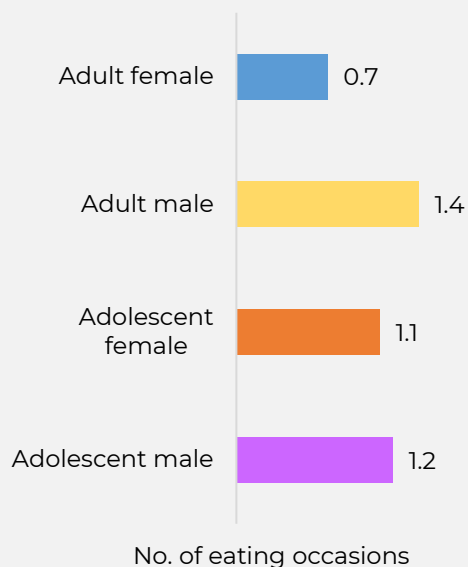
## Adult female

## Adult male

## Adolescent female

## Adolescent male
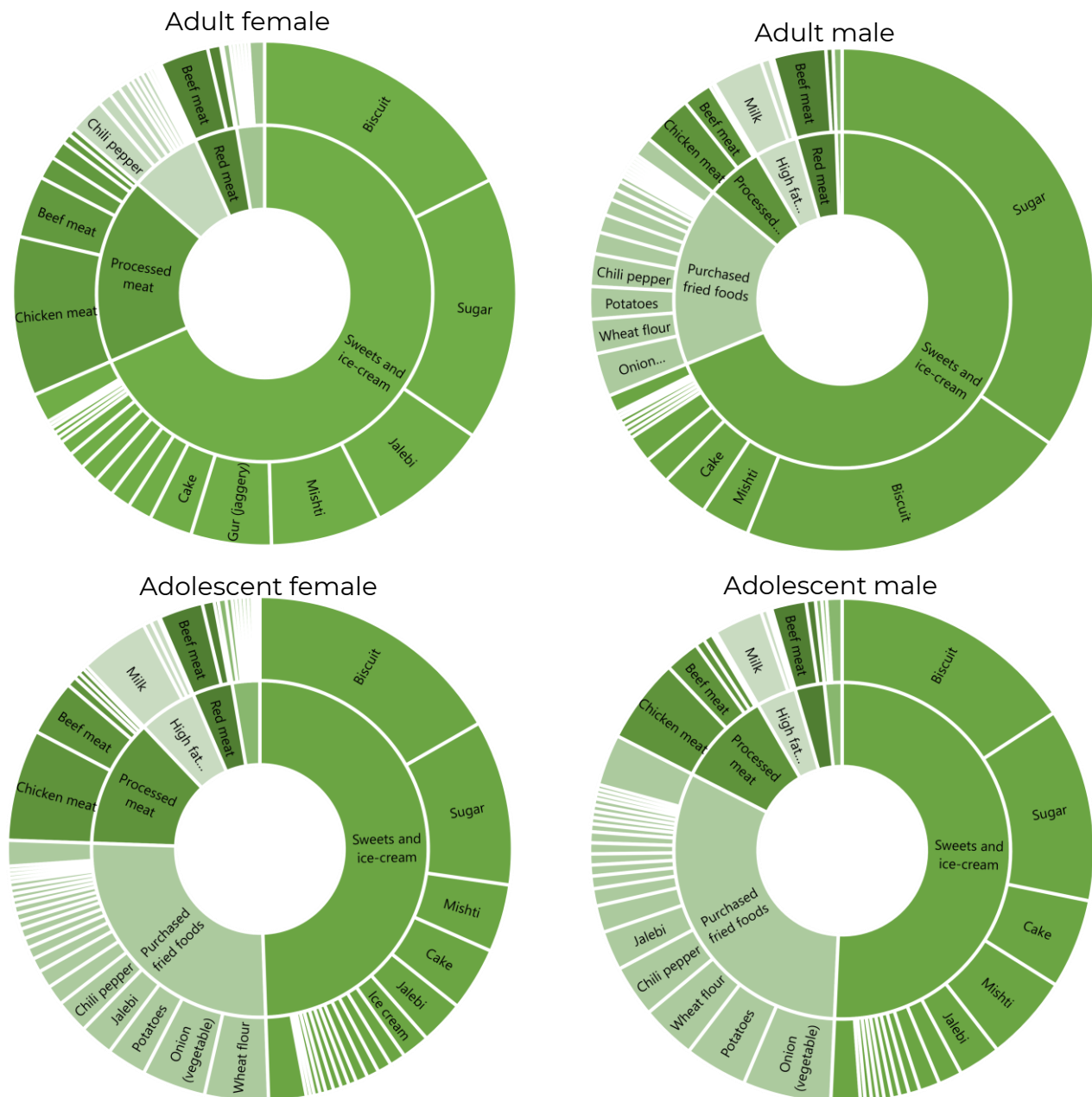
These figures show the percent reporting consumption of each food and beverage for each GDQS unhealthy food group. Only the foods and beverages consumed in larger proportions are indicated by name. The width of the outer blocks for each food or beverage shown is scaled according to the relative percent reporting consumption of that food or beverage. The size of each block in the inner circle reflects the sum of all percentages across all foods and beverages reported as consumed for that unhealthy food group.

## FINDINGS

✓ More than 50% of total unhealthy foods consumed were sweets and ice creams for adults and adolescents. Sugar, biscuits, jalebi, mishti, and cakes were the most common items.

✓ Within the purchased fried foods group, the specific foods consumed differed across respondent types.

**Figure 5. Mean number of eating occasions when unhealthy foods were eaten on previous day**

| Group | No. of eating occasions |
|---|---|
| Adult female | 0.7 |
| Adult male | 1.4 |
| Adolescent female | 1.1 |
| Adolescent male | 1.2 |

No. of eating occasions

**FINDINGS**

✓ Adult males consumed unhealthy foods on twice as many eating occasions as adult females on a single day.

✓ 45% of adult males consumed unhealthy foods in the afternoon.

✓ Male adults and adolescents consumed more unhealthy foods before breakfast and in the afternoon than any other eating occasion.

✓ Female adults consumed more unhealthy foods before breakfast than any other eating occasion.

✓ Adolescent females consumed more unhealthy foods than adult females during all eating occasions except pre-breakfast.

**Figure 6. Percent who ate any unhealthy food on previous day, by eating occasion**

■ Adult female   ■ Adult male   ■ Adolescent female   ■ Adolescent male

%
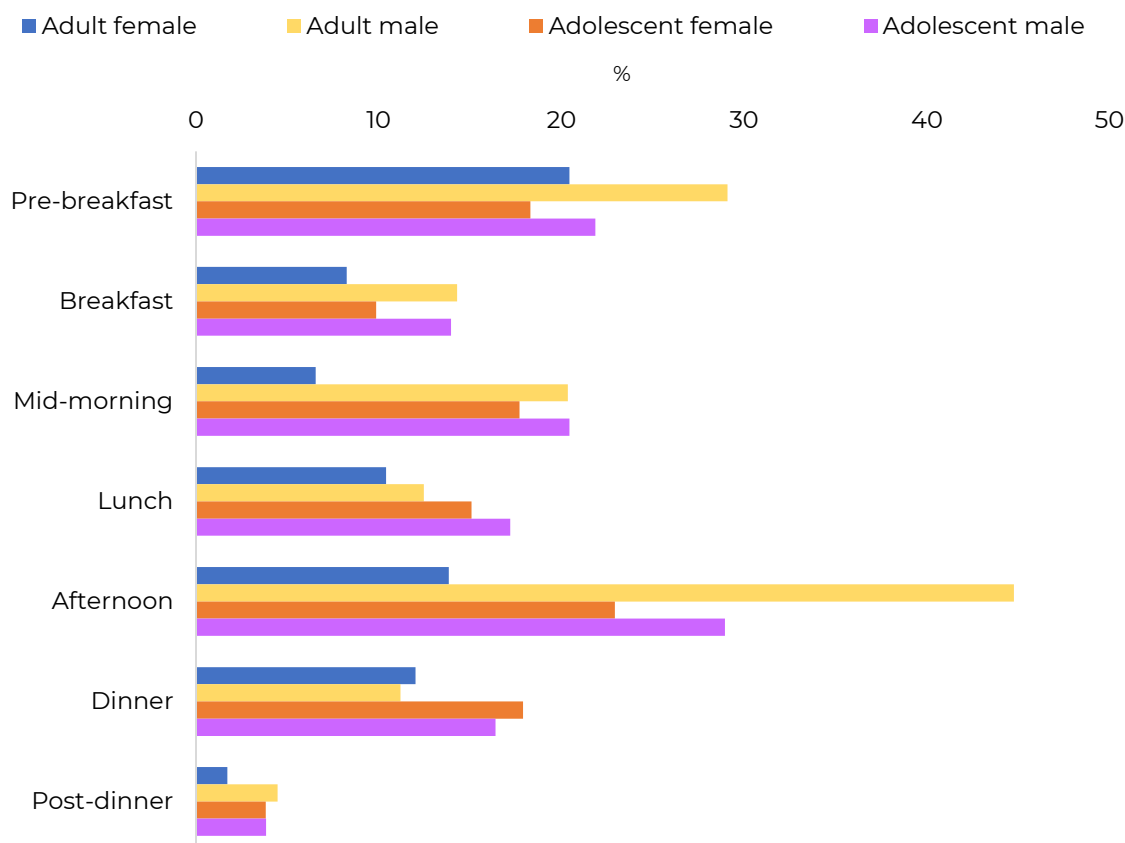
## SENTINEL UNHEALTHY FOODS |
In addition to the GDQS, which provided information about all unhealthy foods consumed in the previous 24 hours, we selected a set of 6 "sentinel unhealthy foods" (see box on right) to better understand how frequently these common examples of unhealthy foods are consumed, where people buy them, and their perceptions about these foods.

Respondents were asked about where they purchased these unhealthy foods (haat, retail shop, or other sources) (**Figure 7**) and how frequently they consumed these foods in the past 7 days (**Figure 8**).

For the two most-consumed unhealthy foods (biscuits and fried foods), we examined people's perceptions about some key aspects. These included whether they know of a vendor who sells the food, if the food is safe to eat, easy to acquire near where they spend most of their time, is not too expensive, is fast and easy to prepare, tastes good, fills their stomach, is nutritious, and if their family enjoys eating it (**Figure 9**). Understanding these perceptions provides insights into drivers or barriers of food choice.

### List of sentinel unhealthy foods

1. Instant noodles
2. Chips
3. Biscuits and baked sweets (e.g., cakes and cookies, mithai)
4. Deep fried foods (e.g., samosa, pakora)
5. Soft drinks/packaged juices
6. Tea/coffee with sugar

### Figure 7. Where households purchase unhealthy foods (6 sentinel unhealthy foods), among households that purchase unhealthy foods
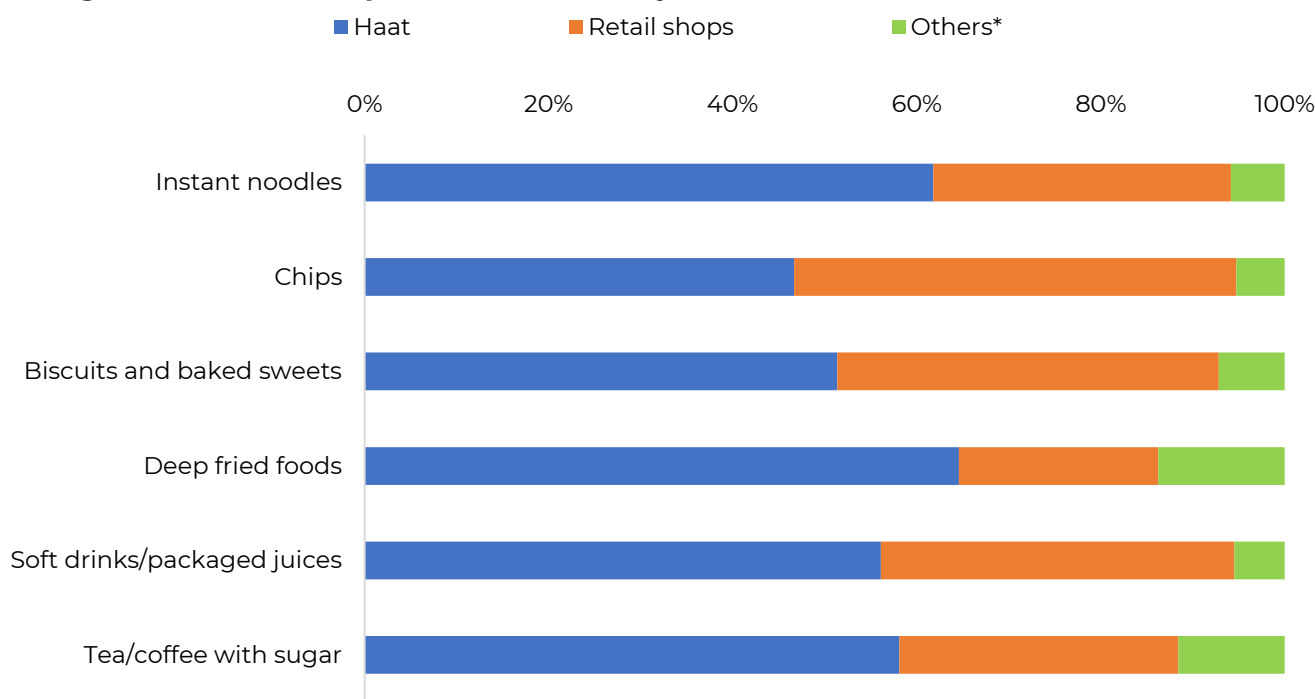


"Others" includes weekly market, city market, mobile vendor, and road market. Haats are wholesale markets where foods are sold in bulk directly by manufacturers/ farmers/ artisans at a fair price, in permanent or semi-permanent infrastructure. Retail shops means fixed or mobile individual shops where foods are sold directly to the consumers and include local grocery stores, specialized shops, vegetable/fruit shops, restaurants, and tea stalls.

### FINDINGS

✓ Among households that purchased instant noodles and deep fried foods, more than 60% households purchased these from haats.

✓ Half of households that purchased chips purchased them from retail shops.

## *Unhealthy food purchases*

Chips, biscuits, and baked sweets were commonly purchased at retail shops

Photo credit: Samuel Scott

**Figure 8. Frequency of consumption of unhealthy foods in previous 7 days (6 sentinel unhealthy foods)**
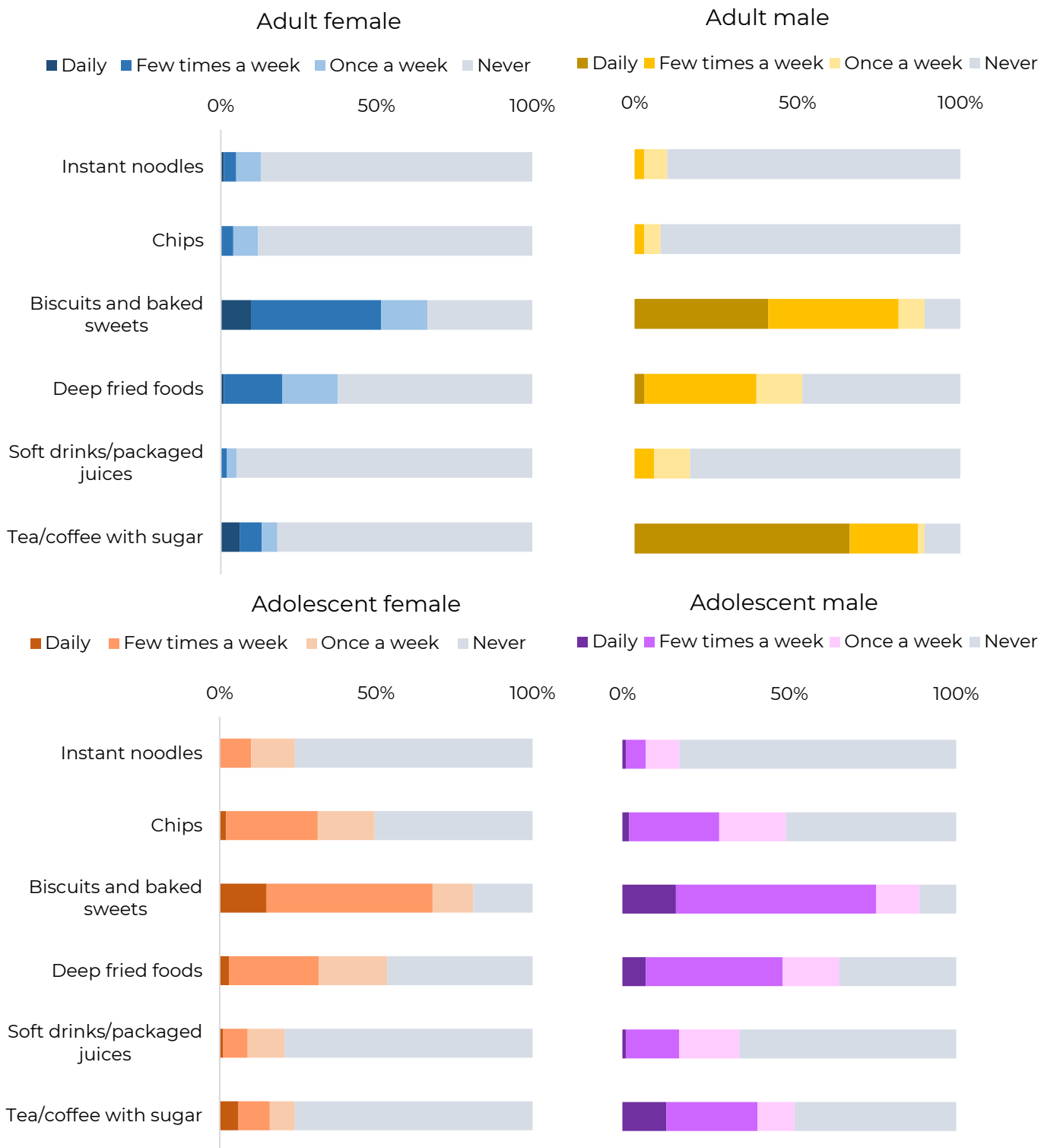


**FINDINGS**

✓ Most male adults consumed tea/coffee with sugar, with around 66% consuming it every day.
✓ Most adolescents consumed biscuits and baked sweets, with more than 50% consuming these foods multiple times a week.

**Figure 9. Perceptions about biscuits and fried foods (% who agree with each statement)**

| Statement | Group | Biscuits | Deep fried foods |
|---|---|---|---|
| Know of shop that sells | Adult female | 88 | 62 |
| | Adult male | 100 | 97 |
| | Adolescent female | 89 | 74 |
| | Adolescent male | 98 | 92 |
| Safe to eat | Adult female | 62 | 12 |
| | Adult male | 77 | 15 |
| | Adolescent female | 68 | 11 |
| | Adolescent male | 69 | 13 |
| Easy to acquire | Adult female | 88 | 64 |
| | Adult male | 94 | 80 |
| | Adolescent female | 89 | 70 |
| | Adolescent male | 91 | 74 |
| Affordable | Adult female | 81 | 74 |
| | Adult male | 81 | 66 |
| | Adolescent female | 87 | 79 |
| | Adolescent male | 85 | 78 |
| Easy to prepare | Adult female | 75 | 59 |
| | Adult male | 85 | 68 |
| | Adolescent female | 71 | 60 |
| | Adolescent male | 73 | 62 |
| Tastes good | Adult female | 78 | 65 |
| | Adult male | 92 | 57 |
| | Adolescent female | 84 | 81 |
| | Adolescent male | 86 | 79 |
| Fills stomach | Adult female | 60 | 46 |
| | Adult male | 58 | 36 |
| | Adolescent female | 69 | 55 |
| | Adolescent male | 68 | 54 |
| Nutritious | Adult female | 59 | 11 |
| | Adult male | 70 | 16 |
| | Adolescent female | 60 | 13 |
| | Adolescent male | 61 | 12 |
| Family enjoys | Adult female | 87 | 72 |
| | Adult male | 89 | 58 |
| | Adolescent female | 86 | 73 |
| | Adolescent male | 85 | 69 |

**FINDINGS**

✓ Around 60% and 65% of respondents considered biscuits to be nutritious and safe., respectively.

✓ Nearly all male adults and adolescents knew of a shop that sells biscuits.

✓ Biscuits were considered easier to acquire, affordable, tastier, and were preferred for family enjoyment by all respondents compared with deep fried foods.

✓ Deep fried foods were considered more affordable and tastier by adolescents than by adults.

## Figure 10. Percent who saw/heard any advertisement for unhealthy foods in the past 30 days



- Adult female: 32
- Adult male: 60
- Adolescent female: 44
- Adolescent male: 52
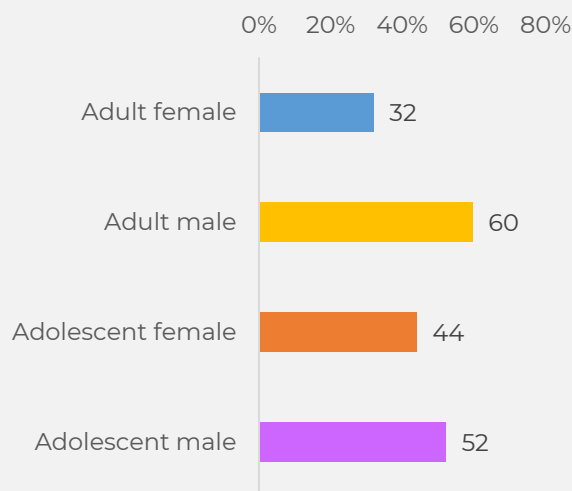
**FINDINGS**

✓ Male adults and adolescents were more exposed to advertisements for unhealthy foods compared to their female counterparts.

✓ Among advertisements for unhealthy foods, soft drink advertisements were the most frequently encountered, followed by fried foods and baked sweets.

✓ Compared to adult females, adult males were exposed to 3 times more salty packaged snacks advertisements and 2 times more advertisements for soft drinks and candies, chocolate and ice-creams.

✓ Adolescent females were exposed to twice as many advertisements for sweetened juice and candies, chocolates, and ice-cream compared with adult females.

## Figure 11. Percent who saw/heard any advertisement for different unhealthy food or packaged drinks in the past 30 days
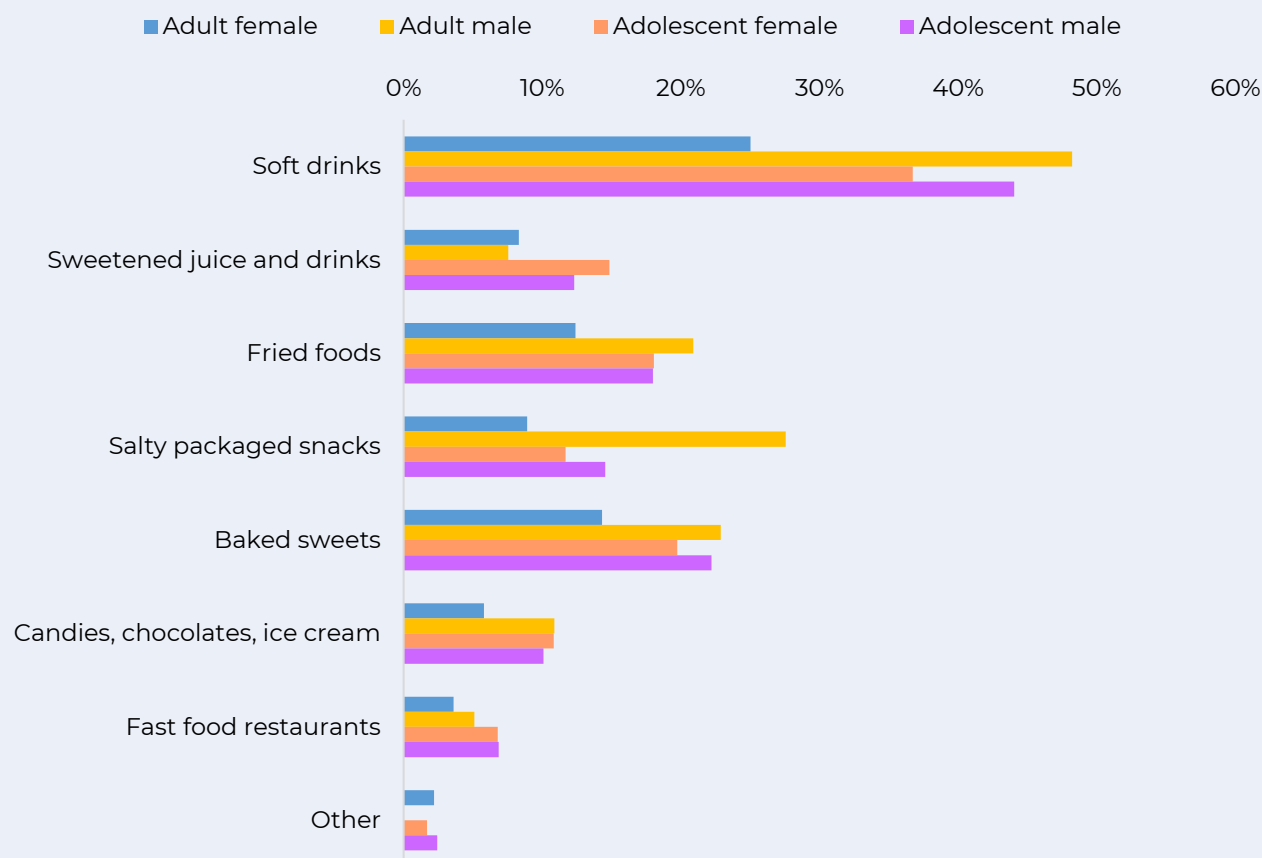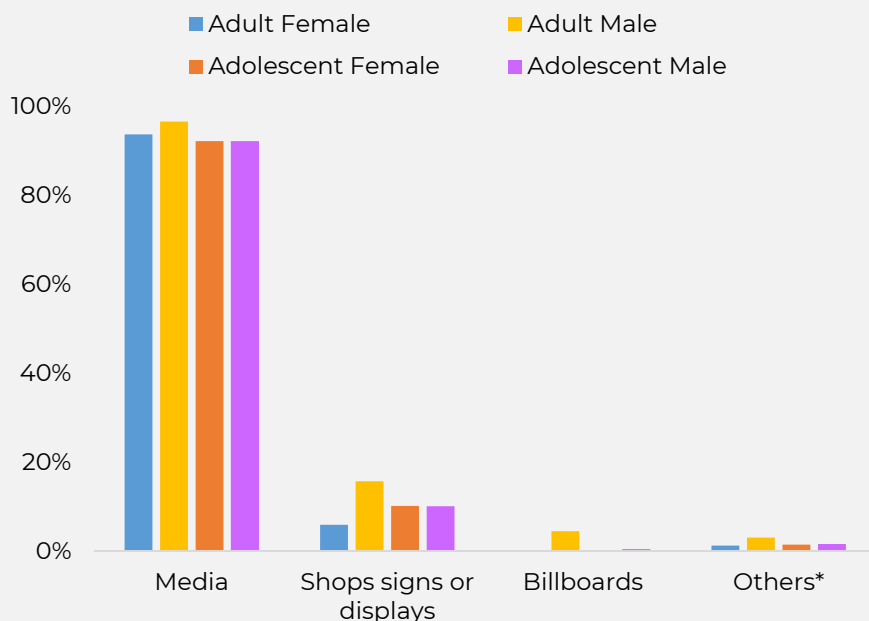
# *Advertisements for unhealthy foods*

More than 40% of adolescents saw or heard food advertisements in the last month
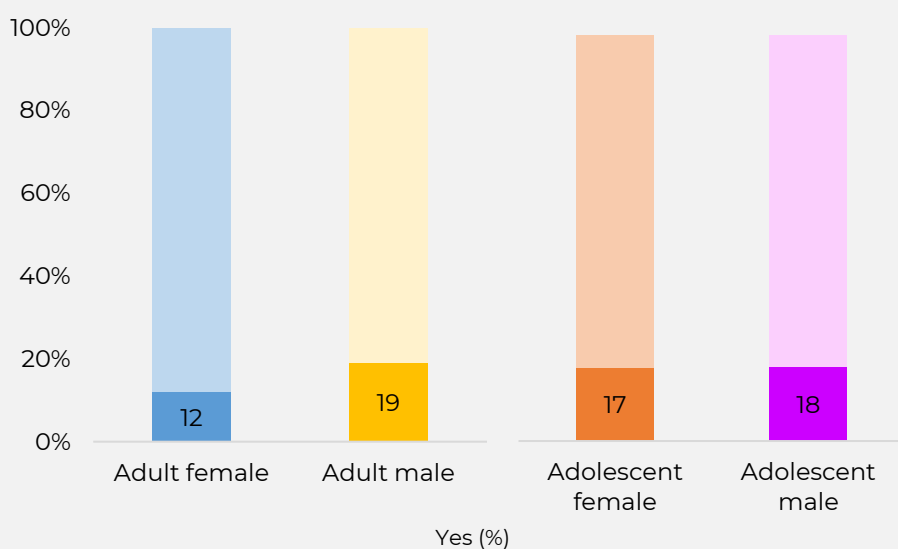
Photo credit: Shawn Sebastian

**Figure 12. Sources of advertisements for unhealthy foods or packaged drinks (among those who saw/ heard advertisements in the past 30 days)**



"*Others" includes signs on back of trucks, printed on walls, etc.

**Figure 13. Percent who saw/heard any information about avoiding unhealthy foods in the past 30 days**



Yes (%)

## FINDINGS

✓ More than 90% of both adults and adolescents were exposed to advertisements for unhealthy foods through mass media channels such as television, radio, newspapers, posters, and social media.

✓ Adult females reported receiving the least information (12%) on avoiding unhealthy foods, while adult males reported the highest (19%) in past 30 days.

✓ 18% adolescent females saw/heard information on avoiding unhealthy foods, which is nearly 1.5 times higher than adult females.

## KEY TAKEAWAYS

1.  Notable patterns of unhealthy food consumption among adults and adolescents:

    •   Male adults and adolescents consumed more unhealthy foods than females. Sweets and ice-cream were the most consumed unhealthy foods per day for all.

    •   Consumption of unhealthy foods was higher during pre-breakfast, mid-morning, and afternoon mealtimes for all.  Of adult males, 45% consumed unhealthy foods in the afternoon.

    •   Biscuits and baked sweets, soft drinks, and tea/coffee with sugar consumption was higher among males, whereas females consumed more chips in last 7 days.

2.  Among households that purchased unhealthy foods, more than 60% households purchased instant noodles and deep fried foods and more than 50% households purchased soft drinks/packaged juices and tea/coffee with sugar from haats.

3.  Around 60% of respondents considered biscuits to be safe to eat and nutritious.

4.  Approximately 60% adult males reported having exposure to advertisements for unhealthy foods which was around 2 times more than adult females. Soft drink advertisements were the most common.

5.  Mass media channels were the source of more than 90% of unhealthy food advertisements.

6.  Less than 20% of respondents received information on avoiding unhealthy foods. Adult females received the least information (12%).

## KEY QUESTIONS FOR ACTION

1.  What are the key barriers to reducing unhealthy food consumption among adults and adolescents in the district?

2.  What are a few potential solutions to overcome these barriers? What is needed from decision-makers and from program teams to implement these solutions?

3.  How do adults' and adolescents' experienced food environments impact their demand for unhealthy foods in the district?

4.  How can understanding of interpersonal (e.g., identity, motivation) and socio-cultural (e.g., values) drivers of unhealthy food choices help inform strategies to influence consumption of these foods?

# SURVEY METHODOLOGY

## Village and household sampling

We selected 25 villages in the district with a probability proportional to the number of households that reside in each village. Within each village, we conducted a household listing to identify eligible households, that is those with adolescents (10-19 years old). From the households with adolescents, we randomly invited 20 households to participate in the survey. If a household refused, we replaced that household with another randomly selected eligible household, to retain a total of 1,000 households in the district. Thus, the findings reported in this data note are representative of rural households from this district that include an adolescent.

## Respondent selection

Within households, one adult female aged 20+ years, one adult male aged 20+ years, and one adolescent aged 10-19 years were selected as the respondents for the survey. When multiple adolescents were living in a household, the oldest adolescent was selected. In some households, an adult male was not available (often due to migration for work). In such households, the female was the only adult respondent (See Table 1 for respondent sample sizes). At the beginning of the interview, the adult in the household primarily involved in agriculture (either male or female) and the adult primarily responsible for food purchasing (either male or female) were identified as the primary respondents.



Photo credit: Shawn Sebastian

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## ABOUT TAFSSA

TAFSSA (Transforming Agrifood Systems in South Asia) is a CGIAR Regional Integrated Initiative that supports actions improving equitable access to sustainable healthy diets, that boosts farmers' livelihoods and resilience, and that conserves land, air, and water resources in a climate crisis.

## ABOUT CGIAR

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