Unhealthy foods in Banke, Nepal
Consumption, perceptions, and exposure to advertisements

Data Note 41 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 March-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.

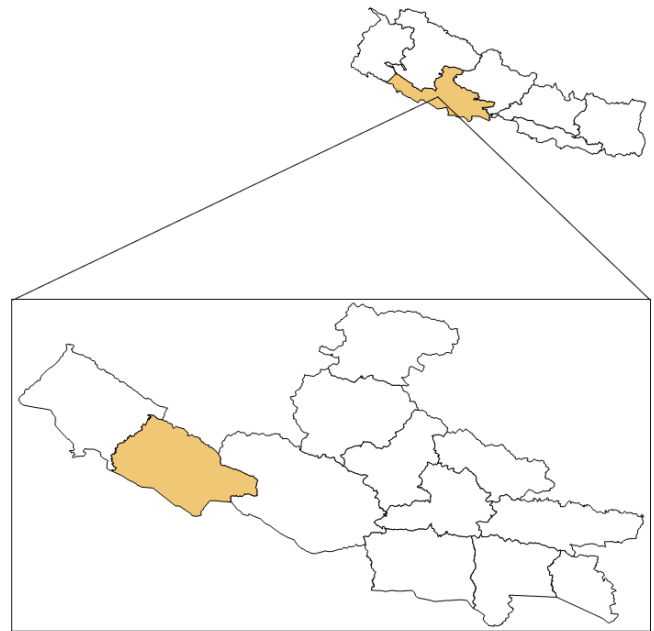**Figure 1. District location within Nepal**

Figure 2. Highlights from this data note

>43%
Male adolescents consumed sweets and ice cream in previous 24h

~90%
Adults and adolescents considered instant noodles easy to acquire and prepare

~25%
Female adults consumed unhealthy foods during breakfast

>80%
Households purchased instant noodles and chips from retail shops

2
Times higher exposure to ads for soft drinks 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.

List of figures and tables in this data note

Table 1. Household and individual characteristics

Household characteristics		Individual characteristics				
			Adult female	Adult male	Adolescent female	Adolescent male
Number	500	Number	500	232	258	242
Female-headed, %	39	Age, yrs. mean (range)	37 (20-79)	46 (21-78)	15 (10-19)	15 (10-19)
Education of head, yrs, mean	5	Currently in school, %	-	-	86	88
Involved in agriculture, %	95	Education, yrs. mean (range)	4 (0-17.5)	5 (0-17.5)	7 (0-11.5)	7 (0-11.5)
Has improved toilet[1], %	94	Married, %	95	97	5	2
		Employed, %	32	68	1	9
Drinking water source		Primary occupation				
		Unpaid household work, %	42	2	13	2
Tube well or borehole, %	77	Farming, %	43	36	1	5
		Casual non-farm labor (paid), %	4	22	0	5
Piped into yard or plot, %	6	Student, %	0	0	86	86

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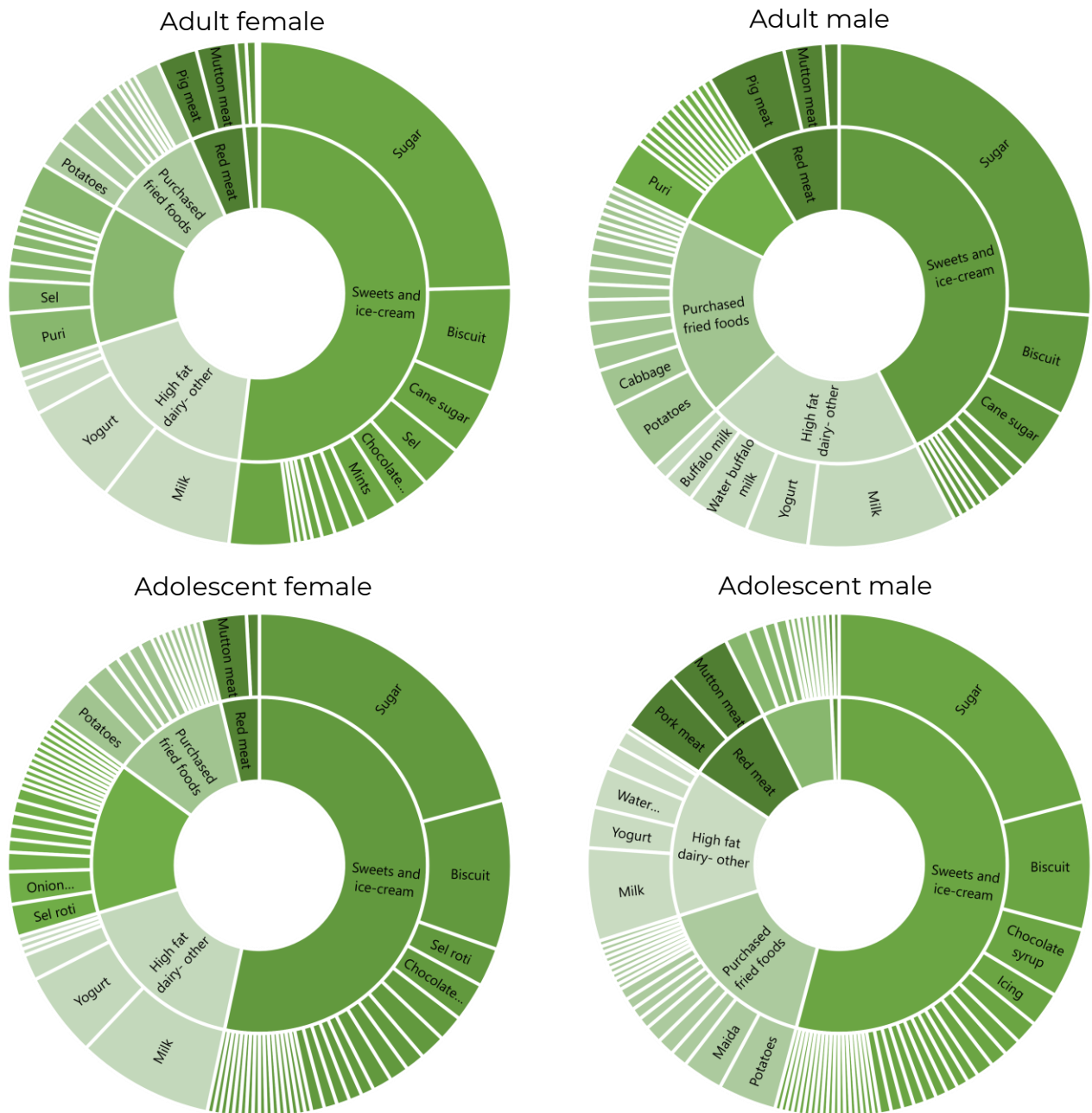
Figure 3. Consumption of unhealthy food groups on previous day (GDQS unhealthy food groups)

FINDINGS

✓ Around 44% of male adolescents consumed sweets and ice cream, nearly 1.5 times more than male adults.

✓ Female adults and adolescents consumed more sugar-sweetened beverages and fried foods at home than their male counterparts.

✓ Male adolescents consumed 1.5 times more sugar-sweetened beverages than male adults.

✓ Male adults and adolescents consumed more than 1.5 times of purchased fried food than their female counterparts.

✓ Compared to female adolescents, male adolescents consumed 2.5 times more red meat.

Note: [1]High-fat dairy and red meat are considered unhealthy when consumed in high quantities.
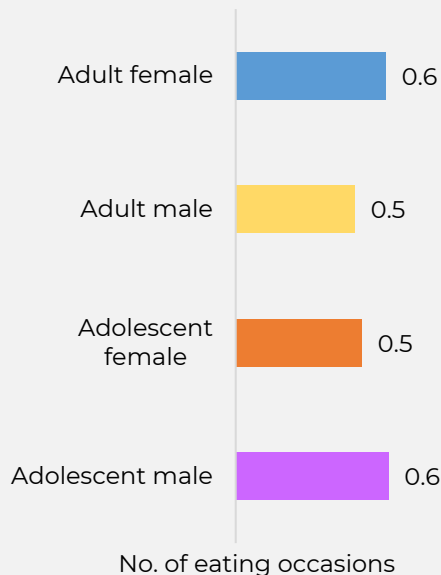
Figure 4. Foods and beverages consumed by GDQS unhealthy food group

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 all respondents except for adult males. Sugar, biscuits, and cane sugar 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	0.6
Adult male	0.5
Adolescent female	0.5
Adolescent male	0.6

No. of eating occasions

FINDINGS

✓ Unhealthy foods were consumed less than once per day on average.

✓ Unhealthy foods were mostly consumed during breakfast followed by afternoon and dinner among all respondents.

✓ Both female adults and adolescents consumed more unhealthy foods during breakfast compared to their male counterparts.

✓ Compared to female adolescents, male adolescents consumed more unhealthy foods at lunch and in the afternoon, and 1.5 times more at dinner.

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

■ Adult female   ■ Adult male   ■ Adolescent female   ■ Adolescent male
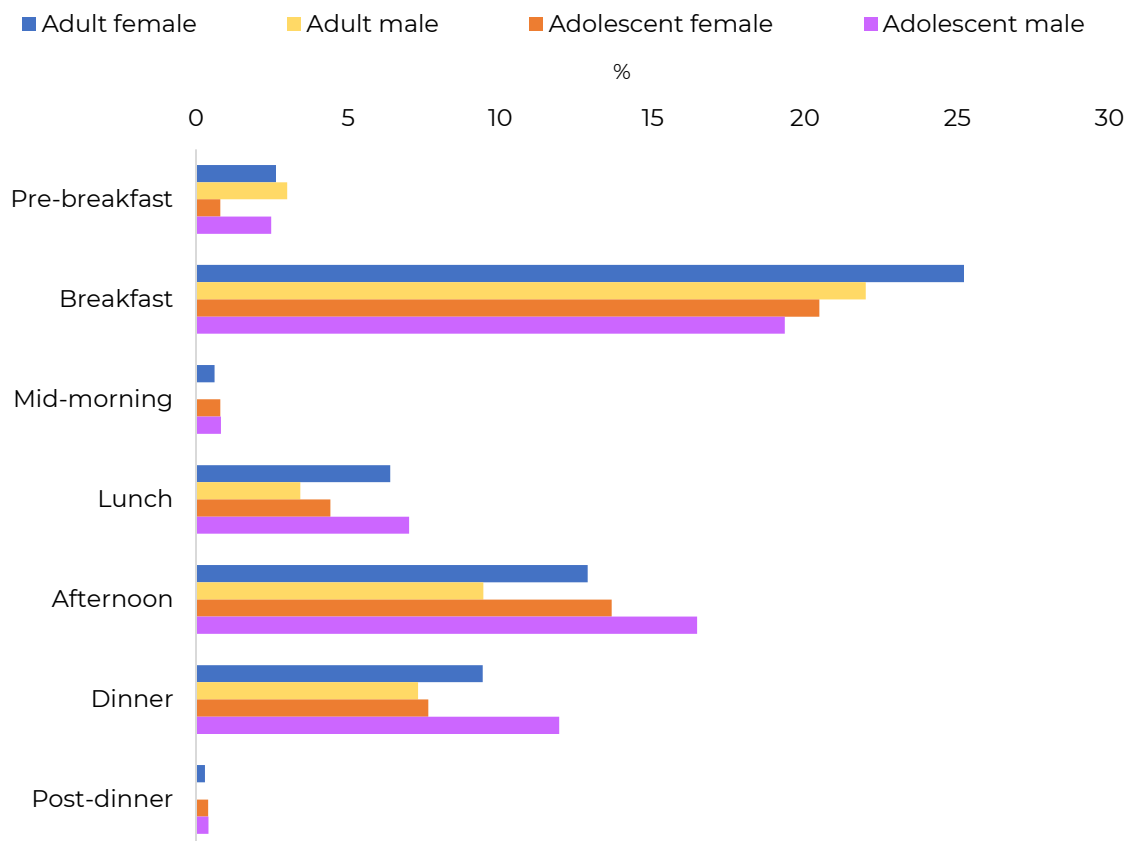
SENTINEL UNHEALTHY FOODS | In addition to the GDQS, which provided information about all unhealthy foods consumed in the previous 24 hours, we selected a set of 6 "sentinel unhealthy foods" (see box on right) to better understand how frequently these common examples of unhealthy foods are consumed, where 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 three most-consumed unhealthy foods (biscuits, fried foods, and instant noodles), 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
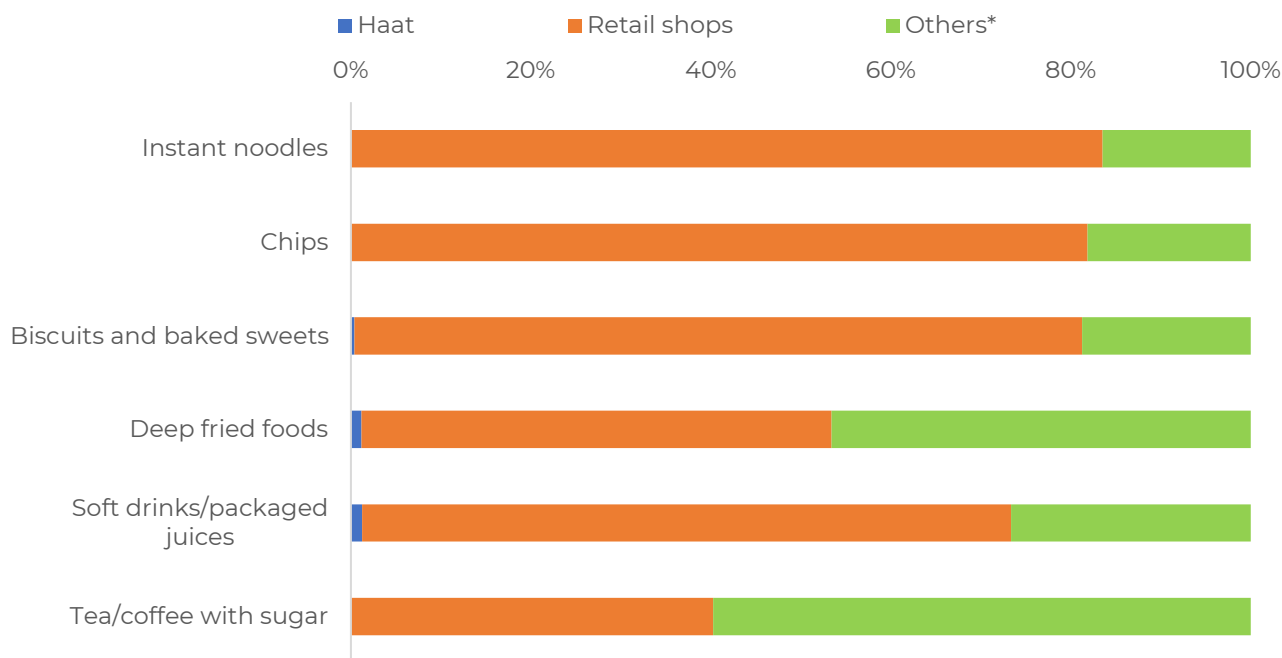
"Others" includes weekly market, city market, mobile vendor, and road market. Haats are wholesale markets where foods are sold in bulk directly by manufacturers/ farmers/ artisans at a fair price, in permanent or semi-permanent infrastructure. Retail shops means fixed or mobile individual shops where 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, chips, biscuits and baked sweets, more than 80% of households purchased these foods from retail shops.

✓ Deep fried foods and tea/coffee with sugar were commonly purchased from other sources such as weekly markets, city markets, mobile vendors, and road markets.

Unhealthy food purchases

Among households that purchased unhealthy foods, more than 80% purchased instant noodles, chips, biscuits, and baked sweets at retail shops

Photo credit: Timothy J Krupnik

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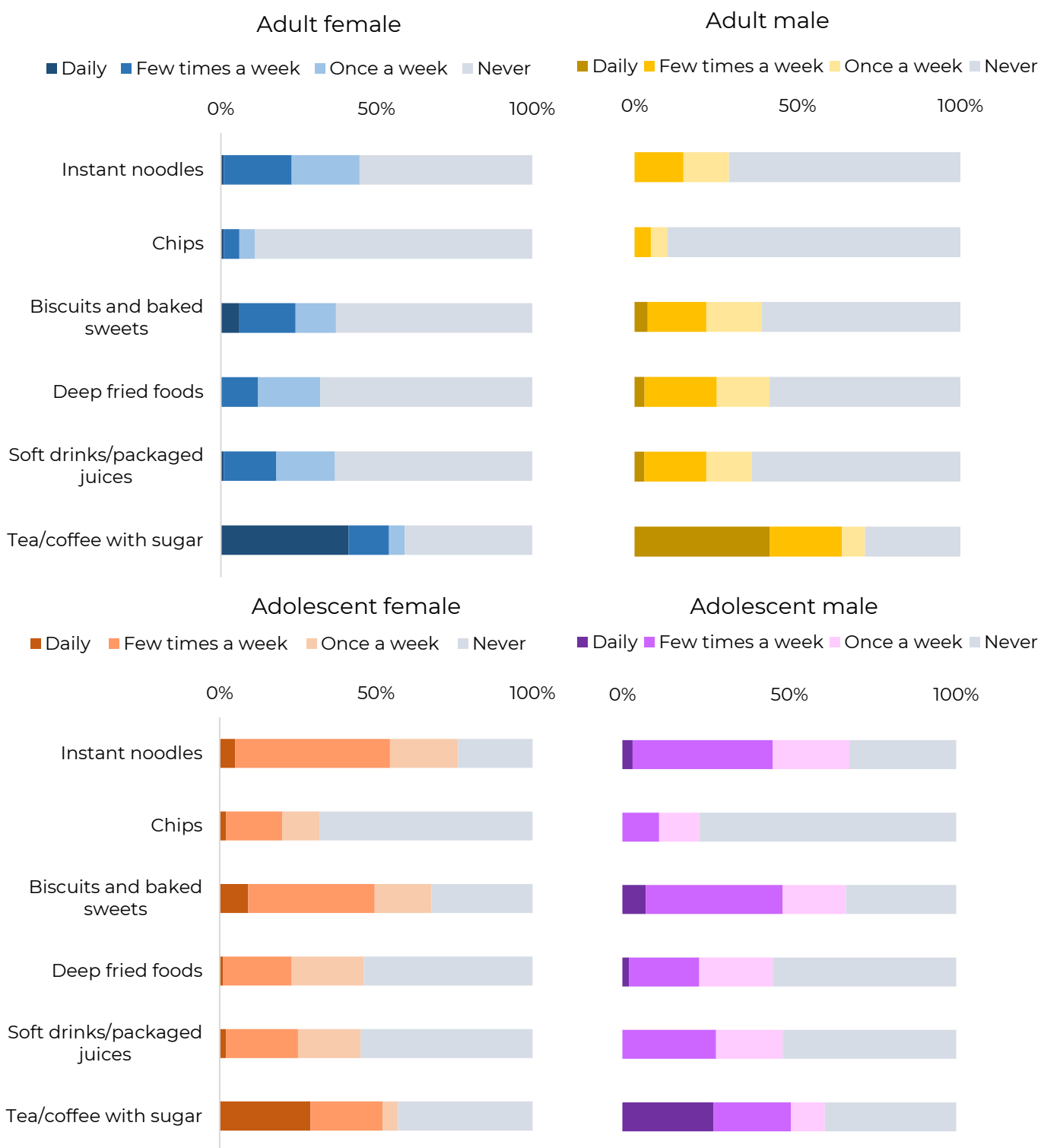
FINDINGS

✓ Around 41% of adults consumed tea/coffee with sugar every day.
✓ Most adolescents consumed instant noodles and biscuits and baked sweets, with more than 40% consuming these foods multiple times a week.

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

100%

0%

		Biscuits	Deep fried foods	Instant noodles
Know of shop that sells	Adult female	99	96	99
	Adult male	100	95	100
	Adolescent female	100	98	100
	Adolescent male	100	96	100
Safe to eat	Adult female	43	37	32
	Adult male	46	25	27
	Adolescent female	46	40	29
	Adolescent male	44	39	22
Easy to acquire	Adult female	99	76	97
	Adult male	98	74	97
	Adolescent female	97	80	96
	Adolescent male	96	79	98
Affordable	Adult female	56	25	39
	Adult male	64	25	53
	Adolescent female	73	33	59
	Adolescent male	77	46	70
Easy to prepare	Adult female	96	64	96
	Adult male	91	74	89
	Adolescent female	91	68	93
	Adolescent male	90	70	89
Tastes good	Adult female	63	76	69
	Adult male	66	64	53
	Adolescent female	80	87	92
	Adolescent male	72	84	77
Fills stomach	Adult female	44	64	59
	Adult male	34	52	41
	Adolescent female	51	75	71
	Adolescent male	45	72	62
Nutritious	Adult female	44	37	32
	Adult male	40	28	23
	Adolescent female	47	45	35
	Adolescent male	42	38	25
Family enjoys	Adult female	78	87	85
	Adult male	72	71	68
	Adolescent female	69	81	67
	Adolescent male	59	78	60

FINDINGS

✓ Around 90% of respondents considered instant noodles and biscuits to be easy to acquire and prepare.
✓ Nearly all the respondents knew a shop that sells instant noodles, biscuits and deep fried foods.
✓ Deep fried foods were considered tastier and stomach filling and were preferred for family enjoyment by adolescents compared to instant noodles and biscuits.
✓ Biscuits were considered more nutritious, affordable, and safer to eat by all respondents.

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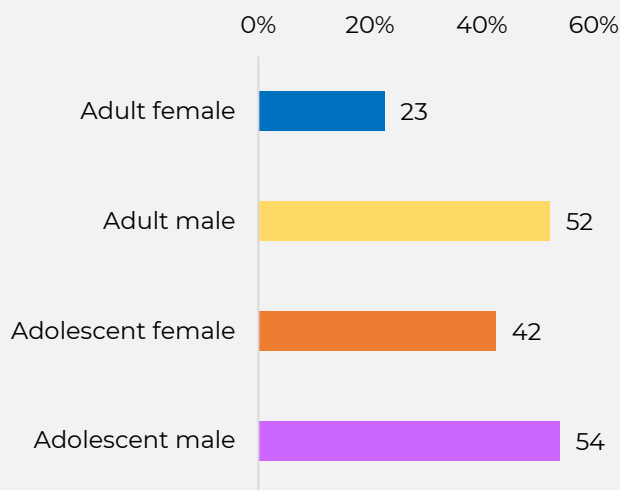
FINDINGS

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

✓ Adult males were twice more exposed to advertisements for unhealthy foods than adult females.

✓ Among advertisements for unhealthy foods, soft drink advertisements were the most frequently encountered.

✓ Compared to adult females, adult males were 2 times and 5 times more exposed to soft drinks and fried food advertisements, respectively.

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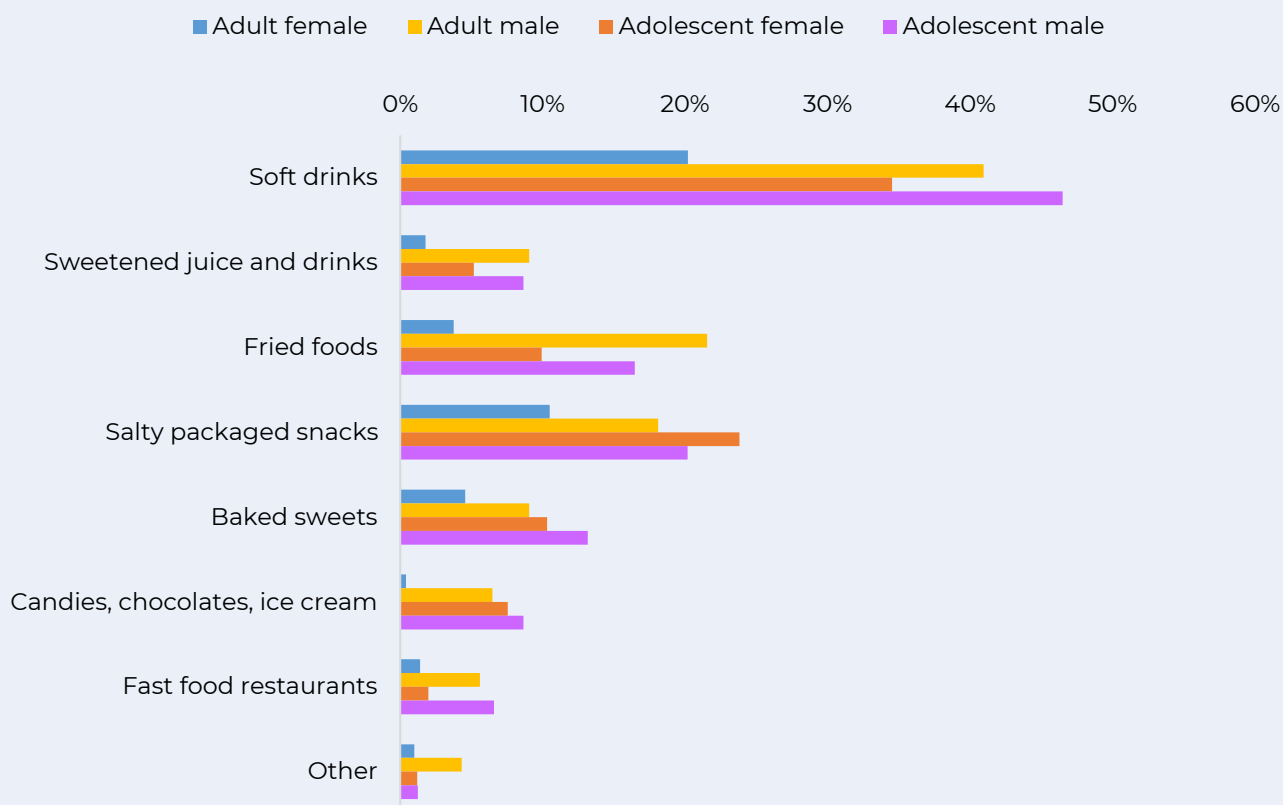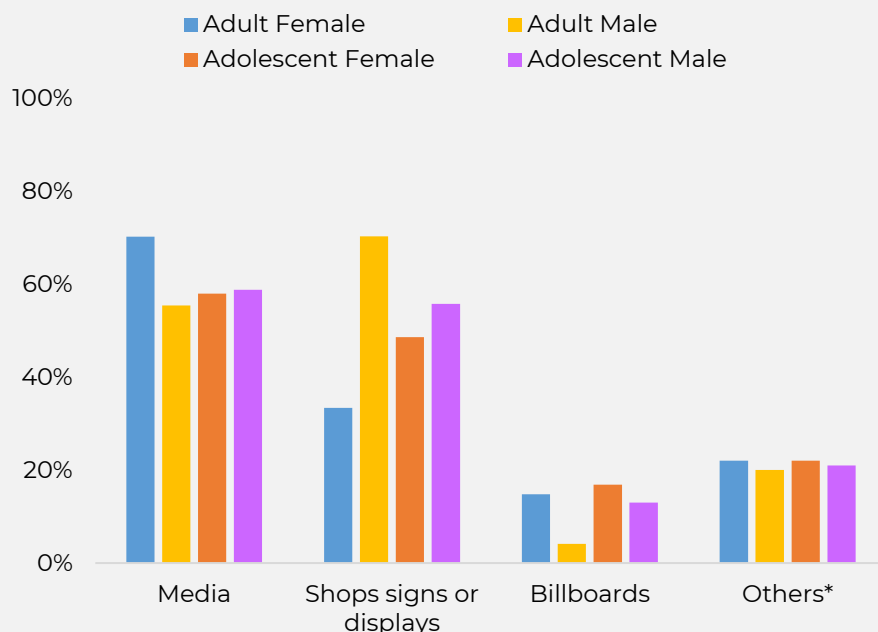
Advertisements for unhealthy foods

More than 50% of male adults and male adolescents saw or heard food advertisements in the last month

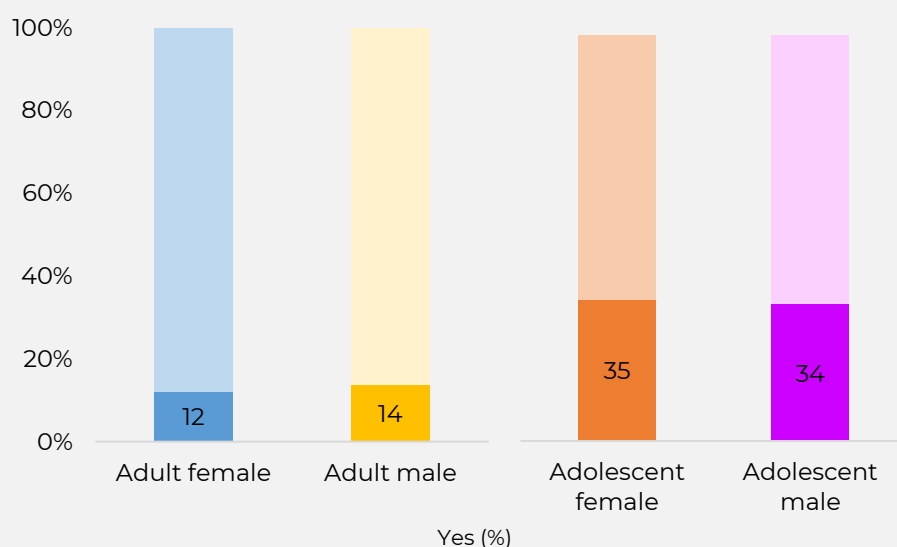Photo credit: Abdul Momin

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

FINDINGS

✓ Mass media channels such as television, radio, newspapers, posters, and social media; and shop signs and displays were the most common sources of advertisements.

✓ 70% of adult males noticed unhealthy food advertisements on shop signs or displays, which was 2 times more than adult females.

✓ Compared with adults, more adolescents reported receiving information on avoiding unhealthy foods.

✓ Adolescent females saw/heard information on avoiding unhealthy foods nearly 3 times more than adult females.

✓ Adult females reported the least information (12%) on avoiding unhealthy foods in past 30 days.

KEY TAKEAWAYS

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

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

    •   Consumption was higher during breakfast, afternoon, and dinner mealtimes for all. Around 25% of female adults consumed unhealthy foods during breakfast.

    •   Tea/coffee with sugar consumption frequency was higher, especially everyday, among adults compared to adolescents. More adolescents consumed instant noodles, biscuits and baked sweets in last 7 day compared to adults.

2. Among households that purchased unhealthy foods, more than 80% of households purchased instant noodles, chips, biscuits, and baked sweets at retail shops.

3. Around 90% of respondents considered instant noodles and biscuits to be easy to acquire and prepare.

4. Male adults and adolescents were more exposed to advertisements compared to their female counterparts. Soft drink advertisements were the most common.

5. Mass media channels were the source of 70% and 60% unhealthy food advertisements for female adults and all adolescents, respectively. Around 70% adult males reported exposure to advertisements on shop signs or displays.

6. Less than 15% of adults received information on avoiding unhealthy foods. Adolescents received around 3 times more information than adults.

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 wards in the district with a probability proportional to the number of households that reside in each ward. Within each ward, 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 500 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: Purnima Menon

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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.

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