

Unhealthy foods in Nalanda, India

*Consumption, perceptions, and
exposure to advertisements*

Data Note 40

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 India

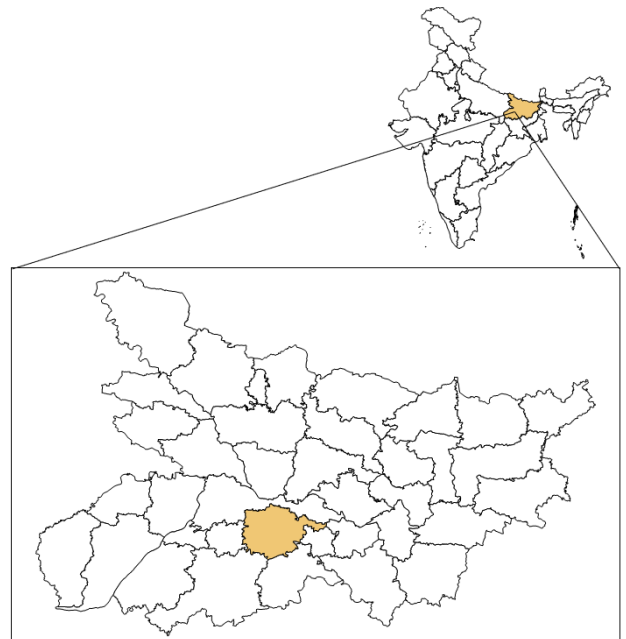


Figure 2. Highlights from this data note



~50%

Adults and adolescents consumed sweets and ice cream in previous 24h



>50%

Adults and adolescents considered biscuits as nutritious and safe



30%

Male adults consumed unhealthy foods during pre-breakfast



>70%

Households purchased instant noodles and chips from retail shops



>1.5

Times higher exposure to ads for unhealthy foods among adolescents than 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.

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Table 1. Household and individual characteristics

Household characteristics		Individual characteristics				
			Adult female	Adult male	Adolescent female	Adolescent male
Number	1000	Number	1033	652	566	431
Female-headed, %	27	Age, yrs. mean (range)	39 (20-75)	47 (21-82)	15 (10-19)	14 (10-19)
Education of head, yrs, mean	5	Currently in school, %	-	-	83	83
Involved in agriculture, %	82	Education, yrs. mean (range)	3 (0-17.5)	6 (0-17.5)	7 (0-17.5)	7 (0-11.5)
Has improved toilet ¹ , %	41	Married, %	93	96	6	1
		Employed, %	41	97	2	9
Drinking water source		Primary occupation				
		Unpaid household work, %	59	0	12	0
Piped into dwelling, %	39	Farming, %	20	55	0	3
		Casual non-farm labor (paid), %	1	21	1	4
Tube well or borehole, %	36	Student, %	0	0	85	89

¹Improved 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.

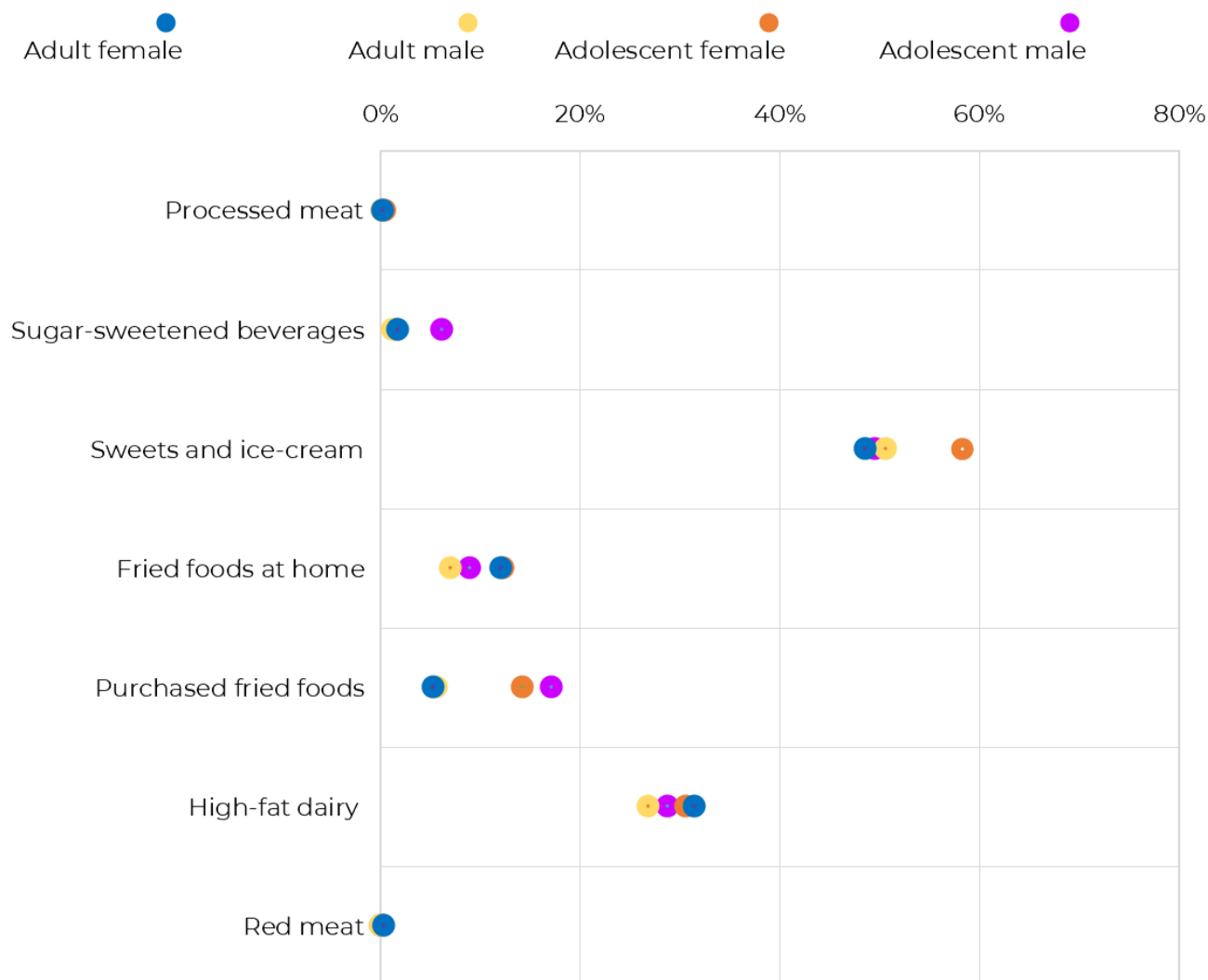
Among the 9 GDQS unhealthy food groups (7 unhealthy food groups plus red meat and high-fat dairy, which are unhealthy when consumed in excess), we have excluded two – refined grains and baked goods, and white roots and tubers. These were excluded because the consumption rate for white roots and tubers approached nearly 100% among all survey respondents, and white roots and tubers and refined grains and baked goods 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 dairy²
7. Red meat²

²Bromage 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

- ✓ Adolescent females consumed highest (58%) sweets and ice-cream on previous day followed by adult males (50%).
- ✓ Adolescent males consumed sugar-sweetened beverages more than 4 times than other respondents.
- ✓ Adolescent males and females consumed higher fried foods at home and purchased fried foods compared to their adult counterparts.
- ✓ Adolescent males and females consumed around 3 times more purchased fried foods compared to adult males and females, respectively.
- ✓ Female adults and adolescents consumed more fried foods at home and high-fat dairy than male adults and adolescents.

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

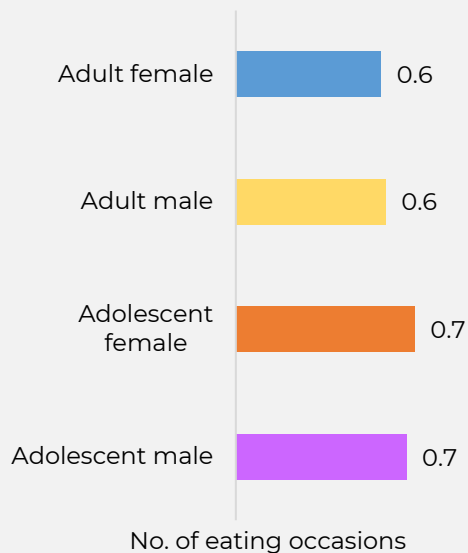
Figure 4. Foods and beverages consumed by GDQS unhealthy food groups

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

- ✓ Around 50% of total unhealthy foods consumed were sweets and ice creams for all respondents. Sugar, biscuits, and cookies were the most common items.
- ✓ Within the purchased fried foods group, the specific foods consumed differed across respondent types.

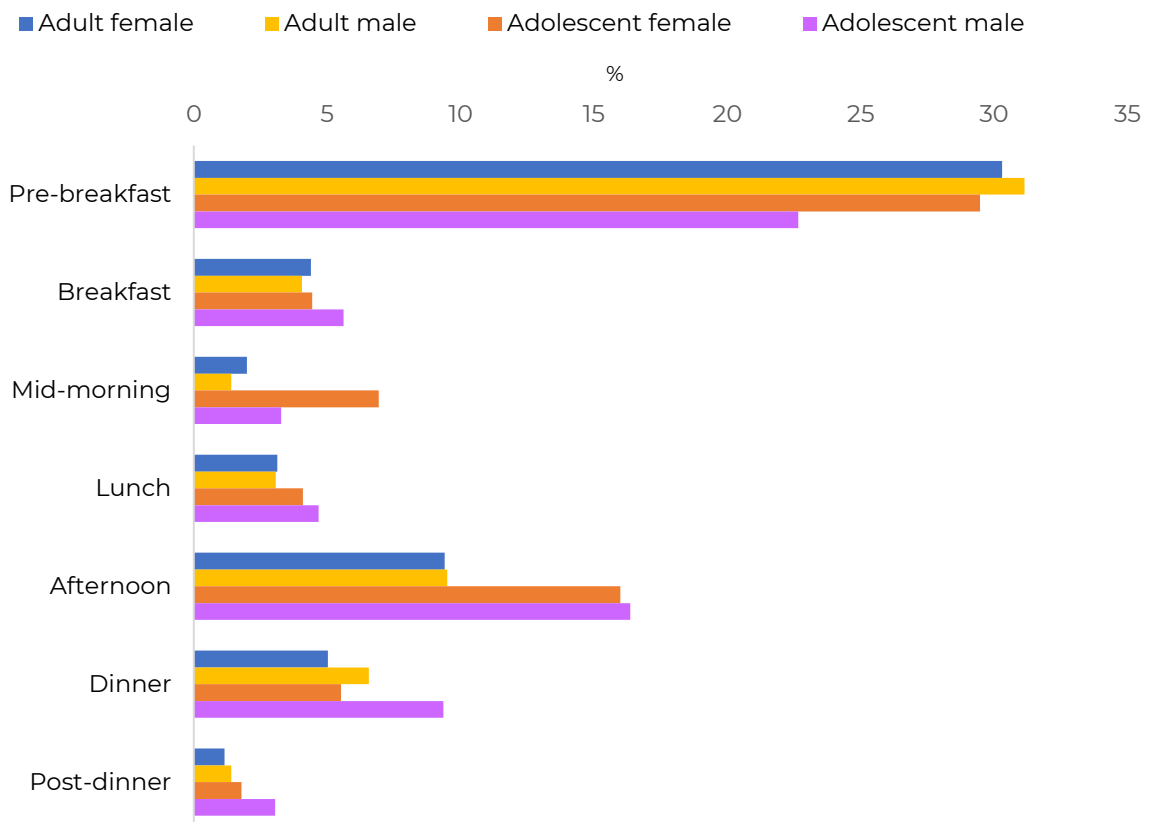
Figure 5. Mean number of eating occasions when unhealthy foods were eaten on previous day



FINDINGS

- ✓ Unhealthy foods were consumed less than once per day on average.
- ✓ Around 30% of male adults, female adults, and female adolescents consumed unhealthy foods before breakfast.
- ✓ Female adolescents consumed 3 times more unhealthy foods during mid-morning than female adults in a single day.
- ✓ Adolescents consumed 1.5 times more unhealthy foods in the afternoon compared to adults.

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



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.

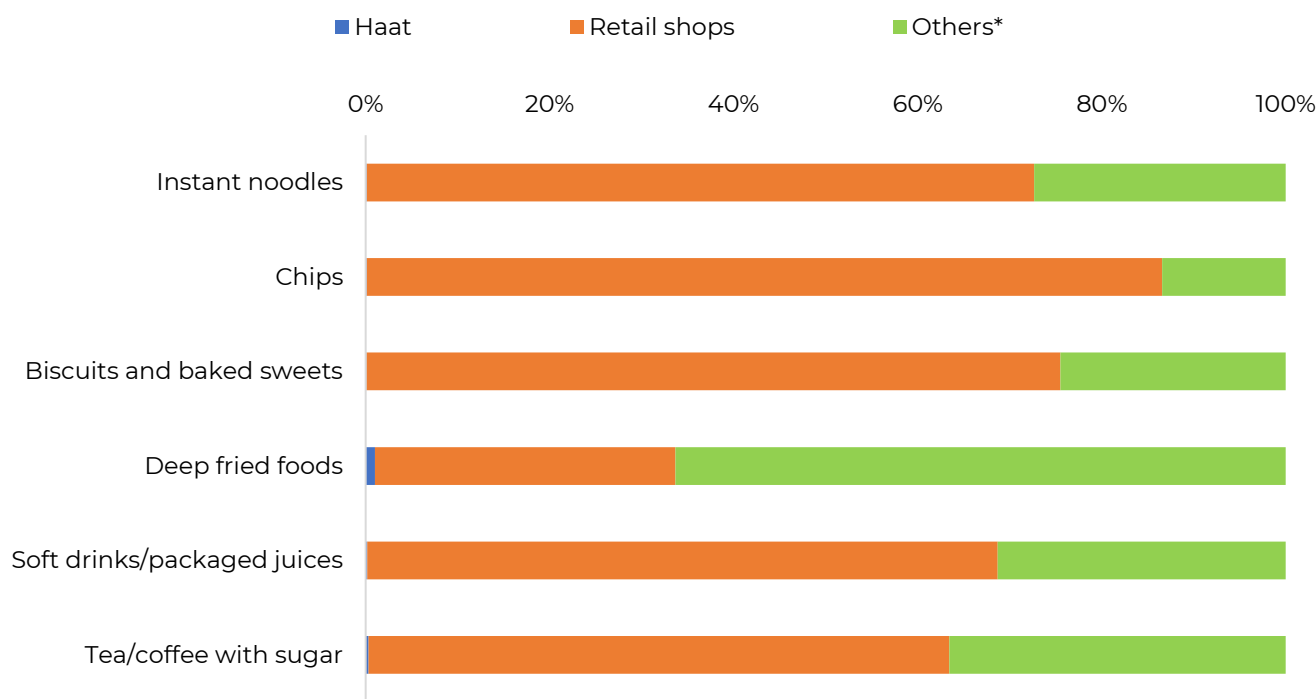
Respondents were asked about where they purchased these unhealthy foods (haat, retail shop, or other sources) (**Figure 7**) and how frequently they consumed these foods in the past 7 days (**Figure 8**).

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/packageaged 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

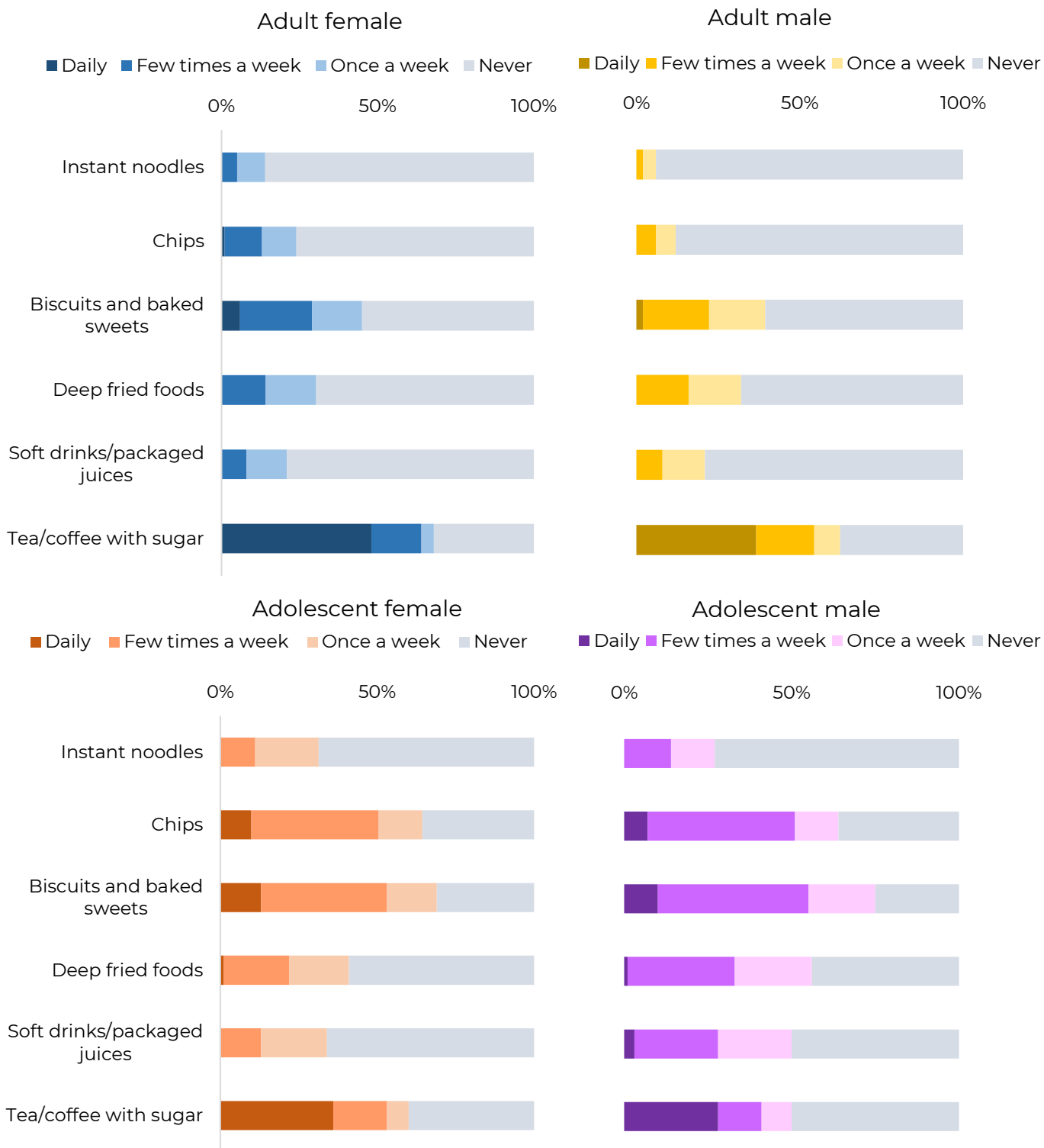
- ✓ Among households that purchased instant noodles, chips, biscuits and baked sweets, more than 70% households purchased these foods from retail shops.
- ✓ Households purchased deep fried foods mostly from other sources such as weekly markets, city markets, mobile vendors, and road markets.



Unhealthy food purchases

More than 70% of households purchased instant noodles, chips, biscuits and baked sweets at retail shops

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



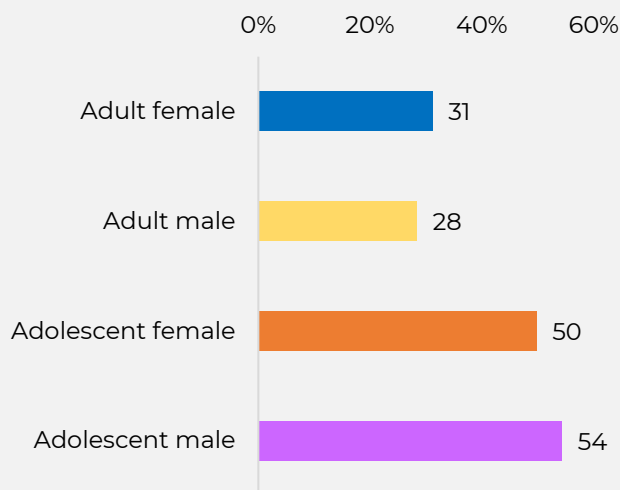
FINDINGS

- ✓ Most adults consumed tea/coffee with sugar, with more than 37% consuming it every day.
- ✓ Most adolescents consumed chips, biscuits and baked sweets, with more than 40% consuming these foods multiple times a week.

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

- ✓ More than 50% of respondents considered biscuits to be nutritious and safe to eat.
- ✓ More than 80% of respondents knew of a shop that sells biscuits and deep fried foods.
- ✓ Biscuits were considered more affordable, nutritious and easier to acquire by all respondents compared to deep fried foods.
- ✓ Biscuits were considered more affordable and stomach filling by adolescents than by adults.

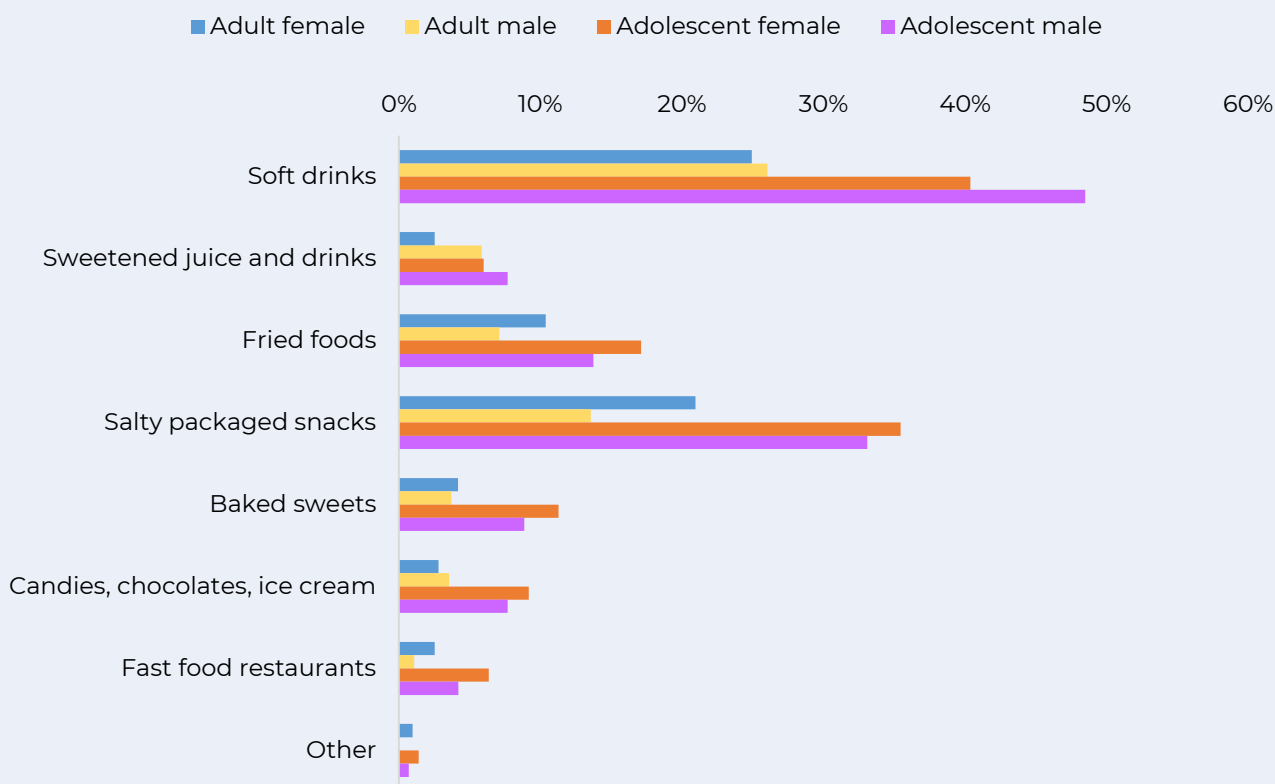
Figure 10. Percent who saw/heard any advertisement for unhealthy foods in the past 30 days



FINDINGS

- ✓ Adolescents were around 1.5 to 2 times more exposed to advertisements for unhealthy foods than adults.
- ✓ Among advertisements for unhealthy foods, soft drink advertisements were the most frequently encountered, followed by salty packaged snacks.
- ✓ Compared to female adults, female adolescents were 1.5 to 3 times more exposed to advertisements for soft drinks; fried foods; salty packaged snacks; candies, chocolate, and ice creams; and baked sweets.
- ✓ Compared to male adults, male adolescents were exposed 2 times more to advertisements for fried foods, salty packaged snacks, and baked sweets.

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

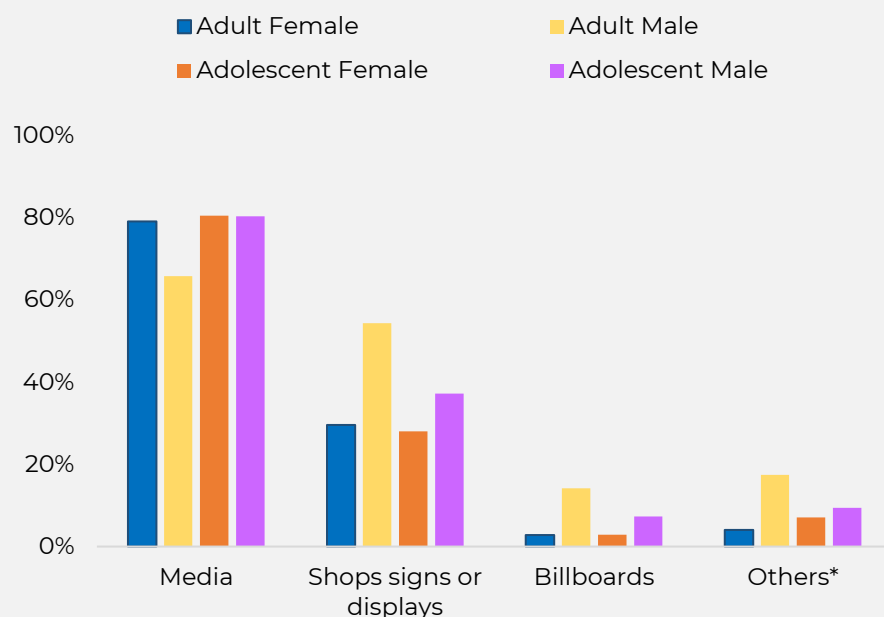


Advertisements for unhealthy foods

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

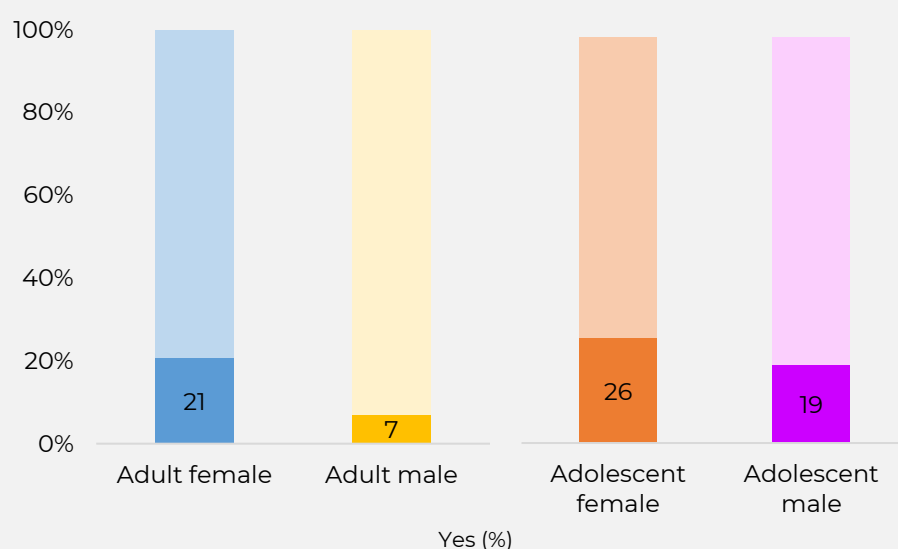


Figure 12. Sources of advertisements for unhealthy foods or packaged drinks (among those who saw/ heard advertisements in the past 30 days)



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

- ✓ Around 80% of adolescents and male adults were exposed to advertisements for unhealthy foods through mass media channels such as television, radio, newspapers, posters, and social media.
- ✓ 54% of male adults reported exposure to unhealthy food advertisements on shop signs or displays, which was 1.5 times more than other respondents.
- ✓ Compared to adults, more adolescents reported receiving information on avoiding unhealthy foods.
- ✓ Male adults reported the least information (7%) on avoiding unhealthy foods in past 30 days.

KEY TAKEAWAYS

1. Notable patterns of unhealthy food consumption among adults and adolescents:
 - Adolescents consumed more unhealthy foods than adults. Sweets and ice-cream were the most consumed unhealthy foods per day for all.
 - Consumption was higher during pre-breakfast and afternoon mealtimes for all. Around 30% of male adults, female adults, and female adolescents consumed unhealthy foods before breakfast
 - More adolescents consumed chips, biscuits and baked sweets, soft drinks, and fried foods than adults in last 7 days, whereas adults consumed tea/coffee with sugar more frequently compared to adolescents.
2. Among households that purchased unhealthy foods, around 70% households purchased noodles, chips, biscuits, and baked sweets from retail shops.
3. More than 50% of respondents considered biscuits to be safe to eat and nutritious.
4. Adolescents reported 1.5 to 2 times more exposure to advertisements for unhealthy foods compared to adults. Soft drink advertisements were the most common.
5. Mass media channels were the source of more than 65% of unhealthy food advertisements for all.
6. Less than 30% of respondents received information on avoiding unhealthy foods. Adult males received the least information (7%).

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.



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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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