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FOOD CONSUMPTION PATTERNS OF HETEROGENEOUS ADULTS FROM NON-SPECIFIC LOCATIONS IN THREE EAST AFRICAN CITIES: A QUALITATIVE COMPARATIVE STUDY

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ABSTRACT

This qualitative study explores consumption patterns and food preferences across three East African cities through focus group discussions involving 70 adult men and women. The study reveals commonalities in food sources and staple foods among participants in Kampala, Nairobi, and Dar es Salaam. While most foods prepared at home were sourced from local markets, street vendors, and general shops, supermarkets played a significant role in introducing new processed and nutritious products. The rise in supermarket usage in East African cities has been associated with contemporary health issues such as obesity, prompting concerns about food quality from other sources like street vendors and traditional markets. Participants across the cities showed a preference for energy-dense staple foods like rice, *Ugali*, cassava, and beans, often accompanied by meat, vegetables, or fish. Differences in staple foods and eating preferences were observed, with Kampala offering a wider variety of options compared to Nairobi and Dar es Salaam. The consumption of meat and meat products was influenced by participants' income levels, with affordability playing a significant role in food choices. Street foods emerged as a common feature in all three cities, with unique offerings like Chips Mayai in Dar es Salaam, Kikomando and Rolex in Kampala, and Mutura in Nairobi. Participants' food choices were influenced by factors such as affordability, accessibility, taste preferences, and cultural norms. The study also highlighted the importance of urban agriculture in some households, emphasizing self-sustainability in food production. Overall, the study provides insights into the diverse food consumption trends and patterns in East African urban settings, shedding light on the role of different food sources, staple foods, and street foods in shaping dietary practices among residents. Further research is needed to explore the impact of these consumption patterns on health outcomes and to develop strategies for promoting healthy eating habits in urban populations.

Key words: Consumption patterns, meal frequency, fruits, vegetables, food preference, East Africa



INTRODUCTION

A remarkable change in food consumption and nutrition transition is happening in developing countries. The convenience of obtaining nutritious and affordable food can prominently influence the frequency of chronic disease and other serious distinct health outcomes in a community [1]. For instance, inadequate access to healthy and affordable food may unfavourably impact dietary intake and ultimately cause nutrition related negative health outcomes such as obesity, diabetes, and cardiovascular diseases [2]. Research and policy recommendations in developing countries have customarily been concentrated on the problem of food insecurity and undernutrition in rural areas. However, the increasing consciousness that developing countries are now progressively suffering from the “triple burden of malnutrition”, permits adding research and policy focus in urban areas. This is supported by the fact that the prevalence of overweight seems to be higher and rising more rapidly in urban areas [3]. The transition to an urbanised life is usually accompanied by rapid changes in diet, levels of physical activity and chronic disease rates.

According to the United Nations (UN) [4], by the year 2050, approximately 70% of the world population will live in cities, up from around 50% today (2024). The UN has identified sustainable cities and communities as one of its Sustainable Development Goals (SDGs). To avail water, food and energy security to cities is a main challenging encounter especially in developing countries [5].

As sub-Saharan Africa is presently in the midst of an unparalleled trend of urbanization, it is important to attain a profound understanding of how people interrelate with urban food environments. It is anticipated that more than 60% of Africa’s population is anticipated to be living in urban areas by 2050 [4]. It is, therefore, important to appropriately forecast food demand and develop the right policies for agriculture, trade and improving food and nutrition security.

As chronic diseases such as diabetes and cardiovascular diseases can well be averted through proper diet and physical activity, it is crucial to understand how traditional dietary and lifestyle habits and trends are, to be able to develop operative disease prevention and health promotion interventions [6].

In this study, we address food consumption habits and patterns of adults in the major East African cities of Dar es Salaam, Nairobi and Kampala, in order to explain the mechanisms through which urban settlements affect food consumption.

METHODS

Sample selection

Sampling was done by purposive approach because the depth of information obtained is more important than selecting a strictly representative sample [7]. As explained by Patton [8], certain efforts were made to deliberately choose individuals who reflected the range of possible characteristics displayed by members of the study population. Also, an attempt was made to choose a range of key individuals from the population that represented some of the important subgroups of the population, as well as individuals who were influential at various stages of the food system. The focus group discussions (FGDs) were separated according to sex, in order to keep them as homogeneous as possible so that all participants were made to feel that they could contribute honestly and were not intimidated by the other sex group members [7].

Sample size

Sample size in this study was dependent on the researchers continuing with data collection until there was enough information to answer the research questions, or until no more new information was being extracted (that is: the data have been 'saturated' or information obtained seems repetitive) [9]. Nine FGDs were conducted which included 6 to 10 participants in each and lasted 1 to 3 hours. A total of 70 participants took part in the FGDs (Table 2).

Data collection

A descriptive study design was used to examine the food consumption patterns of adults. Qualitative data were obtained through FGDs which were conducted across three major East African cities, that is Dar es Salaam, Nairobi, and Kampala. Focus groups are group discussions intended to absorb a subject's perception on a distinct area of attention. Like individual interviews, focus groups allow to gain access to, and understand people's activities and perceptions that cannot be directly observed [7,11].

The aim and purpose of the research were explained in every focus group meeting. A total of three organizing teams were used to complete the task, with one team assigned to each city. Organizing teams consisted of a facilitator and a note taker. The mode in which an FGD is directed is crucial, and the following steps were followed in the facilitation of the FGDs for this study. The facilitator started by informing the participants that the researchers were attentive in asking some questions about eating practices. When beginning with the research questions, the facilitator commenced with modest, easy questions and then went on to more complex questions [7]. Participants were not

made to feel as though they should know the answers. Throughout the progression, the facilitator re-phrased questions, or asked them again in an altered manner when they were not understood properly. An effort was made to permit participants to agree or disagree with each other so as to allow for a variety of views and thoughts to be uttered on beliefs, knowledge and practices surrounding food consumption [7]. The facilitator tried to set the tone of the FGDs to permit participants to speak openly and honestly without fear of disapproval or judgement.

The organizers of FGDs were provided with guidelines to facilitate the organization of the discussion. The Guidelines included a list of focus group questions for participants. Table 1 indicates the interview questions.

Notes were taken along with audio recordings. Audio recordings were later transcribed to obtain transcripts which were used in the analysis. Margin coding was used to analyze and organize the information collected from FGDs.

Data analysis

All focus group discussions were audio recorded and transcribed *verbatim*. The data analysis followed a content analysis approach which involved examining the data for common themes, and these themes were grouped into units of meaning (or groups of similar information). Qualitative data from the focus group discussions were analyzed by considering the themes, contents and concepts acquired from the topics and questions discussed as supporting information about the study [10]. Prior to analysis, transcripts were read multiple times to gain a consensus of participants' experience of food consumption. The coding process was done by identifying words, sentences and paragraphs that were related to the research question. The process was repeated for all transcripts, whereby similar codes were merged together to form sub-themes.

A quality check was carried out on the transcribed data of the focus groups by a research assistant to make sure that the information was transcribed correctly without losing the intended meaning. The hand-written notes taken during the focus group discussions were used to complement the transcribed information.

Ethical considerations

Letters of permission to carry out the research were obtained from the Sokoine University of Agriculture (SUA). The participants were given details on the study protocol. Verbal informed consent was obtained from each participant prior to the focus group discussion after explaining the purpose of the study. Ethical clearance was

obtained from the Tanzania National Institute for Medical Research (NIMR/HQ/R.8a/Vol.IX/2226).

RESULTS AND DISCUSSION

Participants

A total of 70 adult men and women participated in the study (Table 2).

Food sources

There were some similarities in the sources of foods that are consumed across all three cities. Most foods prepared at home were either purchased from local/regional open markets (for example, Owino and Nakasero markets in Kampala; Mabibo, Tandika and Tandale markets in Dar es Salaam) or small-scale mobile/stationary vendors around the neighborhoods which go by different names in each city but denotes the same type of business setup, detailed as *magenge* in Dar es Salaam and *vibandas* in Nairobi.

General shops sprawled across the streets were also mentioned to be useful for the daily requirements of various food items in all three cities. This pattern is similar to that of Okello [12] that reported more households shop at local markets and street vendors. In all the three cities, it was reported that the residents have a wide range of options when they shop for food. It is also observed that where households decide to shop depends upon the food item, and what it is being purchased for. Some participants from the three cities mentioned that they purchased food from supermarkets. Common items purchased at supermarkets in East Africa include fresh produce, packaged foods, dairy products, beverages, snacks, and household essentials. Supermarkets are reported to play an important role in introducing new processed foods or nutritious products, including exotic and out-of-season fruits and vegetables [13]. Reasons given for purchasing from different types of markets include convenience, variety and choice, quality and freshness and promotions.

The rise in supermarket usage in East African cities has been linked to contemporary health issues such as obesity [14]. However, some critics highlight concerns regarding other food sources like local markets and street vendors. Research suggests that food sold by street vendors often lacks quality, which raises health concerns. Despite this, street vendors continue to thrive as they offer affordable and easily accessible meals, catering to the needs of urban populations. The study also identified additional food purchase areas such as traditional markets and informal food outlets, indicating that supermarkets and street vendors are not the sole sources of food in these urban settings [15].

There was a significant number of participants that consumed food away from their homes, especially in Nairobi and Kampala. A wide variety of eat-out options were mentioned across the cities depending on the level of income, accessibility, and lifestyle. In Nairobi, for example, eat-out options like in restaurants, from food peddlers, and at 'vibandas' were mentioned. "Vibandas" refers to small, informal food stalls or kiosks typically found in densely populated areas such as residential neighborhoods, near markets, or along busy streets. These make-shift eateries are often made from simple materials such as wood or metal sheets. They offer affordable and quick meals, usually targeting low to middle-income earners, including workers and students.

Wealthier people would eat from restaurants, whilst less wealthy ones would opt for 'vibandas' or food peddlers. It was also mentioned that 'vibandas' and food peddlers are more accessible to most city workers than restaurants and also allow clients to eat on credit as they tend to establish a rapport with the owners.

In Kampala, a wide range of food supply services were revealed. From 'toninyira' (small shack restaurants and food vendors that set up their business during specific times in the day) to mobile 'nsenene' (grasshopper) vendors carrying their merchandise on their heads. Low-income earners would eat from 'bufundas' (a simple restaurant setting where one can get an affordable meal). In short, the group emphasized that there was a very wide range one could choose from basing on their taste, income and preference as one participant asserted: "We're spoilt for choices of restaurants". Globally, studies have shown a rise in the consumption of food away from home for numerous reasons [16, 17, 18]. Different reasons are pointed out as influencers of consumption of food away from home, such as food demand [19], preference of consumption [20, 21], household expenditure capacity [20, 22], attitudes [20], and effect on health and control of weight [14].

In Dar es Salaam, 'mama ntilie' (women selling food at temporary stations across the streets) and 'migahawa' (simple restaurant setting) were mentioned to be common eat-out options available in their areas though most participants, especially women, did not seem to be interested in eating away from their homes.

There was a small fraction of participants who seemed to grow their own food in Dar es Salaam and Kampala. Other studies also reported urban households growing their own food, some through home gardens. In Zambia, for example, over half of dwellers in Lusaka practice urban agriculture to grow their own food [23]. In other cities, such as Kampala and Yaounde in Cameroon, numerous urban households raise livestock including poultry, dairy cattle, and pigs in the cities and urban areas [24, 25].

Food preference

There was a similarity in the staple foods that were consumed across all three cities in East Africa. Most participants seemed to prefer energy dense foods as their staple. Rice, *Ugali/posho* (corn meal porridge), cassava, and beans were consumed as the main staple across all three cities. These staple foods are normally consumed along with a side of meat, green leafy vegetables, fish or beans. Kampala seemed to have a larger variety of staple foods than Nairobi and Dar es salaam. In Kampala, it is not uncommon for people to consume other energy- dense foods like '*matooke*' (cooked green bananas), yams, sweet potatoes, and Irish potatoes. '*Katogo*' is a very common dish served in restaurants and at home that comprises of a mixture of foods for example cassava and beans, or '*matooke*' and beans. In Nairobi, besides rice and ugali, other staple foods that were mentioned were *Githeri* (beans and maize cooked together), '*Mokimo*' (traditional food commonly made from boiled maize, pumpkin leaves, and mashed Irish potatoes). In Dar es Salaam, along with the common staples such as rice and *ugali*, '*makande*' (a mixture of polished dry maize and beans) was another food type that was mentioned to be consumed as a staple by some participants. Baked goods like *samosa*, *chapati*, and *mandazi* (fried bread) were mentioned to be eaten across all three cities, especially for breakfast and dinner. Other studies also support the behaviour of high consumption of energy-dense staples in urban areas and the positive impact of urban dwelling on staple consumption [26, 27].

A common theme about the consumption of meat and meat products arose. Participants across all the three cities assert that their income levels do not allow them to consume meat on a daily basis. For example, in Dar es Salaam and Kampala, female participants explained that meat prices are always spiraling, forcing them to turn to cheaper alternatives like beans and sardines. In Kampala, most participants, especially men, mentioned that they like to consume '*kigere*' (boiled cow hooves) or '*mulokoni*' (boiled cow legs) especially for dinner or breakfast because it is cheaper than ordinary beef and has a peculiar taste. Pork, goat meat and chicken meat were all mentioned to be consumed but mostly on special occasions.

Fish was mentioned to be a food type that was preferred in Dar es Salaam and Kampala. Nairobi participants on the contrary did not seem to be interested in fish whatsoever, as some participants explained "We do not trust Nairobi fish since we do not know the source". Others claimed that they did not like the smell of fish. Due to high prices of fish in Dar es salaam, most participants explained that they can only afford to eat fish once in a while, most of them resort to sardines due to affordability.

Fruits and vegetables were consumed in all three cities. All participants from the three cities had a general consensus that fruits are fairly expensive, and thus, they cannot incorporate them in their daily meals. They only consume fruits as a luxury or when they have some extra funds, which is not often. Some participants from Kampala were wary of the origin, quality and hygiene level of fruits that are being sold in the markets, and would rather consume fruits from an origin that they are familiar with. Common fruits that were mentioned by participants from all three cities were watermelon, pineapples, bananas, sugarcane, jackfruits, pawpaw, mangoes, oranges and cucumbers. While Nairobi and Kampala groups affirmed that they take green leafy vegetables as part of their daily routines, Dar es Salaam participants explained that they only take green leafy vegetables because it is the cheapest option.

Street foods appeared to be a common denominator across all three cities. While Chips *mayai* (puffy omelet with French fries mixed in) was mentioned to be famous in the streets of Dar es salaam, 'Kikomando' (mixture of chapati and beans) and 'rolex' (rolled eggs in chapati) filled the streets of Kampala. Chips *mayai* in Dar es Salaam was famous among a younger generation, while 'Kikomando' and 'Rolex' was consumed by anyone who did not feel like taking a heavy meal on that day. In Nairobi, *Mutura* (a common street food made of animal intestines) is mostly consumed by men, often along with beer.

Trends and patterns in food consumption

In both Kampala and Nairobi groups, food choices seemed to be influenced by whether the foods made them feel full for longer periods of time; that did not seem to be much of a trend for the Dar es Salaam group. The difference could be attributed to the nature of the work of the FGD participants selected. The Kampala and Nairobi FGD groups seemed to have comprised younger, single blue-collar workers who performed heavy labour work away from their homes. Due to the physically demanding nature of their blue-collar jobs, and lower incomes, they needed more energy-dense foods that would last them longer. Dar es salaam groups comprised mainly small businessmen and women and older people who did not work away from their homes and whose jobs were not physically demanding. This could explain why they did not seem to be bothered about how long their food choices made them feel full.

Income level was a common theme that appeared across all three cities. All participants from all three cities agreed that their food choices were hugely influenced by their income level. Meal patterns were also affected by their income levels. However, consistent with another past study [28,29], the customary retail food shops continue to

be an important part of the food systems in African cities. Results of the present study indicate that local markets and street hawkers still lead the food retail system in East Africa, and are ideal for lower social economic and educated households. The important role of local food vendors has been definite in East Africa's food retail system.

Participants from Kampala seemed to eat away from their homes more than their Dar es Salaam and Nairobi counterparts. This could be explained by the fact that most of the participants from Kampala were young and unmarried working away from their homes. The groups from Nairobi and Dar es Salaam were more diverse, comprising participants of different age groups and different professions.

Dar es Salaam women group seemed to have been comprised of half stay at home and half working women, while Kampala and Nairobi ones seemed to have been comprised of working women. This seems to have an influence on their meal patterns and where the meals were taken. Ugandan and Kenyan women appeared to eat their lunch away from their homes and would sometimes skip their meals to save money so that they could feed their entire families, while the Dar es Salaam group seemed to consume all their meals at home and most of them would not skip meals.

Across all the three cities, men seemed to eat out more than women. This could be ascribed to the fact that women are the main caregivers, so they have to be at home to prepare meals for the whole family and in doing so, they take most of their meals at home [30]. A discrepancy appeared in Dar es Salaam where most men ate their meals at home due to the fact that they worked in the vicinity of their homes and eating out appeared to be fairly expensive for them. Another discrepancy was seen in the Kampala women group, where most of them were working in the city, so they would mostly eat lunch away from their home; nonetheless, they explained that they take their breakfast and supper at home with their families.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

The study highlights the diversity of food sources and consumption patterns across three major East African cities: Dar es Salaam, Nairobi, and Kampala. A mix of traditional markets, street vendors, small shops, and supermarkets serves as the primary food sources, with variations in preferences driven by factors such as income level, food accessibility, and lifestyle. Despite the growth of supermarkets in the region, local markets and informal vendors continue to dominate the food retail landscape, catering particularly to lower-income households.

Staple foods such as rice, ugali, and beans were consistently favored across the cities, although the types and variety of staple foods differed, especially in Kampala, where energy-dense foods like matooke were also common. The study further underscores the influence of income and work patterns on food choices, with blue-collar workers in Kampala and Nairobi opting for foods that provide sustained energy, while participants in Dar es Salaam leaned more toward home-cooked meals.

The findings reflect broader trends in urbanization and changing food systems in East Africa, where traditional food sources coexist with modern retail outlets, each meeting different socioeconomic needs. As cities continue to grow, understanding these consumption patterns is crucial for policymakers aiming to address nutrition and public health challenges in the region. The study's insights emphasize the importance of considering local contexts when promoting dietary guidelines and food security strategies, particularly in rapidly urbanizing settings.

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Conflict of interest

The authors of this article declare no conflicts of interest



Table 1: Interview Questions

Interview questions
Sources of the foods that are consumed in the city/region. Which foods are preferred for consumption in urban communities?
Probes: Consumption of specific foods (either at a specific meal or for the day as a whole) Meal patterns (how many meals per day) Consumption of energy-dense foods Consumption of fruits and vegetables Reasons for preference of these types of foods.
Probes: price, availability etc.

Table 2: Characteristics of participants in focus groups

Type	Participants (n)	City	Age range (years)	Sex
FGD 1	6	Kampala	28-55	M=3; F=3
FGD 2	8	Kampala	33-49	M=4; F=4
FGD 3	10	Kampala	25-67	M=5; F= 5
FGD 4	7	Nairobi	26-65	M=4; F=3
FGD 5	7	Nairobi	27-62	M=3, F=4
FGD 6	10	Nairobi	25-58	M=5, F=5
FGD 7	6	Dar es Salaam	36-68	M=3; F=3
FGD 8	9	Dar es Salaam	31-70	M=4; F=5
FGD 9	7	Dar es Salaam	39-69	M=4; F=3

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