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Abstract:	Background: Street food has continued to be a more popular food source in urban settings of developing countries and proving a vital urban dietary source. However, its dietary contribution among patronising urban populations is yet to be comprehensively understood. Aim: To assess how street food contributes to dietary intake of habitual street food consumers. Methods: We conducted a community-based cross-sectional study among habitual street food consumers in Kampala city. We defined habitual intake as consumption of a serving of any street food for ≥2days/week regardless of the food group and number of times consumed in a particular day. Questionnaires were used to capture quantitative data on sociodemographic characteristics, anthropometry, 24-hour diet intake and 2-month street food consumption frequency. The Nutritics® diet analysis software version 4.3 and STATA version 13.0 were used for nutrient and statistical analyses respectively. Results: Street food contributed considerably to daily intake of fat (49.1%), sodium (38.4%) and calcium (36.5%) and least towards daily intake of vitamin A (11.3%). Majority of consumers opted for street food at breakfast (50%) whereas lunch and snacks featured the least for overall street food inclusions (all 20%). Overall, men demonstrated more dietary intake and inclusion at meals from street food than women. Conclusion: This study indicates significant contribution of street foods for urban consumers but with men derive more benefit than women in terms of nutrient intake and inclusion in meals from street food.

Contribution of street food to dietary intake of habitual urban consumers: A cross-sectional study in Kampala city, Uganda.

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Results: Street food contributed considerably to daily intake of fat (49.1%), sodium (38.4%) and calcium (36.5%) and least towards daily intake of vitamin A (11.3%). Majority of consumers opted for street food at breakfast (50%) whereas lunch and snacks featured the least for overall street food inclusions (all 20%). Overall, men demonstrated more dietary intake and inclusion at meals from street food than women.

Conclusion: This study indicates significant contribution of street foods for urban consumers but men derive more benefit than women in terms of nutrient intake and inclusion in meals of street foods.

Keywords: street food, diet, meal, urban, Uganda

Introduction

Street food vending has been a feature of urban contexts. It is estimated that 2.5 billion people globally consume them (Cardoso et al., 2014). Street food has gone beyond being considered a signal of deprivation and a phenomenon for developing countries. It has become a key form of nourishment and economic prosperity by offering affordable food and a means of income-generation, especially in low-income countries (Draper, 1996; Tinker, 1997; Cardoso et al., 2014). Given the current rate of urbanisation that is being experienced world over (UNDESA, 2014), street food may continue being an embraced part of the food system. Street food entails ready-to-eat foods and beverages sold and sometimes prepared in public places, such as along urban streets, roadsides, and busy squares (FAO, 1989). In Uganda just like many low-income countries, street food vending has become a very common practice in urban areas, with street-vended foods comprising different kinds of meat, cereals, legumes, fruits, vegetables, roots, tubers and beverages that are prepared and delivered in various forms (Draper, 1996; Tinker, 1997; Namugumya and Muyanja, 2011; Hiamey et al., 2013). The nutritional quality of street-vended foods also varies considerably from one street food group to another and this further generally influences their respective purchase prices (Mwangi et al., 2002). For the majority of urban Ugandans, these foods form an integral part of their diets. Street food is considered relatively inexpensive and a more convenient food option that counters the relatively high costs of living and busy work environments associated with urban settings (Steyn et al., 2011). The patronisation of street food has not only been for reasons of economic affordability and convenience, its appealing taste too has turned out to be an important attracting aspect (Draper, 1996; Steyn et al., 2011). The other is the nutrition value, whose role in addressing urban nutrition security challenges has been well documented (FAO, 1991; Draper, 1996; Tinker, 1997; Steyn et al., 2013). However, nutrition value is still not considered an important aspect for majority of consumers while making street food choices (Hiamey et al., 2013).

The energy and macro-nutrient contribution of street food among consumers has been well reported in various studies, but with variation by location. For instance, from previous research, we find that geographic variations in energy contribution of street food have been identified, ranging from 13 – 36% in East Africa (Namugumya and Muyanja, 2011; Van't Riet et al., 2002) and from 46-48.3% in West Africa (Oguntona et al., 1998; Becquey and Martin-Prevel, 2010). Street foods contributed more energy towards men's diets than women's in studies where such variations were assessed (Van `t Riet et al., 2001). Majority of studies have highlighted that street food contribution towards carbohydrate seems highest, ranging from 54-93.4% (Namugumya and Muyanja, 2011; Oguntona et al., 1998; Becquey and Martin-Prevel, 2010); and between 21.9-52% towards fat. There is still dearth of data in Uganda and Africa regarding the micronutrient contribution of street food especially among habitual consumers, which leaves unknown potential risk for nutrient deficiencies or excesses that may be associated with existing trends of street food choices. Notably, habituality in street food consumption may also hinder consumption of foods from diverse sources, limiting intake of certain nutrients in this particular population segment. Additionally, most of the studies reporting dietary contribution of street food within the region were done more than half a decade ago, yet there has been continuing drastic innovations in street food preparation and trends influencing consumption over the years especially among urbanites. In this study therefore, we set out to analyse the overall diet composition, and nutrient contribution of street food for habitual street food consumers in Kampala city. We also sought to understand gender-related differences in street food consumption and contribution to dietary intake.

Methods

Study setting:

The study was conducted in Kampala, the biggest city and capital of Uganda, with a population of more than 1.5 million people (Uganda Bureau of Statistics, 2014). Data were collected in May and June 2017 from the five administrative city divisions namely, Kampala central, Kawempe, Lubaga, Makindye and Nakawa. Major economic activities in Kampala are employment income and small- and large-scale trading, all of which account for more than 80% of the working population (Uganda Bureau of Statistics, 2002).

Study design and population:

This was a descriptive cross-sectional study that employed quantitative methods of data collection and analysis. The study population were street food consumers aged 18 years and above, residing and or working in the five administrative divisions of Kampala capital city in May and June 2017. Habitual consumption was defined as consumption of a serving of any street food, for two (2) or more days a week regardless of the food group and the number of times consumed in a particular day.

Eligibility

Habitual street food consumers aged 18 years and over who had been residing and /or working within the five city divisions for at least two months prior to the study were included. All individuals who met the inclusion criteria but declined signing the informed consent, were operating at more than one station during daytime, were street food vendors, were having physical, auditory or speech disability were excluded.

Sample size and sampling procedure:

The sample size was calculated using Kish's formula for cross sectional studies (Kish, 1965). Assuming a standard normal value corresponding to the 95% confidence interval, a margin of error of 5%, and an estimated proportion of habitual food consumers of 12.0% (in a rather similar setting of Free town, South Africa) (Steyn et al., 2011) yielded a calculated sample size of 163 respondents.

We purposively identified two major trading centres in each division of Kampala, totalling up to 10 major trading centres. Individuals residing or working within half-mile radius of each selected trading centre meeting the inclusion criteria formed the sampling frame, from which the final sample was randomly selected. Parking stations were used to select riders and taxi operators, residential houses to select individuals at home, business buildings to select traders, and working spaces to select manual labourers. Only individuals who self-reported eating street food at least two days in a typical week on first contact were listed on the sampling frame. The interviews were conducted from space of homes and work places deemed comfortable by participants. All divisions in Kampala contributed an almost equal number of respondents (approximately 32 respondents from each division).

Data collection:

Interviewer-led pretested semi-structured questionnaires were used to collect information from respondents. Two nutritionists, previously trained on the study and data collection tools, led the interviews in supervision of the first author. The questionnaires had been translated into the commonly used language 'Luganda' prior to data collection to ensure that similar questions were asked without alteration in meaning, which consequently reduced on interviewer bias. The questionnaires collected information on sociodemographic characteristics, dietary intake, food consumption frequency, and anthropometric data.

Study Variables and their measurements:

Sociodemographic characteristics of participants that were captured by the interviewer-led questionnaire included; age, marital status, religion, education, socioeconomic status, monthly income.

Weight and height were recorded from which body mass index (BMI) was computed. These were measured using a Seca® scale and a standardised height meter tape respectively with participants in light clothing and shoes off while following steps in the anthropometric procedure manual (CDC National Center for Health Statistics, 2007). The measurements were respectively repeated for each participant and the average taken. The weight was recorded to the nearest 0.1kg while the height was recorded to the nearest 0.1cm. BMI was then computed for each participant in kg/m^2.

Dietary intake was assessed using a single 24-hour diet intake recall questionnaire, which captured data on foods and beverages consumed by the participants in the previous day (between midnight and midnight). To allow for maximum recall and improved accuracy of intake estimates among participants, the 5-step multiple-pass approach (Robertson et al., 2005) and a copy of '*food album*' (supplementary material) were incorporated into the interview procedure. This study specifically focused on assessing dietary intake of the following nutrients: protein, carbohydrates, total fat, saturated fat, fibre, calcium, sodium, vitamin A, folate, vitamin C, and iron.

A 2-month semi-quantitative food frequency questionnaire (FFQ) was used to assess the frequency and portions of street food consumption, which information was also used to validate analyses from the 24-hour recall thus reflecting usual intake. Participants were required to recall within the previous two months, the number of times each food listed in the FFQ was usually consumed, indicating the approximate portions (thereafter converted to grams) eaten at each specified time.

Statistical analysis

Dietary intake data from the 24-hour recall questionnaire of each participant was entered into the Nutritics® software version 4.3 (Dublin, Ireland) to obtain individual energy and nutrient values. The analysis was made for total energy, protein, fat, carbohydrate, fibre, calcium, sodium, vitamin A, vitamin C, folate, and iron. These were selected owing to their public health importance regarding major deficiency concerns and epidemiological links to chronic diseases in adult populations (IFPRI, 2014). Food composition tables for Uganda HarvestPlus (Hotz et al., 2012), and Tanzania (Lukmanji et al., 2008) were used to add the missing food items and recipes to the *Nutritics* software. Analyses for the different nutrients were expressed as percentage energy (%E) and grams (g) for the macronutrients as appropriate, and as milligrams (mg) and micrograms (µg) for the micronutrients. Nutrient values for all participants were later transferred to STATA version 13.0 (Collage Station, TX, USA) and merged with the existing variables from the sociodemographic and anthropometric characteristics.

To obtain proportions of individuals that included street foods at different meal occasions, we employed a scoring approach using MS® Excel (version 2016). An individual was to be assigned a score of either 1 or 0 for each meal occasion (breakfast, lunch, supper and snack) depending on whether he/she included any street food or not, that is, for every meal occasion where a street food was reported to be consumed, a score of 1 was assigned, and a score of 0/zero where street food was not consumed. For instance, if an individual included any kind of street food for breakfast, he/she would earn a score of 1 for breakfast, and if street food was not included, he/she would earn a score of zero for breakfast. The same would apply for Lunch, supper and snack. Every meal occasion was scored independently for each participant. Participants who missed a meal occasion were excluded from this analysis as scoring could only be done for a fulfilled meal occasion. Gender-based proportions were derived based on the total number male and female participants as a denominator.

Sociodemographic characteristics were presented as means and standard deviation for continuous variables, and as percentages for categorical variables. All outputs from the analyses were further stratified by gender.

Results

Data from 160 habitual street food consumers (40% men and 60% women) were analysed, leaving the three (03) who had incomplete data on key variables. The characteristics of the study population disaggregated by gender are summarised in **Table 1**. The mean age of the participants was 29.6 years (SD: 11.5 years) with no significant difference between men and women. Women had a significantly higher mean BMI compared to men (26.1 vs. 23.2; $p<0.001$). Gender was also associated with marital status ($p=0.028$), employment ($p<0.001$), individual income ($p=0.004$), and street food consumption frequency ($p=0.044$), whereas majority of men were single, manual labourers, earned more and had a higher street food consumption compared to women.

Street food contribution towards the daily nutrient intake of habitual consumers

The nutrient contribution of street foods towards total daily intakes is presented in **Table 2**. Overall, for macronutrients, highest contribution was to fat intakes (49.1%) and lowest to carbohydrate intakes (25.6%). Only 30% of overall daily energy intake came from street food. For daily micronutrient intakes, the highest contribution was to sodium (38.4%) and calcium (36.5%), contributing more than a third of daily intake. Vitamin A (11.3%) and vitamin C (24.1%) on the other hand recorded less than a quarter of daily intake contribution. The amount of all nutrients obtained from street foods was significantly higher in men than women, and so were percent nutrient contributions from street food across all nutrients. Street food contribution across all nutrients ranged from 27.9% - 52.1% in men and 4.6% - 38.4% in women. In men, the contribution of street food towards the diet was highest for fat (52.1%), sodium (50.8%) and calcium (50.6%), whereby slightly over a half of the total dietary intake of these nutrients was derived from street food. On the other hand, in women, street food contribution towards the diet was similarly highest for fat (38.4%), sodium (27.7%) and calcium (23.2%).

Proportion of participants including street foods at various meal occasions

Regarding how street food featured in the different meal occasions as shown in Figure 1, majority of participants opted to include street food at breakfast (50%), whereas lunch and snacks featured the least overall street food inclusions from participants (all 20%). Men had a higher proportion of street food inclusion than women for all meal occasions.

Discussion

Contribution to daily energy and micronutrient intake from street food

This study set out to assess the contribution of street food to the diets of habitual street food consumers. Street food contributes a substantial amount of energy (30.1%) towards the daily intake of habitual consumers. Compared with 22.4%-25.6% energy intake reported among street food vendors in central and eastern urban regions of Uganda (Namugumya and Muyanja, 2011), these findings may imply that urban habitual street food consumers have higher intakes of energy from street foods than street food vendors. Noteworthy in this population segment is the significant variation between men and women regarding street food energy contribution, with men recording about twice as much as women (41.6% vs 19.9% respectively). Similar findings were reported by Van't Riet, et al (2002) in Kenya, and Oguntona, et al (1998) in Nigeria, who also found higher energy intake in men than women, although figurative differences were reported (26-35.4% vs 16.7-22.1% in Kenya and 50.3% vs 48.3% in Nigeria). The energy intake figure observed in this study may be attributed to the high fat intake from street food that tends to be influenced by high demand for appealing deep-fried foods (Steyn et al., 2011). The recorded near half (49.1%) of the total fat intake from street food in this study shows fat to have been the main energy contributor compared to protein (29.7%) and carbohydrate (25.6%). The higher fat intake from street food recorded in men than women may also be attributed to the high consumption frequency of street foods observed among men than women in the current study. Similar results where street food contributed more to fat than any other macronutrient have been reported in Kenya (Van‘t Riet et al., 2002) and Burkina Faso (Becquey and Martin-Prevel, 2010) but not in Nigeria (Oguntona et al., 1998). These studies still reported higher intakes among men than women. The fact that in the present study only habitual consumers and all participants from various circles of employment were considered unlike the studies in Kenya, Burkina Faso and Nigeria, could explain the observed figurative variations. But still, it is worthy to note that energy and macronutrient intake among street food consumers in Uganda is similar to other African countries. High energy intake is a risk for overweight and obesity (World Health Organization, 2014). Whereas the energy contribution from street foods with this status quo may appear safe, caution needs to be exercised regarding the choices of the energy sources especially fat, which has been shown to be a dietary risk factor for non-communicable diseases (World Health Organization, 2014). In this regard, men ought to exercise more caution on energy intake from street food, because a substantial contribution was recorded from street foods.

Contribution to daily micronutrient intake from street food

The six micronutrients we focused on were, calcium, sodium, iron, vitamin A, vitamin C and folate. Street food proved a considerable source of dietary sodium and calcium but low vitamin A. More than a third of dietary sodium and calcium for this population segment of consumers comes from street food. There is dearth of information on micronutrient contribution of street food in Africa, thus providing just a few studies to compare, most of which are based on reference intake values. Studies on sodium and folate intake among street food consumers in Africa are still scanty and barely conducted among adults. However, studies that have assessed calcium, vitamin A, vitamin C and iron have reported varying figures. For example, Oguntona et al (1998) reported 46.2% for calcium, 35.2% for iron, 55.3% for vitamin A, 57.3% for vitamin C among adults in Nigeria, all of which are higher than those reported in the current study. Moreover, higher intake of these micronutrients in the latter were recorded in women than men (Oguntona et al., 1998). Contrariwise, in neighbouring Kenya (Van't Riet et al., 2002), among iron, calcium and vitamin A that were assessed, all but vitamin A were reportedly lower than observed in this study. Moreover, a similar finding of men having a higher micronutrient intake from street food than women was reported by the same study as was observed in this current study. This variation may indicate that street food consumers within east Africa may differ from their West African counterparts in regard to their street food choices. This could be due to differing cultural and geographical influence on kind of street foods available and population choices that may be associated with the two regions. Women in this street food consuming population also have very low intake of vitamin and mineral sources from street food. This may be due to having limited access and affordability of these foods because of their cultural confinement in homes and the relatively high cost associated with such foods (Sasson, 2012; Mwangi et al., 2002). Therefore, micronutrient deficiencies may likely occur among habitual street food consumers especially women if additional dietary sources do not provide adequate micronutrients to compensate for the low intake from street food

Street food inclusion in daily meals

Street foods among this habitual consuming population are popularly included at breakfast compared to other meals. Similar findings have been reported by Nago et al (2010) who found high consumption of street food at breakfast among school-going children in Benin (Nago et al., 2010). This may be attributed to the limited time available to prepare or settle for home-made breakfast meals vis-a-vis typical morning work rush associated with urban dwellers that drives them to opt for more convenient ready-made street foods (Johnson and Yawson, 2000). Most foods consumed as or accompanying a breakfast beverage can take considerable time and cost to prepare especially for a small portion, which will normally go above the cost off the street or the time it takes to have it on the street (Osei Mensah et al., 2013). Foods observed to be commonly included in breakfast were chapatti, mandazi, Ugandan pancakes, deep fried cassava, rolex (chapatti roll), katogo (mixed combination of matooke and sauce). The big proportion of unmarried men in our study may explain the observed high inclusion of street foods in most meals among men than women. Food preparation is a role that is attached to women in the cultural confines of Uganda, and therefore men who are not married will opt for out of home sources of food/meals. Majority of foods observed from reported intake for breakfast are oil-rich (deep fried casaava, sweet potatoes, chapattis, mandazi, samosas,), and this may explain the high contribution of fat from street foods. Men who in this population are seen to have a relatively higher street food intake at breakfast than women stand risk for excess fat intake should the observed trend of street food patronisation carry on. Moreover, the likelihood of underreporting of fat intake among participants that is commonly reported (Macdiarmid and Blundell, 1998) may mean the value indicated in our study is likely lower than the actual value. This could imply that more fat may likely have been consumed than reported pointing to a bigger threat than our study may have indicated.

Strengths and limitations

One of the key strengths of this study is that it incorporates gender-based analysis of street food contributions to the daily diets of habitual consumers in regard to both macro and micro nutrients, which has not been well studied in the region. Studies that incorporated gender-based comparisons have mainly focused on macronutrient differences. Additionally, we present results from a habitual street food consuming population given that our urban settings are increasingly adopting street food as a major and accessible food source, which we believe could impact nutritional status. However, our study is limited by the fact that it was based on individual intake recall that may not reflect actual intake. Whereas we believe that analysis of saturated fat would add more strength to our study findings, this was limited by failure of study participants to discern and report on kinds of fat/oil consumed as these were not be provided for by vendors. The fact that there may be variation of street food types across the different parts of the country and across different countries could limit generalisation of our findings to a broader population. Furthermore, whereas food tables that we used had most of the common foods and recipes used within Uganda, we cannot rule out food vendors that may have employed recipes which may be slightly different from the documented. Nonetheless, our findings highlight public health nutritional implications relating to an apparent urban nutrition transition indicative of habituality in street food consumption.

Conclusion

Street food offers considerable nutrition benefits towards the diet of habitual consumers, although these benefits are much more enjoyed among men than women. There is however concern regarding low dietary supply of micronutrients from street food choices of this habitual consuming urban population. Without inclusion of micronutrient-rich foods from other diet sources, this population can stand a micronutrient deficiency risk should future patronising of street food exceed what we observed in our study period. It is therefore important that this population, particularly the physiologically at-risk women to constantly include adequate amounts of food rich in iron, folate, calcium and vitamin A in their daily homemade meals or any other sources to boost their intake. Otherwise the micronutrient profile of street foods needs to be enhanced, which can be through promoting use of micronutrient-fortified ingredients in street food preparation. Men on the other hand need caution on fat and salt intake, since a substantial portion comes from their street food choices.

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Availability of data and materials

Datasets generated and analysed during the study are not publicly available due to terms of participant consent but are available in anonymised form from the corresponding author on reasonable request. Supplementary visual material used in diet assessment associated with this article can be found at https://1drv.ms/p/s!AuEGGCk-vzsSs3zpnw5B5LpbAl8d

Conflict of interest

None

Authors' contributions

W.S, J.S. and A.D. contributed in formulating the research question and designing the study. W.S. and N.M. contributed in carrying out the study and analysing the data. W.S, J.S, A.D. and N.M. contributed in writing and reviewing the final manuscript.

Consent for publication

Not applicable

Ethical approval

This study was conducted in accordance with guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the University of Westminster research ethics committee [ETH1617-1153], and in Uganda by St. Francis Hospital Nsambya REC [UG-REC-020]. Written informed consent was obtained from all participants.

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Table 1: Sociodemographic, Anthropometric, Street Food Consumption Characteristics of Study Participants

Parameter	Overall	Men	Women	P value
No. (n%)	160 (100%)	64 (40.0)	96 (60.0)	
Age (mean ± SD)	29.6 ± 11.5	28.9 ± 9.9	30.1 ± 12.5	0.785
BMI (mean ± SD)	24.9 ± 4.8	23.2 ± 3.0	26.1 ± 5.3	<0.001*
Marital Status, n (%)				0.028*
Married	68 (42.50)	40.63	43.75	
Single	62 (38.75)	50.00	31.25	
Widowed	10 (6.25)	1.56	9.38	
Divorced/separated	20 (12.50)	7.81	15.63	
Education level, n (%)				0.435
No formal education	8 (5.00)	3.13	6.25	
Primary	53 (33.13)	29.69	35.42	
Secondary	87 (54.38)	56.25	53.13	
Tertiary	12 (7.50)	10.94	5.21	
Socioeconomic status (SES), n (%)				0.123
Highest category (2nd quantile)	48 (30.00)	35.94	26.04	
Lower category (1st quantile)	112 (70.00)	64.06	73.96	
Employment category, n (%)				<0.001*
Transport	5 (3.13)	7.81	0.00	
Sales	47 (29.38)	15.63	38.54	
Manual Labour	51 (31.87)	53.13	17.71	
Unemployed	49 (30.63)	17.19	39.58	
Office-based	8 (5.00)	6.25	4.17	
Individual Monthly income, n (%)				0.004*
Less than $60	90 (56.25)	40.63	66.67	
Between $60 – $120	39 (24.38)	32.81	18.75	
Between $120.1 – $180	15 (9.38)	9.38	9.38	
More than $180	16 (10.00)	17.19	5.21	
Frequency of street food, n (%)				0.044*
High (5 or more times a week)	102 (63.75)	73.44	57.29	
Low (2-4 times a week)	58 (36.25)	26.56	42.71	

BMI, body mass index; SD, standard deviation. Data are presented as (mean ± SD), and frequencies (%) as described. p-values are for comparison between men and women obtained by Mann Whitney U test for continuous variables and by Fisher exact test for categorical variables. * Significant association

Table 2: Street food contribution towards the daily nutrient intake of habitual consumers

Nutrients	Overall			Men			Women			P value[ł]	P value[ɣ]
	Total Intake (mean ± SD)	Street food (mean ± SD)	**% street food**	Total intake (mean ± SD)	Street food (mean ± SD)	**% street food**	Total intake (mean ± SD)	Street food (mean ± SD)	**% street food**		
Energy /kcal	2104 ± 805.8	632.3 ± 738.9	30.1	2457.3 ± 834.4	1022.9 ± 910.1	41.6	1868.5 ± 696.3	371.8 ± 439.6	19.9	<0.001*	<0.001*
Protein (g)	55.5 ± 25.8	16.5 ± 21.3	29.7	62.8 ± 24.7	26.0 ± 24.9	41.4	50.7 ± 25.5	10.2 ± 15.7	20.1	0.001*	<0.001*
Carb (g)	370.4 ± 145.5	94.8 ± 121.9	25.6	431.1 ± 151.2	159.8 ± 155.0	37.1	329.9 ± 127.0	51.4 ± 64.8	15.6	<0.001*	<0.001*
Fat (g)	40.1 ± 28.1	19.7 ± 23.5	49.1	48.4 ± 32.0	25.2 ± 14.3	52.1	34.6 ± 23.7	13.3 ± 17.6	38.4	0.004*	<0.001*
Fibre (g)	37.7 ± 24.8	10.9 ± 18.5	28.9	39.3 ± 14.8	18.9 ± 26.10	48.1	36.5 ± 29.7	5.7 ± 7.3	15.6	0.024*	<0.001*
Calcium (mg)	351.0 ± 296.3	128.2 ± 250.8	36.5	426.2 ± 374.4	215.8 ± 366.6	50.6	300.9 ± 218.3	69.8 ± 87.2	23.2	0.001*	<0.001*
Sodium (mg)	1425.9 ± 782.5	548.0 ± 612.1	38.4	1643.1 ± 787.8	835.1 ± 692.5	50.8	1281.0 ± 748.5	354.7 ± 463.1	27.7	0.005*	<0.001*
Iron (mg)	14.1 ± 6.5	4.2 ± 5.3	29.7	15.8 ± 6.4	6.8 ± 6.6	43.0	13.0 ± 6.4	2.3 ± 3.1	17.7	0.005*	<0.001*
Vit.C (mg)	103.8 ± 89.0	25.1 ± 42.7	24.1	101.3 ± 85.9	41.1 ± 55.8	40.6	105.4 ± 91.4	14.4 ± 26.4	13.7	0.740	<0.001*
Vit.A (µg)	1011.4 ± 3077.6	113.9 ± 261.1	11.3	722.5 ± 907.2	201.3 ± 371.0	27.9	1203.8 ± 3887.6	55.7 ± 119.35	4.6	0.911	<0.001*
Folate (µg)	267.1 ± 160.6	67.0 ± 89.4	25.0	261.3 ± 127.1	106.0 ± 108.3	40.6	271.0 ± 180.1	41.0 ± 62.5	15.1	0.925	<0.001*

[ł] Comparison of total intake of men and women, [ɣ] Comparison of street food consumption of men and women. *Denotes significant difference between men and women. P values obtained by Mann Whitney U test

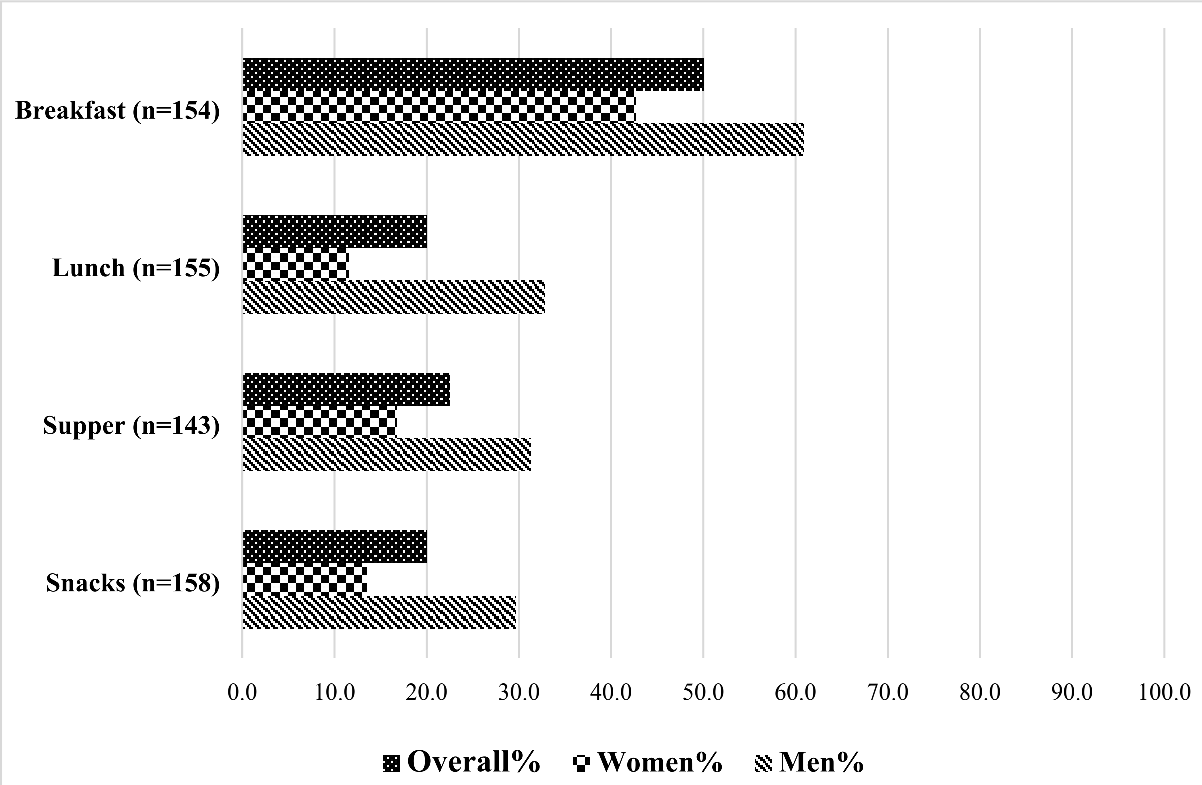

Figure 1: Proportion of Participants that included street food at different meals