IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES
ISSN PRINT 2319 1775 Online 2320 7876
 Volume 11, Iss 12 2022

NUTRITIONAL CONTRIBUTION OF STREET VENDED FAST FOODS TO THE DIETARY INTAKE OF PEOPLE IN MUZAFFARPUR TOWN, BIHAR

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Abstract

In spite of having great and excellent quality of restaurants, people have amazing craziness for road-side foods especially fast foods. Increased consumption of street vended foods can immensely contribute to provision of nutrients and availability of food to millions of people world-wide. The objective of the present study was hence to evaluate nutrient components especially fat and energy content of fast food sold in streets of Muzaffarpur town and compares it with RDA of different age groups. A total of 14 fast food samples from streets were collected from different locations of Muzaffarpur town in aseptic containers and immediately transferred to the laboratory for fat analysis. Descriptive statistics such as percentage means and standard deviation were used to analyze the collected data. In terms of nutrient contribution, the highest level of energy was found in Chilli chicken followed by Samosa, Chhole bhature and Chowmein. One serving of Chilli chicken, Samosa, Chhole bhature and Chowmein would provide approximately 409Kcal, 235Kcal, 185Kcal, 182 Kcal energy from fat present in them respectively. One serving of Chilli chicken would provide approximately 20% of RDA for calories for all age groups. One serving of Samosa would provide approximately 10% of RDA for calories for all age groups. Per serving of Chhole bhature and Chowmein would provide approximately 8% of RDA for calories for all age groups. Chilli-chicken, was found to provide approximately more than 200 % of daily fat intake of all age group. Per serving of Chhole bhature, Chowmein and Samosa were found to provide approximately more than 100 % of daily fat intake of all age group. From this study it was concluded that street vended fast food provide a source of affordable nutrients to the diet of people who consume street foods in Muzaffarpur town.

Key words – Street vended fast food, Nutritional contribution, Nutrients, RDA

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Introduction

Street vended fast foods are ready-to-eat foods that are very popular among urban dwellers in developing countries. Street vended foods are readily available in many forms that the consumers can choose from, depending on their tastes and preferences, and also their affordability. The people, who are poor and could not afford food from retail stores, gratified their taste buds through the food that street vendors provided. Due to this, these foods, in one way or another, and directly and indirectly, can significantly influence human nutrition, food security and safety. A number of investigations have demonstrated that street foods immensely contribute to the diet of children and adults in developing countries, both in terms of the variety of food groups consumed and protein, energy and micronutrient intakes[11,12]. According to Muzaffar[9], street foods provide a source of affordable nutrients to the majority of the people especially the low-income group in the developing countries. These foods account for a variable, but significant part of the daily diet and nutritional requirements through a wide range of ingredients and products[4,2]. For example, a study carried out in Indonesia reported that it was possible to obtain almost half the recommended daily allowance of protein, iron, vitamin A and vitamin C from a street food meal by spending US$ 0.25[4]. A similar study in Bangkok, Thailand, showed that street foods provided around 40, 39 and 44% of total energy, protein and iron intake, respectively[5]. The nutritional importance was even greater in children between 4 and 6 years old, who obtained 80% of their energy, protein, fat and iron intake from street foods[4]. Albuquerque[1] conducted a review of street food in Turkmenistan, focusing on its nutritional composition. Their study emphasized the role street foods play in providing essential macro and micronutrients, though often lacking in diversity. They noted high energy contributions, but also potential public health concerns related to fat and salt content. Hill [7] reviewed street food vendors in Cape Town, highlighting how vendor practices influence the nutritional quality of food. The review focused on vendor education and the need for health interventions to improve the nutritional value of street food. Owing to street foods diverse nature, it is difficult and inappropriate to generalize on their nutritional composition from the few analyses that have been carried out on some of them to date. Different street vended foods are expected to have different nutritional contents depending on the types of the raw materials and quantities used, which vary widely. Their ingredients are rarely declared and/or analyzed[3, 10] making it difficult to estimate their nutrient content in the diet. Some FAO investigations have shown street foods to be good sources of energy and protein available at a lower cost than pre-packaged processed foods[6]. To ensure the nutritional quality of the diet of people who consume street foods, it is essential that the nutritional composition of each street food be analyzed and reported. There is also need for quantitative information on the nutrient content of street foods to assess the nutritional quality of different types of these foods and their contribution to the overall energy and nutrient intake of different population groups in order to help identify particular foods or ingredients that in terms of composition and consumption, may offer potential as vehicles for nutritional

interventions[3].The objective of the present study was hence to analyzed the nutritional composition in-terms of energy and fat of fast food sold by small vendors in the streets of Muzaffarpur town and compare it with RDA of different age groups.

Materials and Methods

Collection of Samples

A total of 14 street vending fast food samples were collected from different locations of Muzaffarpur town in an aseptic container and immediately transferred to the laboratory for derivation of Crude fat content.

Determination of Crude fat

The crude lipid content was obtained by extracting 5 g of each sample in a Soxhlet apparatus using Petroleum ether boiling point 60-80^{o}C as the extract-ant. Analysis was carried out in triplicates.

Statistical analysis

Data were analyzed by using the Statistical Package for Social Sciences (SPSS) program version 11. Descriptive statistics such as percentage means and standard deviation were used to present the findings.

Results and Discussion

Nutritional contribution of the street vended fast foods compared to RDA for different age groups.

Table-1 Recommended dietary allowances for different age groups

Group	Particulars	Net energy* (Kcal)/day	Protein * (g)/day	Fat * (g)/day	Carbohydrate** (g)/day
Man	Sedentary work	2425	60	20	290-348
Women	Sedentary work	1875	50	20	263-315
Children	10-12 years	2100	54	22	238-285

***RDA based on ICMR guidelines (ICMR, 1990)**
**** RDA based on Nutrition Guideline (NIN, 2010)**

Table-2 Nutritional contribution of the street vended fast foods and compared it to RDA for different age group

Sl. No	Name of Street Vended Fast Food	Serving Size	Energy from Fat (Kcal)	Percentage of RDA met for Energy*			Fat (g) (Mean ± S D)	Percentage of RDA met for Fat*		
				Children (10-12 yrs)	Sedentary men	Sedentary women		Children (10-12 yrs)	Sedentary men	Sedentary women
1.	**Chhole Bhature**	1 plate	185.4	8.8	7.6	9.8	20.6±26.0	93.6	103	103
2.	**Pay Bhaji**	1 plate	115.2	5.4	4.7	6.1	12.8±16.0	58.1	64.0	64.0
3.	**Burger**	1 pc	94.5	4.5	3.8	5.0	10.5±9.8	47.7	52.5	52.5
4.	**Chilli Chicken**	1 plate	409.5	19.5	16.8	21.8	45.5±31.9	206.8	227.5	227.5
5.	**Chowmein**	1 plate	181.8	8.6	7.7	9.7	20.2 ±22.8	91.8	101	101
6.	**Pani Puri**	6 pc	49.5	2.3	2.0	2.64	5.5 ±0.14	25	27.5	27.5
7.	**Bhel Puri**	50 g	4.5	0.21	0.18	0.24	0.5 ±0.19	2.2	2.5	2.5
8.	**Samosa**	2 pc	234.9	11.18	9.6	12.5	26.1±24.19	118.6	130.5	130.5
9.	**Tikki Chat**	1 plate	99.9	4.75	4.1	5.3	11.1 ±9	50.4	55.5	55.5
10.	**Samosa Chat**	1 plate	108.9	5.1	4.5	5.8	12.1 ±9.8	55	60.5	60.5
11.	**Egg Roll**	1 pc	108	5.1	4.4	5.76	12 ±6.6	55	60.0	60.0
12.	**Veg Roll**	1 pc	72	3.4	2.9	3.84	8.0 ±4	36.6	40.0	40.0
13.	**Veg Momo**	6 pc	9.9	0.4	0.4	0.5	1.1 ±0.9	5.0	5.5	5.5
14.	**Roasted Mixed Bhuja**	1 00 g	40.5	1.9	1.6	2.1	4.5±4.12	20.5	22.5	22.5

***%RDA calculated basis ICMR guidelines (ICMR, 1990)**

In terms of nutrient contributions from street vended fast foods, the highest contributions to daily energy intake from fat present in it was found in Chilli chicken followed by Samosa , Chhole bhature and Chowmein . One serving of Chilli chicken, Samosa ,Chhole bhature and Chowmein would provide approximately 409Kcal, 235Kcal, 185Kcal, and 182 Kcal energy from fat present in them respectively. One serving of Chilli chicken would provide approximately 20% of RDA for calories for all age groups. One serving of Samosa would provide approximately 10% of RDA for calories for all age groups. One serving of Chhole bhature, and Chowmein would provide approximately 8% of RDA for calories for all age groups. Pav bhaji, Burger, Tikki chat, Samosa, and Egg roll would provide approximately more than 100 Kcal energy from fat present in them and would provide approximately 5% of RDA for calories for all age groups. From the results these foods can be regarded as street fast food fairly showing high in energy and should be avoided by health conscious people as little as 50 extra calories a day ,which when taken regularly ,will results in 2 kilogram gain in weight in year. Over a period of time, over weight and obesity can occur. Obesity is known to be a predisposing factor for a number of health problems.(Mudambi and Rajagopal)[8].

In terms of fat contribution the street fast food also contains a high amount of fat. Chilli chicken Chhole bhature,Chowmein and Samosa were found to be containing very high amount of fat . One serving of Chilli chicken provided approximately more than 200 % of daily fat intake of all age group. Per serving of Chholebhature,Chowmein and Samosa were found to provided approximately more than 100 % of daily fat intake of all age group. The data on fat intake is of some concern in terms of the high contribution of street fast foods to the total intakes of fat and their role in the development of obesity and non-communicable diseases.

Conclusion

From this study it was concluded that, street vended fast foods provide an appreciable amount of recommended nutrient composition. These foods account for a variable, but significant part of the daily diet and nutritional requirements through a wide range of ingredients and products. However an important concern that requires cognition when discussing nutritional composition of street fast foods is the Westernization food. Street fast foods such as Chilli chicken, Chowmein, Chhole bhature, Samosa ,Samosa chat and Pav bhaji were found to be high in energy because of its relatively high fat content . High energy and fat content of street fast food are an important concern that requires cognition because of the assumed their possible role in the development of obesity and non – communicable diseases.

References

1. Albuquerque, G.; Sousa, S.; Lança de Morais I.; Gelormini, M.; Motta, C.; Gonzales , G.B.; et al. (2022).*Nutritional characterization of street food in urban Turkmenistan, Central Asia*. Front Public Health.;10:877906.
2. Cohen, M.J. and Garrett, J.L.(2010). The food price crisis and urban food insecurity. *Environment and Urbanization*,***22***, 467-482.

3. Draper, A. (1996).Street foods in developing countries: The potential for micronutrient fortification. London: London School of Hygiene and Tropical Medicine.
4. FAO. (2001). Street foods alimentation de rue. Alimentos que se vendenen la vía pública.
5. FAO.(2009). Good Hygienic practices in the preparation and sale of street foods in Africa. Tools for training. Food and Agriculture Organization of the United Nations, Rome, Italy .
6. FAO. Street foods. Report of an FAO Expert Consultation, Jogjakarta, Indonesia, 5-9 December 1988: 1989.
7. Hill, J.; Mchiza, Z.; Puoane ,T.; Steyn, N.P.(2019). *Food sold by street-food vendors in Cape Town and surrounding areas: a focus on food and nutrition knowledge as well as practices related to food preparation of street-food vendors*. J Hunger Environ Nutr.,14(3):401–15.
8. Mudambi,S.R and Rajagopal,M.V.(2001).Fundamentals of Foods and Nutrition.New Age International (P)Ltd.,New Delhi.
9. Muzaffar, A.T.; Huq, I. and Mallik, B.A. (2009).Entrepreneurs of the streets: An analytical work on the street food vendors of Dhaka City. *International Journal of Business and Management*, ***4***, 80-88.
10. Namugumya, B.S.; Muyanja, C. (2012).Contribution of street foods to the dietary needs of street food vendors in Kampala, Jinja and Masaka districts, Uganda. *Public Health Nutrition*; ***15***, 1503-1511.
11. Riet, H.V.; Hartog, A.P.; Staveren, W.A.(2002). Non-home prepared foods: contribution to energy and nutrient intake of consumers living in two low-income areas in Nairobi. *Public Health Nutrition*; ***5***, 515-522.
12. Steyn, N.P.; Mchiza, Z.; Hill, J.; Davids, Y.D.; Venter I, Hinrichsen, E.; Opperman, M.;Rumbelow, J. and Jacobs, P.(2013). Nutritional contribution of street foods to the diet of people in developing countries: a systematic review. *Public Health Nutrition*; ***17***, 1363-1374.