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FOOD AND NUTRITION SECURITY IN DEVELOPING COUNTRIES: A CASE STUDY OF CITY OF VARANASI IN INDIA

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Abstract:

Safety of the street foods is an important aspect in the field of nutrition security. A study was conducted in the city of Varanasi in India. It was observed that about 42% of the working man and women in the age group of 25-45, and 61% of the students in the age group of 14-21, consume foods from the street vendors in the day at least once. About 23% of working women prefer to have food from street vendors rather carrying food from home to the work place. About 82 % of people of all age groups prefer to go to street vendors against only 18% who prefer to go to the restaurant in the evening. About 57% working man and women are concerned about the cleanliness and hygiene of the vendors while the rest are not concerned about these aspects.

Key words: Risk analysis, Safety handling, Food control, Codex, Street vendor

Introduction:

Food Safety issues have been the most wanted intervention in the field of Nutrition all over the world. Though there has been a remarkable improvement in the quality and quantity of food consumed in the developing countries, and the nutritional status of the children below five years has increased significantly, there are still problems posed to nutrition improvement, and food safety measures are extremely important area of concern. Food safety issues have an ever-increasing profile on a global basis. Food has never been as safe as today. Crises like Foot and mouth disease (FMD) and animal diseases like Swine fever are wrongly associated with food safety in the western European countries. Consumer awareness and interest in food safety matters in assuring good health and safety of domestic populations. Food safety measures also play an important role in ensuring the quality of foods entering the international trade.

Importance of optimal nutrition:

The importance of optimal nutrition for health and human development is well recognised. Achievement of food adequacy at the national level is necessary. This can be achieved through a sustainable food based approach. Food safety, Risk Management and Food control are the three components of risk analysis. In India, HACCP (Hazard Analysis Critical Control Point) certification has been made compulsory for seafood export oriented units. All developing as well as European countries should adopt this HACCP measures, if they do not exist already. However, they need to be evolved locally by each of the units and strictly implemented rather than relying only on certification. HACCP can be easily applied to small and tiny scale food industries. However food safety education for food handlers is the most essential intervention in recent times all over the world. Codex plays an important role in promoting Food Control and Food Safety issues.

Indian Scenario :

India, a fast growing developing country, also faces the same problems. India is the second most populous country in the world, with a population of 1.03 billion. An estimated 400 million children are between 0 and 18 years of age. Acceleration in economic growth has made India among the 10 fastest growing developing countries. To meet all the nutritional needs of growing population, the country will have to produce an extra five million tonnes of food grain annually. This can be

achieved through increased production of live stock, globalization on domestic production, employment, price stabilization of food stuffs, and lastly, by improving the nutritional and health status of the individuals. Food control systems are the focus of major reforms in many parts of the world. Consumer awareness and interest in food safety matters is higher than ever. Sound food control systems are essential for assuring the health and safety of domestic populations, and the safety and quality of foods entering international trade. International food trading is growing at a rapid rate and developing countries have the opportunity to capture this trade. The role of codex is reemphasized, when we talk of Food safety and Food control issues.

Street food vending:

Street food vending is spreading rapidly all over the world. The popularity of the street food vendors are attributed to the paucity of time available with men and women to cook food at home, cheaper cost of food vendors, variety of foods, short preparation time etc.

Overview of the area of study:

The area of study chosen by me was the City of Varanasi, in India, which is called as the oldest living City, with a long history of over 5000 years. It is situated in the Eastern part of India. The Eastern part of India is comparatively underdeveloped, the food production, consumption and nutrition education are not harmonious. Foods in good quantity, especially, pure milk, milk products and good Soya products are not available in sufficient for general consumption. There is a disparity between the urban and rural areas in food development and there exists many nutritional problems in children, adolescents and pregnant women. Under nutrition and over nutrition coexist in the country however, in several cases, the street foods may be the cause of food borne diseases like, Hepatitis-A, diarrhea, etc. due to unhygienic practice of the vendors. A case study was conducted by collecting random samples of the food habits of the people and quality of foods available in the street vendors, through a pretested questionnaire.

Objectives of the study:

1. To assess the socio economic aspects of street foods,
2. To find out the nutritive value of the street foods,
3. To examine the safety aspects of street foods,
4. To find out the food habits of the people,
5. To recommend measures for safety handling of street foods.

Common street foods consumed :

(In the city of Varanasi, U.P. India)

1. *Potato cutlet with spiced peas (curry),*
2. *Gol gappa* (an Indian fast food prepared with wheat flours balls filled with Tamarind paste and spiced potato),
3. *Samosa* (An Indian version of Vegetarian Tibetan Momos),
4. *Egg-Chicken Rolls, milk products* (mainly, Rabri, a form of concentrated milk added with sugar),
5. *Jilabi* (pancake, dipped in sugar syrup),
6. *Chinese foods, viz., Chowmein* (Vegetarian and Non vegetarian),
7. *Juices like fresh sugarcane juice, Green orange juice etc.*

Survey:

The study was conducted taking 150 samples by random sampling method spread all over the city of Varanasi. The samples included 50 workingmen, and 50 working women, all in the age group of 25-45 years, in addition to the students aged between 14-21 years which included boys and girls in equal proportions. Care was taken to ensure that the samples covered different parts of the city, encompassing all the income groups, and various age groups inside the same lot of data.

The data collected by the questionnaire were interpreted and the findings were as shown below:

Table -I: Percentage of workingmen and women consuming street food regularly for lunch

Male		Female		Average	
Yes	No	Yes	No	Yes	No
61	39	23	67	42	58

Thus it was found that while 61 percent of workingmen prefer to have food from street vendors, only 23 percent of women preferred it. The reason may be attributed to different nature of work and work place of men and women, inhibition on the part of women to go to the street vendor during lunch hour, and also more consciousness for hygiene of street food on the part of women. But the fact that about half of the working persons consume street vendors food during lunch hours is worth mentioning.

Table-II: Percentage of students who consume street food in the age group of 14-21 years

Boys		Girls		Average for students	
Yes	No	Yes	No	Yes	No
75	25	47	53	61	39

It was observed that majority of students consume street foods, the percentage of boys is greater than that of girls.

Table-III: Restaurant vis-à-vis Street vendor goers:

Male		Female		Average		Students	
Street Vendor	Restaurant						
75	25	89	11	82	18	73	27

The study revealed that the percentage of people who opt for food from street vendor out number the percentage of people who prefer to go to restaurant only.

Table-IV: Consciousness for hygiene:

Male		Female		Average		Students	
Yes	No	Yes	No	Yes	No	Yes	No
46	54	68	32	57	43	44	56

It was found that the consciousness among women toward the street vendor food is more than the men, and it is the least among students.

Table-V: Quality consciousness:

Working men		Working women		Students		Average	
Yes	No	Yes	No	Yes	No	Yes	No
83	17	94	06	88	12	88	12

Quality consciousness for food is also more in women than men. That means, better the quality of food of street vendor, more is the attraction. In the other words, food quality or taste of food has an overriding effect over all other considerations.

Table-VI: Percentage of people of different income groups who consume street vendor foods: (Indian standard has been adopted for income groups)

Income Group	Male		Female	
	Consume street food	Do not consume street food	Consume street food	Do not consume street food
Higher	25	75	21	79
Middle	45	55	39	61
Lower	68	32	54	46

The fascination for street vendor food cuts across all income groups, all income groups take street vendors food , though in varying degrees.

Summary of findings:

The study reveals that about 42% of the working man and women in the age Group of 25-45, and 61% of the students in the age group of 14-21 consume foods from the street vendors in the day at least once during the lunch hour. About 23% of working women prefer to have food from street vendors rather carrying food from home to the work place.

About 82 % of people of all age groups prefer to go to street vendors against only 18% only who prefer to go to the restaurant in the evening. About 57% working man and women are concerned about the cleanliness and hygiene of the vendors while the rest are not concerned about this but 88% of the people are concerned about the quality of food available in the street vendors. People of all income groups do consume street foods, though the percentage varies for different income groups.

Observation:

1. The nutritive values of the street foods were found to be fairly satisfactory.
2. The consumers of street foods ranged from lower income group people to high-income group people.
3. The food did not have excessive amount of dirt or filth.
4. Appearance, quality, smell, and taste were satisfactory.
5. Calorie value per cost was very good, almost 2500 Kcal per one Euro!
6. The water quality was not satisfactory.
7. Hazard analysis for critical point (for food and water) also revealed that contamination occurred mainly due to prolonged storage, unclean water and dirty utensils used.

Conclusion & Recommendation:

An action plan was prepared in the city with some notable recommendations like listing of vendors, food handlers, identification of hawking areas, area wise lay-out plan, proper cleanliness and food safety measures, proper coordination with the Varanasi Municipal Corporation, food inspectors, police and Government of Uttar Pradesh (The provincial govt.). License to vendors, shopkeepers, provision of potable water, garbage and waste water disposal facilities, awareness education to public, vendors, regular analysis of food and water sample, traffic and pedestrian movement etc. were recommended as effective food safety measures.
