

## **Knowledge of Nutrition, Food Hygiene and Sanitation Practices in Street Food Sellers' of Amravati City**

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### **ABSTRACT**

The word "street food" describes a variety of tasty, easily available, prepared, and served ready-to-eat foods and beverages at various crowded places. Food is one of the most essential needs in our lives. Nowadays, eating out at street food eateries has become more popular in India as a result of lifestyle changes among consumers who need tasty foods every time, as well as a decline in the number of joint families, etc. The eating of the main meals outside the home has significantly increased as a result of various factors. Indian consumers are growing accustomed to dining out. Sellers of street food have really low health, nutritional status, and social profiles. The primary goal of this study is to look at food safety, hygiene, and sanitation practices at street food sites and the nutrition knowledge of street food sellers. The street food sellers' nutrition education, attitude toward cleanliness, and hygienic procedures play an important role in maintaining the health and nutritional status of their consumers. From earlier studies, it was observed that food sellers have hygiene and sanitation knowledge but don't practice it. The aim of the study was to find out current food hygiene and sanitation practices amongst street food sellers in Amravati city. The majority of the street food sellers have low levels of education and are inexperienced in food hygiene and sanitation. The education of the respondents has been found to be positively correlated with food hygiene and sanitation practices.

**Key Words :** Street food seller, Nutritional knowledge, Food hygiene, Sanitation practices

### **INTRODUCTION**

Food is a basic human necessity. Due to changed lifestyles and food choices, food habits are also changing in India, and the popularity of street foods is increasing day by day. Nuclear families, staying in hostels, long working hours, easy access, taste of street food, advertisements, availability, peer pressure, and working women are the factors that increase the demand for street food. Street food is available at a low cost, which is affordable for all age groups, and the frequency of street food consumption is increasing. The majority of such street food eateries pop up near colleges, work places, the roadside, bus stops, theatres, and train stations, either as temporary shelters or pushcarts/thela style. Street food ventures provide employment to people in the city area and have the capacity to generate potential earnings. In a small place, there is a lot of limitation, and inappropriate facilities such as clean tap water, washing, cleaning areas, and proper raw food and

cooked food storage facilities can lead to contamination of foods and certain health hazards to their consumers. The wash water in Uganda was repeatedly recycled and only changed when it became extremely murky and soapy. The risk factors for diarrhoea and its causes were something that street vendors were aware of. At ground level, flies could be seen handling the cooked food. Despite knowing about hygiene procedures, street food vendors do not follow them. (Muyanja *et al.*, 2011). The street food market is increasing as consumers prefer quick and affordable food choices. Consumers may have very few healthy food choices, which increases the risk of infection and infestation. Foods sold on the street that might be contaminated by microbiological food pathogens are the main causes of disease and fatalities globally. 33 million healthy lives are lost each year as a result of the estimated 600 million people. Nearly 1 in 10 people in the world become ill after consuming contaminated foods, resulting in 420 000 deaths (Choudhury *et al.*, 2011). The three bacteria with the highest incidence in street foods from Bangladesh were coliform, *Bacillus cereus*, and *E. coli*. The most variable resistance response against a wide range of antibiotics was demonstrated by the presence of antibiotic-resistant microorganisms, including *Salmonella* and *Enterobacteriaceae* (Jahan, 2018). Health problems like obesity, hypertension, cardio-vascular disease, cancer, and various communicable diseases are increasing due to unhealthy foods consumed on the street. Customers of street food in the historic Nigerian town of Oyo were either obese or overweight, and their selection of foods was minimal (Leshi and Leshi, 2017). By examining the nutritional content of the food sold on the streets of Calcutta, we found that 20 to 30 g of protein were present in a 500-gram meal on average. It contained 174 to 183 g of carbohydrates, 12 to 15 g of fat (vegetable fat), and about 1000 kcal. Non-allowed colors, particularly metanil yellow, were frequently present in foods. Drinking water was contaminated (Indira, 2015). Teenagers in Gabon frequently consume foods high in fat and energy, sweets, and foods poor in fiber outside of the home (30%) (Monteillet, 2017). It is frequently observed that the methods used in the preparation and sale of “garba,” a very popular dish sold on the street, can expose customers to health hazards, including cancer, cardiovascular illnesses, high blood pressure, and obesity (Bhattacharya *et al.*, 2008). Street food is a key source of the spread of drug-resistant germs in the community, according to microbiological studies (Quazi, *et al.*, 2010). Pathogenic bacteria may grow in food when food handlers handle food incorrectly and ignore proper food hygiene and sanitation practices, and it can infect street food consumers as food- and water-borne illnesses may take place. Due to a lack of food hygiene training, many street food vendors have poor attitudes, knowledge, and practices addressing food safety. The microbiological state of food served on the street causes significant concerns and is thought to play a substantial role in the development of foodborne illnesses (Mamun *et al.*, 2013). Street food consumption is increasing all over the world, and it has a strong link to communicable and non-communicable diseases. The primary goals of this study were to investigate the nutrition knowledge, food hygiene, and sanitation practices of street food sellers and to observe how street food sellers in Amravati city maintain basic hygiene and sanitation facilities.

Street food sellers who have poor nutrition knowledge may be more likely to handle food improperly, raising the risk of contracting foodborne infections. It's more probable that a seller will uphold appropriate food hygiene and safety measures if they have appropriate nutrition knowledge, so they can plan healthy and nutritious recipes and fulfill their consumers' nutritional requirements. Customers are more likely to buy from sellers who follow healthy cooking practices and maintain hygiene and sanitation because they feel more confident, which increases both sales and consumer loyalty. Nutrition-savvy sellers are more likely to provide better food selections, which is good for the general public's health. Sellers can choose the ingredients they use and the food they sell with

knowledge of the value of a balanced diet. The study is particular to Amravati City, Maharashtra, India, and it concentrates on the regional setting. With this strategy, it is possible to delve deeply into the distinctive features of street food selling in Amravati, including regional cuisines, cultural traditions, and socioeconomic issues that may not have been fully examined in earlier studies.

## METHODOLOGY

### **Research design and study area:**

This study is a cross-sectional study. The present investigation was carried out in Amravati, a city in the western Vidarbha region of Maharashtra state. Street food sellers in Amravati were the target demographic.

### **Sample and sampling technique:**

Street food sellers' sampling was done by a stratified random sampling method. Amravati city's map was divided into 10 strata, and the entire population of Amravati city was divided into 10 strata or subgroups. Five street food sellers were selected randomly from each strata; therefore, 50 samples of street food sellers were selected. In order to collect quantitative information, this study predominantly used a quantitative research approach.

### **Data collection tool:**

A data collection tool was developed by developing a set of statements on knowledge of nutrition, food hygiene, and sanitation practices. Then this tool was administered randomly to 10 street food sellers. After careful scrutiny, the tool was subjected to testing for validity and reliability. The finalized tool was used for the study. The data collection tool also included age, education, and socio-demographic details.

### **Collection of Data:**

In this study, the data were collected through a questionnaire and interviews. Questionnaires were translated into Marathi by the researcher and used for the collection of information on dependent and independent variables.

Informal consent from each participant was taken for ethical consideration. The data is kept anonymous and confidential. All moral principles and local laws were maintained.

### **Statistical analysis of data:**

Statistical methods were used to analyze and interpret the data. The frequencies and percentages were computed. The coefficient of correlation was computed to test the correlation between independent and dependent variables.

## RESULTS AND DISCUSSION

The results of the present study were drawn after an analysis of the collected data on nutrition knowledge, food hygiene, and sanitation and applying appropriate statistical methods. Demographic information is important, and it gives sample characterization. This included age, education, and socio-economic status. Table 1 represents the data, and it shows that 94% of respondents were male and only 6% were female. 82% of respondents were in the 20–40 age group. 10% of respondents have completed their undergraduate degree, 32% have studied till higher school, 24% have studied

secondary school, 30% have completed primary schooling, and 4% are illiterate. Only 2% of respondents belonged to lower socio-economic status, and 26%, 38%, 22%, and 12% were from upper lower, lower middle, upper middle, and upper socio-economic status, respectively.

<b>Table 1 : General and socio-demographic characteristics of respondents</b>			
Variables	Categories	Frequency (n 50)	Percentage (%)
Gender	Male	47	94
	Female	03	06
Age (Years)	20-40	41	82
	41-60	09	18
Education	Illiterate	02	04
	Primary school	15	30
	Secondary school	12	24
	Higher school	16	32
	Undergraduate	05	10
	Post Graduate	00	00
Socio-economic status	Upper	06	12
	Upper Middle	11	22
	Lower Middle	19	38
	Upper Lower	13	26
	Lower	01	02

It was depicted in Table 2 that 86% of the sample had mobile food eateries and only 14% had stationary street food eateries. 52% of respondents have average knowledge of nutrition, 22% have good knowledge, and 26% have poor knowledge. It shows that they need proper training in nutrition. 32% and 30% of street food sellers follow good and average food hygiene and sanitation practices, respectively, whereas 38% of respondents follow poor food hygiene and sanitation practices. 44% of respondents have average knowledge about the food contamination's sources, causes, and prevention; 34% have good knowledge about the food contamination's sources, causes, and prevention; whereas 22% of respondents have poor knowledge about the food contamination's sources, causes, and prevention. 38% of respondents did not wash their hands before cooking, 26% sometimes, and 36% of respondents always wash their hands before cooking, respectively. 20% of respondents continue working in infectious conditions; 58% of respondents sometimes work; and 22% of respondents avoid working in infectious conditions. 72% of respondents do not wear caps and hand gloves during cooking and serving food in their set-ups. 52% of respondents did not follow the rules of food hygiene and sanitation. Only 4% of respondents strongly felt that they needed food safety training, 44% agreed, 42% were neutral, and 10% disagreed with the need for food safety training. 82% of respondents wash food items before cooking every time, 12% wash food items before cooking sometimes, and 3% do not wash food items before cooking.

From Table 3, where Kendall's tau test is used, it was observed that the education of the respondents has been found to be positively correlated with food hygiene and sanitation practices at the 0.05 level of significance, i.e., respondents with higher education have been found to follow more food hygiene and sanitation practices.

<b>Table 2 : Operational characteristics of street food sellers</b>			
Variables	Categories	Frequency(n 50)	Percentage(%)
Type of street food eatery	Mobile	43	86
	Stationary	07	14
Knowledge of food sellers on nutrition, food hygiene and sanitation	Good	11	22
	Average	26	52
	Poor	13	26
Food hygiene and sanitation practices of street food sellers	Good	16	32
	Average	15	30
	Poor	19	38
Knowledge of food contamination- Sources, causes and prevention	Good	17	34
	Average	22	44
	Poor	11	22
Wash hand before cooking/washing hands after returning from washroom and after rubbing nose or scratching body	Always	18	36
	Sometimes	13	26
	No	19	38
During infectious diseases avoid working in food service setups	Yes	11	22
	Sometimes	29	58
	No	10	20
Wear hair caps and hand gloves during cooking and serving	Yes	06	12
	Sometimes	08	16
	No	36	72
Follow the rules of food hygiene and sanitation	Yes	13	26
	Sometimes	11	22
	No	26	52
Felt necessity of food safety training	Strongly agree	02	04
	Agree	22	44
	Neutral	21	42
	Disagree	05	10
	Strongly Disagree	00	00
Wash food items before cooking	Yes	41	82
	Sometimes	06	12
	No	03	06

<b>Table 3: Correlation between gender, age, education, SES, knowledge of nutrition, food hygiene, and sanitation practices of respondents</b>						
Variables	Gender	Age	Education	SES	Knowledge on nutrition	Food hygiene and sanitation practices
Gender	1	.031	-.014	-.027	.021	.032
Age	.031	1	-.027	.036	-.109	.046
Education	-.014	-.027	1	.153**	.047	.197**
SES	-.027	.036	.153**	1	-.126	-.142
Knowledge on nutrition	.021	-.109	.047	-.126	1	0.13
Food hygiene and sanitation practices	.032	.046	.197**	-.142	0.13	1

\*\* . Correlation is significant at the 0.01 level (2 tailed)

\* . Correlation is significant at the 0.05 level (2 tailed)

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