



Street-Vended Foods: is it Safe?

KEYWORDS

Street vended food, unhygienic quality, human health and public health.

Kagne, S.R

Head & Associate Professor, Department of Microbiology, Badrinarayan Barwale College, Jalna, M.S. India

ABSTRACT *The street food industry plays an important role in meeting the food requirements of urban dwellers in many cities and towns of developing countries and the industry feeds millions of people daily with a wide variety of foods. Street foods were collected from different locations of Jalna city. The collected food samples were analyzed and found that presence of E. coli and S. enteritidis in each type of street food samples. The unhygienic quality of most popular types of street vended foods may be banned which is sold based on the consumer demand. So, there is an urgent need to follow the control measures by all food vendors to improve microbial quality of street vended foods.*

INTRODUCTION:

The street food industry plays an important role in meeting the food requirements of urban dwellers in many cities and towns of developing countries and the industry feeds millions of people daily with a wide variety of foods that are relatively cheap and easily accessible. Street-vended foods or its equivalent "street foods" which are defined as foods and beverages prepared and sold by vendors on streets and other public places for immediate consumption or consumption at a later time without further processing or preparation. Urbanization and population growth, especially in developing countries, are expected to continue into the next century and street-vended foods, which are largely but not exclusively an urban phenomenon will expand accordingly (Garode and Waghode, 2012).

Vendors are often poorly educated, unlicensed, untrained in food hygiene. They work under crude unsanitary conditions with little or no knowledge about the causes of food borne disease (Barro et al., 2007). Most of the foods are not well protected from flies, which may carry food borne pathogens. The consumers who depend on such food are more interested in its convenience than in question of its safety, quality and hygiene. Potential health risks are associated with contamination of food by *E.coli*, *Salmonella enteritidis*, *Pseudomonas* species, *Staphylococcus aureus* and *Proteus* species during preparation, post cooking and other handling stages (Honoshiro et al., 2004; Ghosh et al., 2007).

In India, food safety is a growing problem with rampant instances of adulteration and contamination of essential foods that can be a potential source of disease infection or toxic poisoning. Food spoilage occurs mostly during handling from the primary producers to the consumers (e.g. food production, processing, packaging, distribution, storage, cooking or serving). Adulterants (non-nutritious substances) are intentionally/deliberately added or unintentionally enter into food. Similarly, presence of harmful chemicals or microorganisms including those unaffected by thermal processing is common. At community level, serious outbreaks of food-borne diseases have been reported from time to time. However, consumers do not have knowledge/in-

formation probably because impact of the contamination on human health is apparent only after prolonged exposure (Gahukar, 2014).

The attempt was made to analyze of street-vended foods like Kachori, Samosa, Ragda-Petis, Bhel and Pani-puri sold by street vendors for bacterial contaminations. The unhygienic quality of most popular types of street vended foods which was sold based on the consumer demand. So, there is an urgent need to follow the control measures by all food vendors to improve microbial quality of street vended foods.

MATERIALS AND METHODS:

Street foods were collected from different locations of Jalna city. From every location, a vendor was chosen on the basis of their sale. Based on the consumer demand, street vended foods like Kachori prepared (chatpata), Samosa prepared, Bhel and Panipuri sold by street vendors were analyzed for their bacterial loads during monsoon season i.e. June - July, 2016. All samples (1 plates each) were collected in sterile packed steel container and transported to the Microbiology laboratory. The collected samples were analyzed for isolation and identification of *E. coli* and *S. enteritidis* according to standard procedures (Collins and Lyne, 1980; A.P.H.A. 1998). All plates were incubated under aerobic conditions at 37°C for 24 – 48 hrs. After incubation, results were noted down.

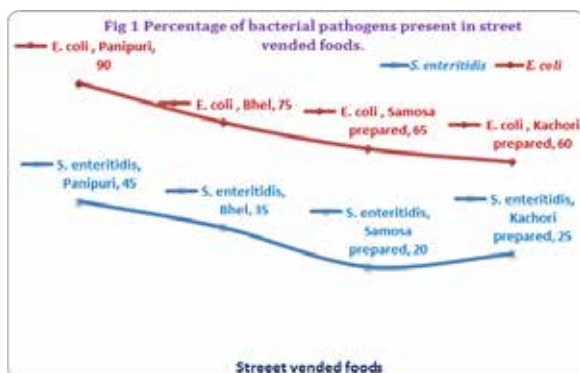
RESULTS AND DISCUSSION:

Street vended foods are analyzed for bacteriological examinations from different locations of Jalna city. In this study, we are found that the pathogenic bacteria such as was present abundantly in number. The collected food samples were analyzed and found that presence of *E. coli* and *S. enteritidis* in each type of street food samples. Most of the street foods are contaminated with heavy load of *E. coli* and *S. enteritidis* particularly in Panipuri and Bhel food samples. Because street foods are not protected from the various contamination such as flies, which may carry food borne pathogens, multifunctional hands, water used for their preparation and also own health status of vendors. Safe food storage temperatures are rarely applied to street foods (Garode and Waghode, 2012).

Table 1 Presence of bacterial pathogens in street vended foods

Sr. No.	Street food	Total samples	E. coli		S. enteritidis	
			Samples	%	Samples	%
1	Panipuri	20	18	90	9	45
2	Bhel	20	15	75	7	35
3	Samosa prepared	20	13	65	4	20
4	Kachori prepared	20	12	60	5	25

Overall study indicated that 90% panipuri, 75% Bhel, 65% Samosa prepared, 60% Kachori prepared samples were contaminated with *E. coli* while 45% panipuri, 35% Bhel, 20% Samosa prepared, 25% Kachori prepared samples were contaminated *S. enteritidis* shown in table 1. The presence of pathogenic bacteria could be due to inadequate hand washing, utensils washing, raw and rough method of food preparation by street food workers and the absence of good manufacturing practices shown in fig. 1.



In addition, there is potential health risks associated with initial contamination of foods by pathogenic bacteria as well as subsequent contamination by vendors during preparation, handling, and cross contamination (Mosupyne and Van Holy, 2000). From all above discussion it was concluded that chatpata street foods were contaminated with *E. coli*, *S. enteritidis* which cause various food borne infections and unsafe for the public health and hygiene.

Street food which is consumed by large amount of population of different age groups. Many people have worked on the fact that street foods are contaminated with different bacterial pathogens because of various sources like improper handling of street foods, washing of utensils, dish cloths and stalls are at crowded place. For the contamination of street food, personal hygiene and activity of vendor is also responsible. All the steps involved from preparation to serving of street foods and food ingredients to the consumer must be bacteriologically evaluated (Tambekar et al., 2011). In the present study, the bacteriological quality of street vended foods found to be contaminated with bacterial pathogens like *E. coli* and *S. enteritidis* which are responsible for the constipation, food borne and diarrheal diseases.

CONCLUSION:

Street vended food which is consumed by large amount of population of different age groups. The collected food samples were analyzed and found that presence of *E. coli*

and *S. enteritidis* in each type of street food samples. Due to contamination of street foods, vendor is responsible for the public health and hygiene. Many people have worked on the fact that street foods are contaminated with different bacterial pathogens because of various sources like improper methods of preparations and handling of street foods. The presence of pathogenic bacteria could be due to inadequate hand washing, utensils washing, raw and rough method of food preparation, less educated and laziness by street food workers and the absence of good manufacturing practices. So, there is an urgent need to follow the control measures by all food vendors to improve microbial quality of street vended foods. The unhygienic quality of most popular types of street vended foods may be banned which is sold based on the consumer demand. So, there is an urgent need to follow the control measures by all food vendors to improve microbial quality of street vended foods.

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