



TO ASSESS KNOWLEDGE AND ATTITUDE REGARDING FOOD SAFETY AND HYGIENE AMONGST FOOD VENDORS IN PANCHKULA.

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ABSTRACT **Background :** Food safety is an important criteria in assessing development of the country and the health of the population . Lack of basic infrastructure and knowledge of hygiene alongwith poor sanitary practices in food storage, handling, and preparation can create an environment in which infectious agents are more easily transmitted.
Aim: To obtain information on the food safety knowledge and attitude of food handlers and sanitary conditions of food service establishments in Panchkula.
Methods: A cross-sectional descriptive study was conducted amongst 200 randomly selected street food vendors in the Panchkula city.
Results: This study reveals poor food handling knowledge by food handlers and poor sanitary conditions of food service establishments . Majority were males (97%).
Conclusion: Poor food hygiene knowledge of food handlers can contribute to outbreaks of foodborne illnesses. Education, training and motivation should be provided. Licensing and inspection should be conducted regularly.

KEYWORDS : Knowledge, Attitude, Food Safety, Panchkula.

INTRODUCTION

Food safety is of utmost concern as it is an important criteria in assessing the development of the country because of its direct implication on the health of the population .^[1] It is defined by the FAO/WHO as the assurance when food is consumed in the usual manner and does not cause harm to human health and wellbeing.^[2] Food service establishments are sources of food borne illnesses in which food handling personnel play an important role.^[3]

Mishandling on the part of the food handlers enables pathogenic bacteria to come into contact with food . The pathogenic bacteria then survive and multiply causing illness in the population consuming that item. ^[4] A Street food vendor is broadly defined as “a person who offers the goods for sale to the public at large scale without having a permanent built up structure from which to sell.” The hands of food service employees can be vectors in the spread of food borne diseases because of poor personal hygiene or cross-contamination .^[5]

There is a substantial increase in the number of street vendors in major cities around the world, especially in developing countries of Asia, Latin America and Africa. Though there is a national policy named Urban Street Vendor 2004 overarching objective of which is to be achieved is to “Provide and promote a supportive environment for earning livelihood to street vendors, as well as ensure absence of congestion and maintenance of hygiene in public space and streets”^[6] but several studies conducted have shown gap in the implementation of this policy. Lack of basic infrastructure, lack of knowledge of hygiene^[7] alongwith poor sanitary practices in food storage, handling, and preparation can create an environment in which bacteria and other infectious agents are more easily transmitted.^[8,9] Moreover, inadequate time and temperature control and cross contamination are responsible for food poisoning outbreaks.^[10]

A study conducted among food handlers in Bahir Dar town in North West Ethiopia indicated that most of them were infected with enteric bacteria and parasites.^[11] A USA based study suggested that improper food handling practices contribute to about 97% of food borne illnesses in food services establishments and homes.^[12] The aim of this study was therefore to obtain current information on the food safety knowledge and attitude of food handlers and the sanitary conditions of food service establishments in Panchkula city ,Haryana (India).

METHODOLOGY

Study design and Study area:

A cross-sectional descriptive research was conducted amongst the street food vendors in the Panchkula city. The research was done to collect information about food handling amongst vendor by structured questionnaire at the time of convenience. It was an in-depth-interview with the volunteer for extracting their knowledge about the food safety and hygiene among food handlers.

Sample size:

200 food vendors were selected randomly from Panchkula city , Haryana.

Sampling Technique:

Two-stage random sampling.

Inclusion criteria:

Respondents involved in the study were those above the age of 18 years. Respondents included were those who gave written consent.

Analysis was done by using the SPSS software version 21 (statistical package for social sciences). All the collected information was entered in Microsoft office excel spreadsheet.

RESULTS

The study was carried out in Panchkula city of Haryana, India among the 200 street food vendors . Male vendors were 194(97%) and female vendors were 6(3%). It was observed that most of the vendors (91.5%) were not trained on the aspect of safe food handling. The age of street food vendors ranged from 18years to 66 years and mean age was 32.25±10.82. Most of the vendors were Hindu (94%), followed by Sikhs(4%) and Muslim (2%). The income of the vendors ranged from 4000 to 60000 .

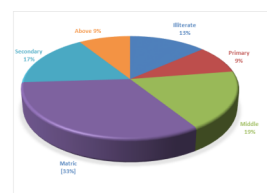


Figure 1: Distribution according to the educational status.

Table 1: Distribution of the vendors according to the characteristics of their present occupation as street food vendors.

PARAMETERS	FREQUENCY (N=200)	PERCENTAGE (%)
License to sell food items:		
Yes	7	3.5
No	193	96.5
Work experience of vending:		
Less than 5 years	48	24
5-9 years	37	18.5
10- 19 years	59	29.5
20- above	56	28
Type of vending:		
Mobile	58	29
Stationary	142	71
Main occupation:		
Yes	162	81
No	38	19
Type of food sold:		
Hot drink /Hot soup	31	15.5
Cold drink/Juice/Shake	23	11.5
Cooked food	124	62
Non-cooked food	22	11

Majority of the street food vendors (96.5%) had no license to sell the food items. Most of the respondents (59%) had been in the food vending trade from more than 10 years. Only (28%)of street vendors mentioned that they had experienced of less than 5 years. Majority of the vendors (81%) indicated that food vending was their main occupation. There were (71%) vendors selling food items at stationary stalls at the street, while others (29%) were mobile vendors.

Regarding the food sold by vendors, it was found that more than half of the vendors (62%) were selling cooked food. While beverages (hot drink/cold drink) were also popular as street food items which were sold by (27%) of the vendors.

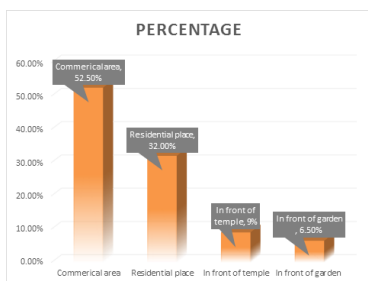


Figure 2: Distribution of the vendors according to the characteristics of place of vending.

Table 2: Distribution of food vendors according to their knowledge regarding diseases and its symptoms.

ITEMS	(N=200)		
	YES N(%)	NO N(%)	DON'T KNOW N(%)
Type of food borne diseases:			
Food poisoning	85(42.5)	90(45)	25(12.5)
Dysentery	100(50)	78(39)	22(11)
Typhoid	149(74.5)	40(20)	11(5.5)
Hepatitis-A	154(77)	36(18)	10(5)
Symptoms of food borne illness:			
Abdomen pain	171(85.5)	21(10.5)	8(4)
Diarrhoea	101(50.5)	91(45.5)	8(4)
Vomiting	108(54)	85(42.5)	7(3.5)
Nausea	67(33.5)	123(61.5)	10(5)
Headache	91(45.5)	98(49)	11(5.5)
Fever	95(47.5)	94(47)	11(5.5)
Other	88(44)	101(50.5)	11(5.5)

The knowledge exhibited by the food vendors about food borne diseases were: hepatitis-A and typhoid as most prevalent types of diseases identified, followed by dysentery. Less than half of the

respondents knew about the food poisoning. Most of the vendors had stated that abdomen pain, vomiting, diarrhoea and fever were the main prevailing symptoms of the food borne diseases.

Table 3: Opinion of food vendors regarding adverse effect on food hygiene

VARIABLES	(N=200)		
	YES N(%)	NO N(%)	DON'T KNOW N(%)
Poor hygiene practice	169(84.5)	23(11.5)	8(4)
Improper cooking	99(49.5)	92(46)	9(4.5)
Preparation of food in advance	132(66)	60(30)	8(4)
Left the food at room temperature for longer time	127(63.5)	64(32)	9(4.5)
Bad quality of food material	145(72.5)	49(24.5)	6(3)
Coughing or sneezing over food	78(39)	115(57.5)	2(1)
Contamination of raw food	150(75)	40(20)	10(5)
Unclean hand	121(60.5)	73(36.5)	6(3)
Unclean utensils	127(63.5)	66(33)	7(3.5)
Through dust and files	142(71)	51(25.5)	7(3.5)
Contaminated water	97(48.5)	96(48)	7(3.5)
Unclean towel	56(28)	128(64)	16(8)

Table 3 shows that most of the vendors had knowledge about food safety such as poor hygiene practices(84.5%),bad quality of food material (72.5%), contaminated raw food(75%), unclean hand (60.5%), unclean utensils(63.5%), also through dust and files (71%) could affect the status of the food.

Almost all the street food vendors had a good knowledge about use of gloves (64.5%)and apron(64.5). It was stated as essential requirement while cooking and serving the food.



Figure 3: Distribution of street food vendors according to hand washing practices.

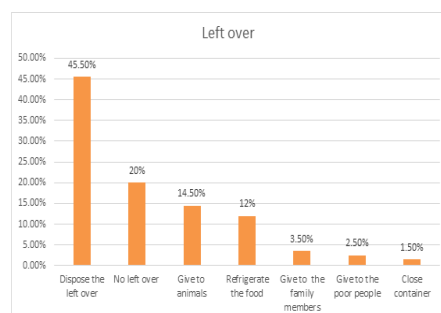


Figure 4: Distribution of the street food vendors according to attitude regarding leftover food.

Regarding methods of dealing with leftovers food, most of the vendors (45.5%) reported that they dispose the leftover and (20%) had no leftover food at all. One fourth of vendors used to refrigerate the food and many others had a practice of giving it to animals.

More than half of the street food vendors (62%) were cleaning the knife and chopping board with the help of cloth to prevent the contamination of food.

Table 4: Distribution according to the knowledge of vendors on "when they could not handle the food safely".

PARAMETERS	YES N(%)	NO N(%)	DON'T KNOW N(%)
When they have cold and cough	30(15)	164(82)	6(3)
When they have open wound in their hand	1(0.5)	158(79)	41(20.5)
When they are suffering from diarrhoea	12(6)	181(90.5)	7(3.5)
When they do not wash their hand after using toilet	200(100)	-	-
When they are not washing their hands before handling the food items	200(100)	-	-

Most of the vendors had stated that they cannot handle the food safely when they have diseases(82%), when they have wound in their hand (79%), when they are suffering from diarrhoea(90%).All the vendors cannot handle food safely when they did not wash their hands after using toilet.Also, they could not handle the food items properly when they did not wash their hands.

DISCUSSION

This study reveals poor food handling knowledge by food handlers and poor sanitary conditions of food service establishments. In this study majority of the food handlers were found to be males (97%) and only 3% females. This is in contrast to the study done at Bahir Dar town of Eithopia where majority were females. Food safety training has been shown to have a positive impact on practices of handlers.^[13] But in our study 91.5% of the vendors were not trained. A study on prevalence of selected food consumption and preparation behaviors associated with increase risks of foodborne diseases done by klontz et al showed that food vendors had at least high school level education. This is similar to our study where maximum number of food vendors were matriculate.^[14]

Food handlers are expected to have a substantial knowledge and skills for handling foods hygienically.^[7] Although most of the handlers responded positively for the food safety related questions but in reality whether they practice it as well is a subject of further research. This is important as some studies have reported that food handlers did not usually translate their knowledge into practice.^[15,16]

Statistically significant difference in the sanitary conditions among the establishments was observed in a study done in Turkey.^[17] This difference has been attributed to the difference in licensing criteria employed by their agencies among the establishments. While in our case 96.5% food vendors had not been provided license by the competent authorities which may be the reason of poor sanitary practices. Legal binding processes and inspection are crucial steps for maintaining good the sanitary quality of food and drink establishments compared to unlicensed ones as well as among the establishments.

Preparation of meals long before their consumption and storing them at ambient temperature are key factors in the handling of meals that contribute to food poisoning.^[18] Moreover, studies conducted on street vended foods have revealed that high microbial counts were associated with food when held at room temperature for four or longer hours.^[19,20]

Our study also focussed on left over food items. 45% disposed left over food and only 3.5% was given to family members Thus the consumption of left-over food may cause foodborne illnesses to family members, consumers and the beggars. In the transmission of food borne diseases, the role of time, temperature abuse and poor management of leftover has been highlighted.^[21,22]

LIMITATIONS

One of the limitations of this work is that some socio-demographic variables such as working hours, sanitary conditions and details of the services in the establishments have not been considered. Besides, enumeration of bacteria and other enteric pathogens were not included in the study.

In conclusion, this study revealed poor food hygiene knowledge of food handlers. This can contribute to outbreaks of foodborne illnesses. Educational programs targeted to change the knowledge and attitude of food handlers have been recommended earlier. Therefore, training and motivation should be provided to the food handlers working in these establishments. In addition, licensing and inspection should be conducted regularly. Further studies should focus on enumeration of bacteria from food utensils, food handlers, bacteriological examination of the water used for the washing.

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