



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3592561>Available online at: <http://www.iajps.com>

Research Article

FOOD SAFETY KNOWLEDGE AND PRACTICES AMONG FOOD VENDORS IN BAHAWAL VICTORIA HOSPITAL BAHAWALPURTahira Imam¹, Humaira Imam², Hafiz Muhammad Irfan³¹MBBS, Quaid-e-Azam Medical College, Bahawalpur, University of Health Sciences Lahore, Pakistan²M.Phil, Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University Multan, Pakistan³MBBS, Multan Medical and Dental College Multan, University of Health Sciences Lahore, Pakistan**Abstract:**

Introduction: Food safety and hygiene are essential in promoting and preserving the health of consumers, as food borne disease are significant contributors to morbidity and mortality globally. Unhygienic food has been implicated in the outbreak of several nutrition related illness with factors such as poor food handling practices of food vendors as a major culprit. Later this study was conducted to assess the level of food safety knowledge and practices among food vendors of Bahawal Victoria Hospital, Bahawalpur.

Objective: The aim of this study was to assess the level of food safety knowledge and practices among street food vendors in Bahawal Victoria Hospital, Bahawalpur.

Materials and methods: Study Design: Observational descriptive cross-sectional study design.

Study Setting: Bahawal Victoria Hospital, Bahawalpur.

Duration: The total duration of study was of two months from April 2019 to May 2019.

Sample size: According to the available resources, it was decided to take the sample of 100 street food vendors.

Sampling technique: Non-probability convenience sampling technique used.

Ethical Issue: Ethical committee approval topic of study was submitted to the local ethical committee, and its approval was taken before start of the study. Street food vendors in Bahawal Victoria Hospital, selling food items. Street food vendors were not willing to participate.

Data collection: After obtaining the informed consent, data was collected with the help of performed and pretested questionnaire through face to face interview, according to inclusion criteria till completion of required sample size. Questionnaire comprised of two sections. Section 1 included data regarding demographic profile of respondents. Section-2 included questions about food safety knowledge and practices of street food vendors. Questionnaire was translated into Urdu and reversed back translated into English for better comprehension of respondents.

Data Analysis: Data were coded and analyzed manually. Frequency and percentages were presented in the form, of tables and graphs. The results were finally analyzed statistically as well to find out their statistical significance by applying the suitable test of significance.

Results: Our study conducted on 100 street food vendors in Bahawal Victoria Hospital Bahawalpur, showed that out of the total study street food vendors, 15% had poor knowledge 85% had good knowledge regarding food safety. While majority of them (76%) were observing good food safety practices.

Conclusion: On the basis of our study, it was concluded that most of street food vendors had good knowledge and good practices regarding hygienic handling of food.

Key words: Food safety; knowledge; practices; street food vendors.

Corresponding author:**Humaira Imam,**

Contact: +92 3054486164

Email: humaira.imam786@yahoo.com

QR code



Please cite this article in press Humaira Imam et al., *Food Safety Knowledge and Practices among Food Vendors in Bahawal Victoria Hospital Bahawalpur.*, Indo Am. J. P. Sci, 2019; 06(12).

INTRODUCTION:

Food is an important basic necessity for life. Its procurement, preparation and consumption is vital for the sustenance of life. Food is defined as an early article manufactured, sold or represented for the use as an edible or drink for human consumption. Street foods are one of the most saleable things which are relatively cheap and readily available to a large number of people. The term street food refers to the food and beverages prepared and sold by vendors in streets and other public places for immediate consumption or consumption at a later time without further processing or preparation. Street food vending is a prevailing and distinctive part of a large informal sector. Apparently many people prefer eating food from vendors instead of preparing or cooking at home. These food are highly demanded both by the sellers and consumers because of their tastes, easy availability, low cost, cultural and social heritage connection and being nutritional.

Food handler is defined as a person in food trade or someone professionally associated with it, such as an inspector, who in his routine work comes into direct contact with food, in the course of production, processing, packaging or distribution [9]. Street food vendors are often poor, uneducated and lack knowledge in safe food handling, environment, sanitation and hygiene, mode of food display, food service and hand washing, sources of raw materials and use of potable water. Consequently, street foods are perceived to be a major public health risk [1]. In hospital, these food vendors are catering a large number of patients, visitors, medical students, doctors and hospital staffs, [2]. It is seen that students think that food sold in the open are unhealthy with low nutrition, but they prefer them because they are cheap and quickly served. To avoid any major outbreak among them, high standards of hygienic practices must be ensured. Hence their knowledge, attitude and food hygiene as essential to understand [2].

According to the food and agriculture organization, 2.5 million people eat street food daily [1]. and unhygienic food has been implicated in the outbreaks of several food related illnesses with factors such as poor food handling practices of food vendors as the major culprit [3]. Food borne diseases are growing in both established and unindustrialized states [4].

A large proportion of food borne disease are caused by improperly prepared and mishandled food by food vendors and also food handlers at home [5]. World health organization estimated the global burden of food borne diseases to about 600 million with about 420,000 deaths annually [3]. Unsafe food creates a

vicious cycle of disease, diarrhea and malnutrition which significantly impedes public health and socioeconomic development. The role of food vendors ineffectively reducing the risk of food borne disease is critically important as they are in direct contact with the consumers and also they are the least challenging in terms of implementing food safety control measures [5].

So, this study is carried out to find out the food safety knowledge and practices among street food vendors in Bahawal Victoria Hospital.

Literature review

Knowledge, attitude and practice of food hygiene among 100 food handlers in Bahawal Victoria Hospital, Bahawalpur showed that 62% of participants believed that transmission of disease takes place via contaminated hands while only 23% believed it to occur via contaminated water. 79% ha practice of checking expiry dates of products before food preparation whereas 20% had not. All participants washed their hands before food preparation. 64% stored leftover food in refrigerator whereas 36% did not use a refrigerator [6].

A cross sectional study regarding food safety and hygiene practices was conducted on 87 food handlers in Nigeria state. It showed that 64.4% of food vendors had been vending food for 5 years or less while 36.6% had been doing so for above 5 years. Practice of hand washing was found among 67.8% of respondents and 1.1% of neve practiced hand washing. 67.8% practices proper covering of cuts and wounds during food handling [3].

Another descriptive cross-sectional study about knowledge, attitude and practice of food hygiene among 200 food vendors was carried out in Owerri, Imo State, Nigeria. It revealed that 71.5% of respondents were females and 28.5% were males. Among them, 55.5% participants considered diarrhea and 38% considered typhoid as food-borne illness. 62.5% of participants protected food from flies and rodents while 37.5% did not [5].

In another observational cross sectional study conducted among 106 street food vendors in Kolkata, India, it was revealed that 53.77% of food vendors belonged to group of 20-40 years of age and 39.63% belonged to 40-60 years of age group. Among them, 72.72% knew loose motion and 67.4% considered vomiting as symptoms of food-borne illness. 26.41% of participants practiced covering of food and 28.30%

practiced checking expiry date of products before use [2].

Assessment of hygiene practices of street food vendors via cross-sectional study was conducted on 100 food vendors in Lahore. It was revealed that 17% of participants were illiterate, 65% of them had studied up to primary level while 185 were under-matric. 12% sold their food with covering while 88% sold without covering food. Among them, 31% used to cough over food and 69% avoided to do so [1].

Study conducted in Handan a third tier city of China demonstrate that street food sellers have mostly deprived food handling observes, and most are effective under unhygienic environments. Street food vendor exercise should be selected to improve the safety of street food. Other rules and processes should also be spread to increase the food safety knowledge, attitudes, and behavior of vendors in Handan [7].

Another cross sectional study conducted on 100 food handlers in canteen of Bahawal Victoria Hospital Bahawalpur revealed that mean age of participants was 32 years and 93% of them were males. 36% had knowledge of food-borne diseases. 58% claimed they used gloves for food preparation? All participants washed their hands before food preparation [9].

Evolution of food safety knowledge and practice among food service staff in Al-medina hospital Saudi Arabia was assessed in cross sectional study. The study revealed that 48.5% of respondents knew the importance of hand washing and handling of raw meat. 63.8% respondents knew about the recommended temperature for food storage [8]. Food safety and hygiene practices among 200 street food vendors was examined via cross sectional study conducted in Noida, Uttar Pradesh, India revealed that over 61% participants did not give due preference to covering their food items and 39% practiced covering but it was not properly covered, so more than 80% of the stalls were exposed to flies [10].

Objective of study

The main objective of our study was to explore food safety knowledge and practices among street food vendors in Bahawal Victoria Hospital, Bahawalpur.

Operational Definitions

1. Knowledge

Awareness of street food vendors about food safety

Total score of Knowledge = 24

Poor knowledge = 1-12

Good knowledge = 13-24

2. Practice

The routine of food safety practice among the street food vendors

Total score of practice = 10

Poor practice = 1-5

Good practice = 6-10

MATERIAL AND METHODOLOGY:

MATERIALS AND METHODS

Study Design

Observational descriptive cross-sectional study design.

Study Site

Bahawal Victoria Hospital, Bahawalpur.

Duration of study

The total duration of study was of two months from April 2019 to May 2019.

Sample size

According to the available resources, it was decided to take sample of 100 street food vendors.

Sampling Technique

Non-probability convenience sampling technique used.

Ethical issue

Ethical committee approval topic of study was submitted to local ethical committee and its approval was taken before the start of study.

Inclusion criteria

Street food vendors in Bahawal Victoria Hospital Bahawalpur selling food items.

Exclusion Criteria

Street food vendors not willing to participate.

Data collection

After obtaining the informed consent, data was collected with the help of performed and pretested questionnaire through face to face interview, according to inclusion criteria till completion of required sample size. Questionnaire comprised of two sections. Section 1 included data regarding demographic profile of respondents. Section-2 included questions about food safety knowledge and practices of street food vendors. Questionnaire was translated into Urdu and reversed back translated into English for better comprehension of respondents.

Data Analysis

Data was coded and analyzed manually. Frequency and percentages were presented in the form, of tables

and graphs. The results were finally analyzed statistically as well to find out their statistical significance by applying the suitable test of significance.

RESULTS:

Our study conducted on 100 street food vendors of ages ranging <20 to >60 in Bahawal Victoria Hospital, Bahawalpur. The study results showed that majority of street food vendors at good food safety knowledge and practice (85% 76%). these facts have been illustration (**Table 1**). The age distribution showed that maximum street food vendors (65%) belonged to young age group and only a small number (7%) of them were above 60 years while gender distribution revealed that majority (97%) of street food vendors were males as shown in the (**Table 2**). The study revealed a large number (51%) of these street food vendors were illiterate followed by small percentage (35%) who had only primary and middle level of education. These observations are mentioned in (**Table 3**). Fruit juices and fast food sellers were more in number (52%) as compare to seller of others commodities. This is shown in (**Table 4**).

About two third of participants (85%) protected their food by covering it, as depicted in (**Table 5**). Almost half of the respondents (46%) use to store food at some cool place while only few (1%) of them new correct temperature for storing food as highlighted in (**Table 6**).

Knowledge and practice of food safety among street food vendors had no significant relationship with age as highlighted in (**Table 7**) ($p=0.3747$, $p=0.2842$). In context of education, there was no significant relationship between food safety knowledge and practices with education among street food vendors as depicted in (**Table 8**) ($p=0.86978$, $p=0.992$).

According to figure 1, most of the street food vendors had good safety practices regarding had washing (93%), checking expiry dates of fruit juices and fast food (67%) covering wounds and cuts on hand (79%), avoiding sneezing and coughing over food (86%) and protection of food from flies, rodents and dust (90%).

DISCUSSION:

Our sample size consisted of 100 food vendors in Bahawal Victoria Hospital Bahawalpur. To assess their knowledge, attitude and practice of food hygiene the results showed that majority of participants had knowledge of food safety which was comparable to study done in Owetti Imo State Nigeria which showed that 81% of their participants had good food safety knowledge [5].

As self-reported practice is assumed to be a good reflection of knowledge and in our study most of respondents (76%) had a good level of food safety practices. Our results were similar to those of another study conducted in plateau State Nigeria in which 54% of participants also had good food safety practices [3]. The age distribution of our study population was the same as that of another study conducted in Kolkata, India by Saswati Mukherjee [2].

As far as gender of street food vendors was concerned, our study revealed that almost all (97%) of respondents were male while opposite findings were observed in two Nigerian studies in which maximum number of respondents (79% and 71%) were females. These results confirmed to the trend of cooking and selling food being a feminine business in African setting while in Pakistan most males are engaged in such business of our culture [3, 5].

Educational level of our respondents was very disappointing half of them were illiterate and only 17% got education up to primary level. These results were in contrast to a similar study conducted in Lahore, Pakistan in which only 17% of participants were illiterate while majority (65%) had education up to primary level. This difference can be attributed to the fact that Lahore is developed city and better education opportunities are present in Lahore than in Bahawalpur [1].

Regarding the type of food sold, 36% sold fruit juices and 14% sold meals and these findings were similar to the results of a study held in Kolkata, India where 17% sold fruit juices and 15% meals [4].

Covering of food items is the best way of preventing food contamination. The results of our study revealed that 85% of food handlers practiced covering prepared food but this observation was in contrast to a study conducted in Lahore in which only 12% of respondents covered the food during vending. The reason may be because despite higher literary level and awareness people do not apply their knowledge into food safety practices [1].

Almost half of the participants used to store food at any cool place and only 16% used a refrigerator, but these observations were opposite to those found in a study conducted in canteens of BVH, Bahawalpur, in which 64% of participants stored the leftover food in refrigerators. The reason is the availability of refrigerators in canteens for food storage but most street food vendors cannot afford to buy their own

refrigerators as they belong to poor socioeconomic class [9].

It was troublesome to observe that almost all (97%) of respondents stated that they did not know correct temperature for storing food while only a small number (1%) knew it to be 4°C. these results were in contrast to those found in Saudi Arabian study, according to which 64% of their participants knew that 4°C is the optimum temperature for storage of food. These differences can be attributed to low literacy rate and hence less awareness about hygienic food handling in food handlers in Bahawalpur [8].

CONCLUSION:

On the basis of our study, it is concluded that most of street food vendors had good knowledge and good practice regarding hygienic handling of food.

Recommendations

- Personal hygiene of street food vendors should be monitored strictly in order to protect community from infectious disease.

- Health education should be provided to community by mass media like TV, Internet Newspaper regarding food hygiene
- Street food vendors should make sure that their utensils and surrounding are clean and hygienic
- Smoking should be avoided especially during cooking and handling food
- Hand washing should be ensured with soap and sufficient water before eating, while cooking, handling food and after using toilet
- Wearing of proper uniform must be compulsory for all street food vendors while cooking and handling food
- All street food vendors must have health certificate and should against food borne disease like typhoid, hepatitis food poisoning.
- Seminars should be arranged for street food vendors in order to educate them properly regarding food safety

Table 1. Level of food safety knowledge and practices among street food vendors

variable	Level of food safety knowledge		Level of food safety practices	
	Number	Percentage	Number	Percentage
Poor	15	15%	24	24%
Good	85	85%	76	76%
total	100	100%	100	100%

Table 2. Age and gender distribution of street food vendors

Age group(Years)	Frequency	Percentage
Below 20	8	8%
20-40	65	65%
41-60	20	20%
Above 60	7	7%
Total	100	100%
Gender distribution		
Male	97	97%
Female	3	3%
Total	100	100%

Table 3. Level of education among street food vendors

Level of education	Frequency	Percentage
Illiterate	51	51%
Primary	17	17%
Middle	18	18%
Secondary	11	11%
Higher	3	3%
Total	100	100%

Table 4. Type of food sold by street food vendors

Food type	frequency	percentage
Fast food	16	16%
Meals	14	14%
Fruit juices	36	36%
Tea	11	11%
Others	23	23%
Total	100	100%

Table 5. Protection of prepared food among street food vendors

Protection of prepared food	frequency	percentage
By covering it	85	85%
Don't protect it	5	5%
By other means	10	10%
Total	100	100%

Table 6. Knowledge about food storage place and temperature of stored food among street food vendors

Food storage place	Frequency	Percentage
Refrigerator	16	16%
Some cool place	46	46%
Any place	38	38%
Total	100	100%
Temperature of stored food		
4°C	1	1%
Below 0°C	2	2%
Don't know	97	97%
Total	100	100%

Table 7. Comparison of food safety knowledge and practices among street food vendors (age specific)

Age (Year)	Food safety knowledge			Food safety practices		
	Poor	Good	Total	Poor	Good	Total
Below 20	2	6	8	3	5	8
20-40	7	58	65	18	47	65
41-60	5	15	20	2	18	20
Above 60	1	6	7	1	6	7
Total	15	85	100	24	76	100
	X ² =3.114	P=0.3747	df =3	X ² =3.7965	P=0.2842	df =3

Table 8. Comparison of food safety knowledge and practices among street food vendors (Education specific)

Food safety knowledge			Food safety practices			
Level of education	Poor	Good	Total	Poor	Good	Total
illiterate	7	44	51	12	39	51
primary	3	14	17	4	13	17
Middle	2	16	18	4	14	18
Secondary	2	9	11	3	8	11
Higher	1	2	3	1	2	3
Total	15	85	100	24	76	100
			$\chi^2=1.2501$ P=0.86978 df=4	$\chi^2=0.2473$ P=0.992 df=4		

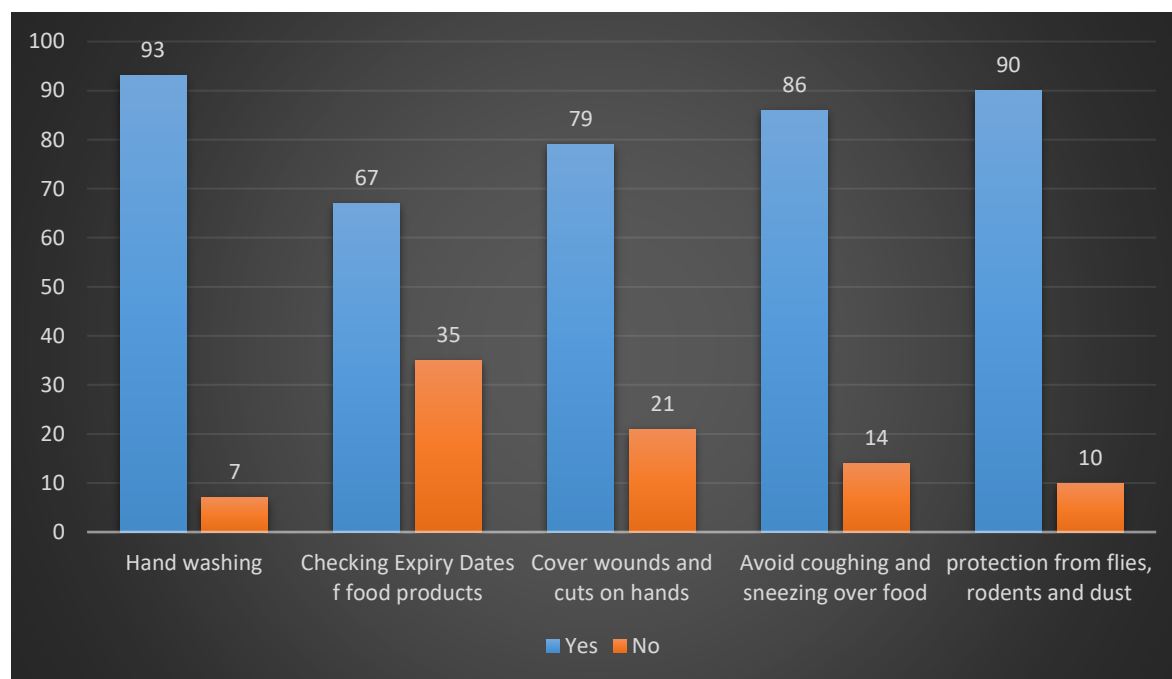


Figure 1. Food safety practices among street food vendors

Funding Source

There is no funding source for this study.

Competing interests

The authors declare that they have no competing interest.

REFERENCES:

1. ul Hasan S, Arshad S, Naru M H, Tahir S H, Afzal L.Iqbal M S. Assessment of hygienic practices of street food vendors serving in lahore. *Proceeding SZPGMI Vol*, 2016; 30(1): 7-13.
2. Mukherjee S, Mondal T K, De A, Misra R.Pal A. Knowledge, attitude and practice of food hygiene among street food vendors near a tertiary care hospital in kolkata, india. *International Journal Of Community Medicine And Public Health*, 2018; 5(3): 1206-1211.
3. Afolaranmi T O, Hassan Z I, Misari Z,. Food safety and hygiene practices among food vendors in tertiary hospitals in plateau state nigeria. *World Journal of Research and Review*, 5(1): 31-36.

4. Rahman M M, Arif M T, Bakar K.bt Talib Z. Food safety knowledge, attitude and hygiene practices among the street food vendors in northern kuching city, sarawak. *Borneo Science*, 2016; 31: 107-116.
5. Iwu A C, Uwakwe K A, Duru C B,. Knowledge, attitude and practices of food hygiene among food vendors in owerri, imo state, nigeria. *Occupational Diseases and Environmental Medicine*, 2017; 5(01): 11-25.
6. Khan M J A, Mian A M.Khurshid M S. Knowledge, attitude & practice among the food handlers of bahawal victoria hospital, bwp. *INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES*, 2018; 5(6): 6174-6179.
7. Ma L, Chen H, Yan H, Wu L.Zhang W. Food safety knowledge, attitudes, and behavior of street food vendors and consumers in handan, a third tier city in china. *BMC Public Health*, 2019; 19(1): 1128.
8. Alqurashi N A, Priyadarshini A.Jaiswal A K. Evaluating food safety knowledge and practices among foodservice staff in al madinah hospitals, saudi arabia. *Safety*, 2019; 5(1): 9.
9. Talat A, Jahanzeb M, Zahra N, (2018). Knowledge, Attitude and practice among food holders of QAMC and BVH Bahawalpur, 5(4), 200-208.
10. Singh AK, Singh NP, Chaturvedani Ak.(2018) Food safety anfd hygiene Practicess among street food vendors in Noida, Uttar Pradesh, India, 7(9), 2340-2347.

Annexures

FOOD SAFETY KNOWLEDGE AND PRACTICES AMONG FOOD VENDORS IN BAHAWAL VICTORIA HOSPITAL BAHAWALPUR

Name: _____ (optional)

1. What is your gender?
a) male b) female
2. What is your age?
a) <19 years b) 20-40 years c) 41-60years d) >60years
3. What is your educational status?
a) Illiterate b) primary c) middle d) secondary e) Higher
4. What type of food do you sell?
a) Fast food b) meals c) fruit juices d) tea
5. Since how long are you selling this food?
a) <5 years b) >5 years

Knowledge of Food Vendors/handlers

6. Do you believe in proper hand washing before eating, while cooking handling food and after using toilet?
a) Agree (3) b) disagree (1) c) don't know (2)
7. How you protect the prepared food from contamination by house flies and dust/
a) By covering it (3) b) don't protect it (1) c) by other means (2)
8. Do you think that contaminated hands and water can cause transmission of disease?
a) Agree (3) b) disagree (1) c) don't know (2)
9. Where should the prepared food be stored?
a) Refrigerators (3) b) some cool place (2) c) any place (1)
10. At what temperature should the prepared food be stored?
a) 4 C°(3) b) below 0° C(1) Don't know(1)
11. Do you think that raw and cooked food should be stored separately?
a) Agree (3) b) disagree (1) c) don't know (2)
12. Do you think that loose motion and vomiting are symptoms of food-borne illness?
a) Agree (3) b) disagree (1) c) don't know (2)
13. Do you think that cholera (diarrhea) and typhoid are food borne disease?
a) Agree (3) b) disagree (1) c) don't know (2)

Scoring:

Good knowledge: 13-24

Poor knowledge: 1-12

PRACTICE OF FOOD HANDLERS

14. Do you wash your hands during food preparation?
a) Yes (2) b) No (1)
15. Do you check expiry dates of products before food preparation?
a) Yes (2) b) No (1)
16. Do you cover cuts and wounds on hands while handling food?
a) Yes (2) b) No (1)
17. Do you avoid sneezing and coughing over food?
a) Yes (2) b) No (1)
18. Do you protect food from flies, rodents and dust?
a) Yes (2) b) No (1)

Scoring:

Good practice: 6-10

Poor practice: 1-5