# KNOWLEDGE AND PRACTICES OF STREET FOOD HANDLERS AMONG BARI IMAM COMMUNITY

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ABSTRACT

**Background:** Street food includes the foods, snacks, and beverages prepared in street and public areas. Some street foods are "ready to serve" while others are prepared as per demand of customer.Most of the street food handlers in Bari Imam Community do not have enough knowledge about healthy food handling practices.

**Methodology:** A descriptive, cross-sectional study was conducted in Bari Imam Community among 60 street food handlers. A structured questionnaire was used for assessing food handlers' knowledge, attitudes and practices. Overall, 31 questions were asked to determine hygiene and food handling practices among food handlers.

**Results:** The results show there is correlation between the hand washing practices among the educated and uneducated vendors before cooking. The vendors at metric level have more awareness about hand washing practices. Out of 60 participants 57 were maintaining hygienic practices before cooking while 3 were not. The hand washing ratio of matriculated is 31.6% while 68.3% are others. Similarly out of 60 participants 22 are aware of food contamination and diseases while 38 are not aware of this. The ratio includes 36.6% are aware and 63.3 are not aware of contamination of food and diseases. Out of 60 participants 9 were using caps and gloves while 51 participants were not using. The percentage shows a huge difference between the vendors' i.e 15% for yes and 85% for no.

The results reveals that the participants were 60 out of which only 24 participants were using gloves while handling food and 36 were not using. 40% of the participants are using and 60% stated that they are not using.

**Conclusion:** Street food handlers in Bari Imam community were assessed in this study regarding their food handling practices. It revealed that most street food makers lack knowledge about food and they have not received any kind of food safety training. Government and policy making organizations should pay attention to improve safety of street food.

**Keywords:** Street Food, Street Food Handling, Street Food Hygiene.

## INTRODUCTION

Food and Agricultural Organization defines Street food as 'ready-to-eat food and beverages prepared prepared and/or sold by vendors, especially in streets and other similar public places'. Street foods are usually low priced as compared to foods served in restaurants [1]. The only drawback of street food is that it falls under the category of junk food. A large part of junk food doesn't contain any nutritional or health benefits. Street food venders are the actual figures who have a significant impact on the food safety and can prevent food contamination throughout food supply chain [2].

A major part of population all around the world consumes street food daily, making it a handy diet for many individuals in developing nations. This consumption significantly boosts the economy and supports the livelihood of millions of people who live in poverty [3].

Most street food handlers are frequently less or uneducated and lack sufficient knowledge.

Multiple factors like personal hygiene, resources availability, cultural characteristics, vending experiences and vending environment can have profound effect on safe food handling practices. Factors like improper food handling, poor sanitation and lack of running water etc. are much linked food borne diseases [4]. Majority of the street food handlers have not received any kind of food safety training. In some developing countries, street food has been associated with outbreaks of food borne diseases [5].

In Pakistan, during recent years there is an increasing trend in the sale and consumption of street food [6]. Mostly street food is consumed in urban areas of Pakistan due to unemployment and limited work opportunities. That's why people preparing these street foods have limited knowledge about food safety and hygiene practices. Lack of knowledge about personal hygiene, workplace sanitation, uncovered food and food display were a few contributing factors towards public health risk. In Bari Imam Community, there is high trend of street food consumption and sale. Most of the food handlers are not educated enough and

haven't received any kind of food safety training from Food Authority Organizations. Due to this reason, there is poor food handling and distributing practices.

In developing countries many people use street food. 2.5 billion people consume street food worldwide in routine. Because of their busy work schedules most of the population is dependent on street foods as they spent very little time in their homes [7]. Secondly street foods are easily available, relatively less expensive and offer a variety of foods to the consumers. Unemployment and poverty are the major factors which influence the people to get into street food business as minimal resources are required to set up. Therefore worldwide street food industry is growing in a very fast speed [8].

Food safety and hygienic conditions have been ignored since long here in Pakistan, therefore food borne disease are common here. Lake of effective infection control programs in Pakistan made the task to estimate food borne disease burden even tougher [9]. To ensure safety of the food street is an important public health priority. Street food venders and consumers must be aware of the basic food safety principles and measures. In addition monitoring of street food regulations, institutional efforts and interventions and involving all the stakeholders are essential to accomplish street food safety initiatives.

Various factors like unsuitable temperature, inappropriate time interval, weather condition, unhygienic activities, food stuff from insecure origins, unacceptable handling of foods, poor self-cleanliness, improper cleaning of cooking materials, using untreated water, and improper food storage are the main causes of food borne diseases [10]. Study abroad indicated that food handling practices among food handlers were very poor [11].

Poor personal hygiene and practices of food handlers in the developing countries is due to the poor implementation of food safety regulations, hence food safety standards are not strictly followed. Increasing global population, risk of food borne diseases is very high. So conduction of a food safety survey in developing countries is essential to assess the food safety conditions in restaurants and to propose suitable remedial measures for improvement.

World Health Organization (WHO) (2015) claimed that about two million incurable cases of food poisoning is adding to the prevalent scenario annually in industrialized nations. WHO further estimated that 600 million food-borne diseases each year were related to poor food safety and hygiene practices with 420,000 deaths. [12]. According to WHO 2015 report, food-borne diseases affect more than 1/3 of the total population in developing countries each year. Risky food preparation and handling by Street food vendors have made food safety concern for public health. Most individuals nowadays have their meals outside their homes, which are vulnerable to disease caused by contaminated food [13]. Furthermore, food safety is not prioritized in developing countries; consequently, millions of people get sick, and hundreds of thousands die from consuming food that is unsafe [14].

Ramful (2017) reported that good hygiene practices ensure the safety food handlers and consumers. Good hygiene practices include head covering, appropriate footwear, regular hand washing, frequent glove changes, no jewellery, watches, or any other items in the food handling areas. Despite good knowledge, attitude, and self-reported practices, there may be poor performance in hygiene and food safety practices [15]. Clean street-food clubs should be encouraged as one mechanism to recognize street vendors' needs and to learn from consumers' demands, so that the awareness of street-food vendors towards food safety standards is strengthened [16,17].

The participants' rights were taken into account. Participant engagement was entirely voluntary. The participants also had the option to participate voluntarily, decline, withdraw, maintain confidentiality, and ask questions. People who refused to provide information were kept safe from coercion, physical damage, and financial incentives. They were also not compelled. The participants were given an informed consent form so they could understand the objectives and advantages. Additionally, confidentiality was upheld during data collection. Data from all participants was guaranteed to be hidden under the right to anonymity.

## METHODOLOGY:

For this study, we used a cross-sectional conventional study design; a sample of 60 individuals from the streets of Bari Imam Community located in Islamabad, Pakistan was taken. The sample was selected to be 60 participants. Openepi.com was used to calculate the sample size. For the research data bases Google scholar, CINAHL and Pub Med were used. A consent form and questionnaire for the interview was developed by our group and finalized by the faculty at Shifa College of Nursing, Shifa Tameer-e-Millat University, few modifications were given according to which the questionnaire was modified. The consent form was developed following the guidelines mentioned in Polit and Beck, Edition 10, 2021. The consent form was written in English at first, then it was translated and printed in Urdu, as it was the language of the target population. Before the interview the participants were asked to sign the consent. Questionnaires were developed, which were modified from a tool developed by Letuka [18]. Formal permission for tool use was taken via email. The validity of the tool was checked by Pilot Testing. It was a structured questionnaire.

Interviewer administered tool consisting of close ended questions, the participants were given options for their answers. No Jargon's were mentioned in the questionnaire. All participants answered all the components given in the questionnaire. The interview did not take more than 10 minutes, the expected interventions were explained to the participants. No false assurances given. The participants were all above 17 years in age.

Pilot testing was done before taking final data collections.15 participants were involved in Pilot testing after which questionnaire was modified. After selection of final questionnaire, we have taken the data of 60 participants. A questionnaire consists of 31 questions. It was divided into three parts first part was about consent form the second was about demographic data and the third part include questions that were about assessment of knowledge and practice of street food handlers in Bari Imam Community.

The statistical analysis was performed by using SPSS version 25. The descriptive statistical analysis was utilized for computing this study mean finding, percentages, and frequency.

The data was collected via questionnaire developed by the team. It was a convenient sample. Chi-square test was applied by using cross-tabulation. The two variables are correlated with each other and the significant and non-significant results were identified.

## RESULTS

Comparison of duration of street food selling and the knowledge about food safety practices

Result showed that street food workers having work experience more than 5 years have good practices of street food handling as compare to those who has work experience less than 5 years (Figure 1). Out of 60 participants 27 have knowledge about food safety practices while 33 do not have knowledge. So, the ratio of food safety practices among the vendors have knowledge is 45% and those who do not have knowledge is 55% (Table 1).

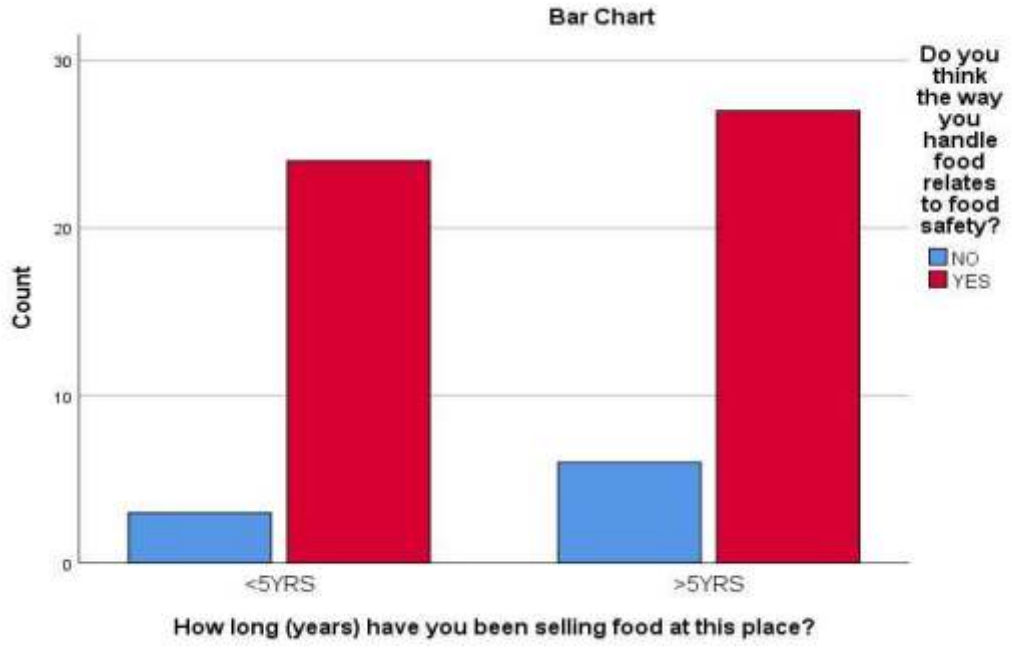


**Figure 1:** Shown are the bar chart which revealed the correlation between the works less than and more than 5 years selling food. The one having work experience more than 5 years have good practices of street food handling as compare to those who has work experience less than 5 years.

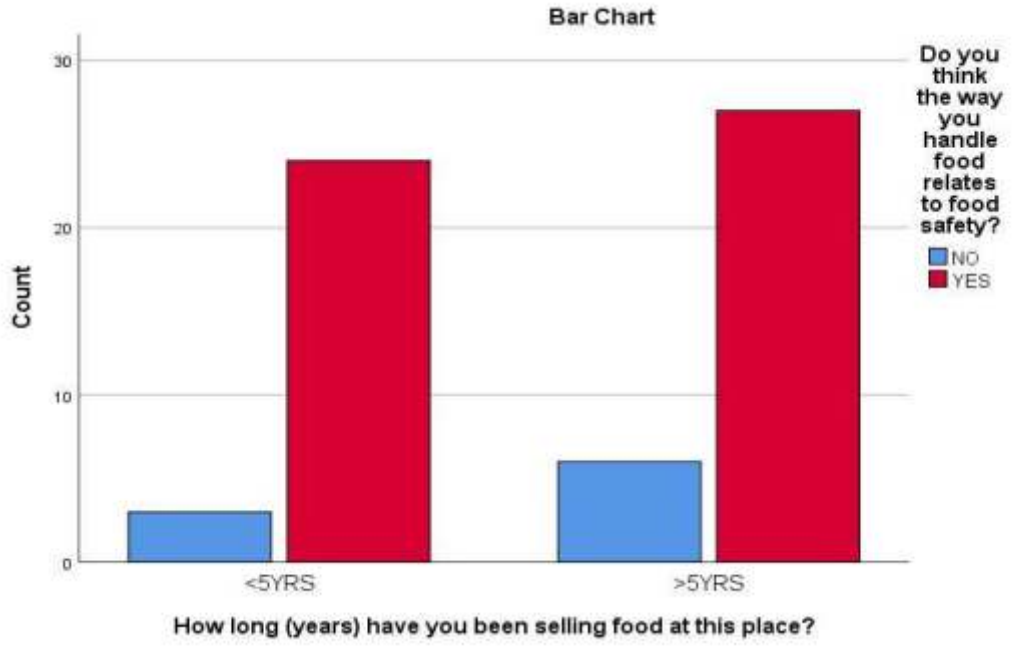


**Figure 1:** Shown are the bar chart which revealed the correlation between the works less than and more than 5 years selling food. The one having work experience more than 5 years have good practices of street food handling as compare to those who has work experience less than 5 years.

**Table No.1: comparison of street food selling duration to the knowledge of food safety.**

| | | Do you think the way you handle food relates to food safety? | | |
|---|---|---|---|---|
| **How long (years) have you been selling food at this place?** | | **No** | **Yes** | **Total** |
| | **<5 Years** | **3** | **24** | **27** |
| | **>5 Years** | **6** | **27** | **33** |
| **Total** | | **9** | **51** | **60** |

**Comparison of education level with observation of the safe food practices:**

Correlation between the hand washing practices among the educated and uneducated vendors before cooking were observed. The vendors at matric level have more awareness about hand washing practices (Figure 2). The results reveaedl that out of 60 participants 57 were maintaining hygienic practices before cooking while 3 were not. The hand washing ratio of matriculated is 31.6% while 68.3% are others (Table 2).

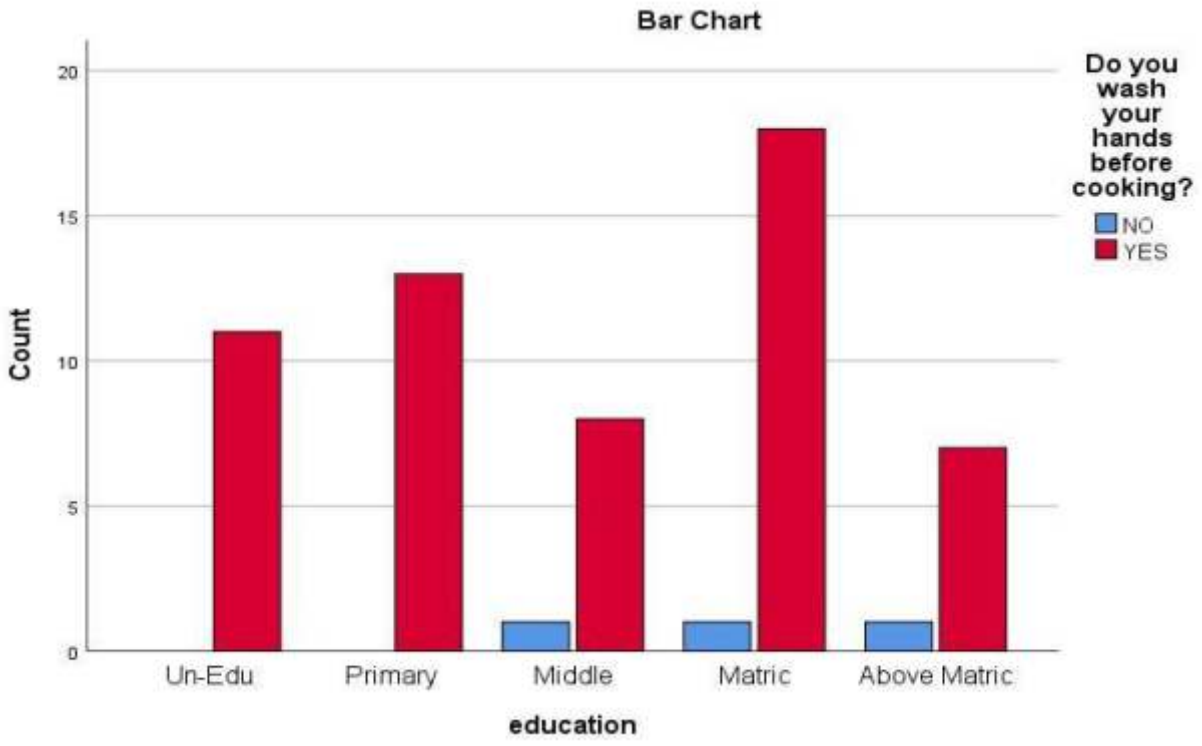


**Figure 2:** Shown are the bar charts which revealed the correlation between the hand washing practices among the educated and uneducated vendors before cooking. The vendors at matric level have more awareness about hand washing practices.

**Table No.2: comparison of Venders' education level to the observation of safe food practices.**

| | | Do you wash your hands before cooking? | | |
|---|---|---|---|---|
| **Food street venders' education level** | | **No** | **Yes** | **Total** |
| | **Uneducated** | **0** | **11** | **11** |
| | **Primary** | **0** | **13** | **13** |
| | **Middle** | **0** | **8** | **8** |
| | **Matric** | **1** | **18** | **19** |
| | **Above Matric** | **1** | **8** | **9** |
| **Total** | | **2** | **58** | **60** |

**Comparison of food street venders' knowledge level about food contamination and diseases:**

Correlation between knowledge and practices of contamination of food and diseases caused by contaminated foods was observed. Vendors who have less knowledge about the contamination of food have less knowledge about diseases caused by contaminated food (Figure no. 3). The results revealed that out of 60 participants 22 are aware of food contamination and diseases while 38 are not aware of this. The ratio includes 36.6% are aware and 63.3 are not aware of contamination of food and diseases (Table 3).

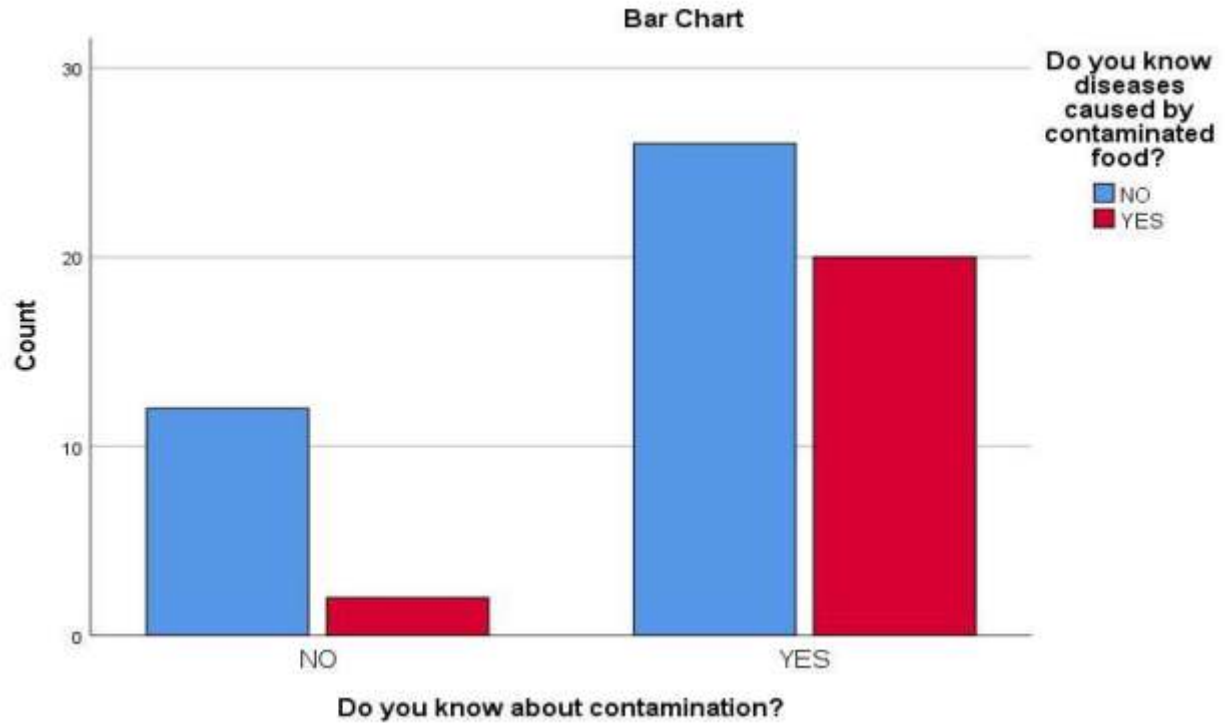


**Figure 3:** Shown are the bar charts which revealed the correlation between contamination of food and diseases caused by contaminated foods. The bars shows that the vendors who have less knowledge about the contamination of food have less knowledge about diseases caused by contaminated food.

**Table No.3: Comparison of street food Venders' knowledge about food contamination and diseases caused by contaminated foods.**

| | | Do you know diseases caused by contaminated food? | | |
|---|---|---|---|---|
| Do you know diseases caused by contaminated food? | | No | Yes | Total |
| | No | 12 | 2 | 14 |
| | Yes | 26 | 20 | 46 |
| Total | | 38 | 22 | 60 |

**Comparison of observing various safe food practices by food street venders:**

Comparison of vendors' waring Caps, Masks and Gloves while cooking or handling food was observed. Result showed that majority of the street food vendors don't wear cap, masks and gloves while cooking (Figure 4). Out of 60 participants 9 were using caps and gloves while 51 participants were not using. The percentage showed a huge difference between the vendors' i.e 15% for Yes and 85% for No (Table 4).

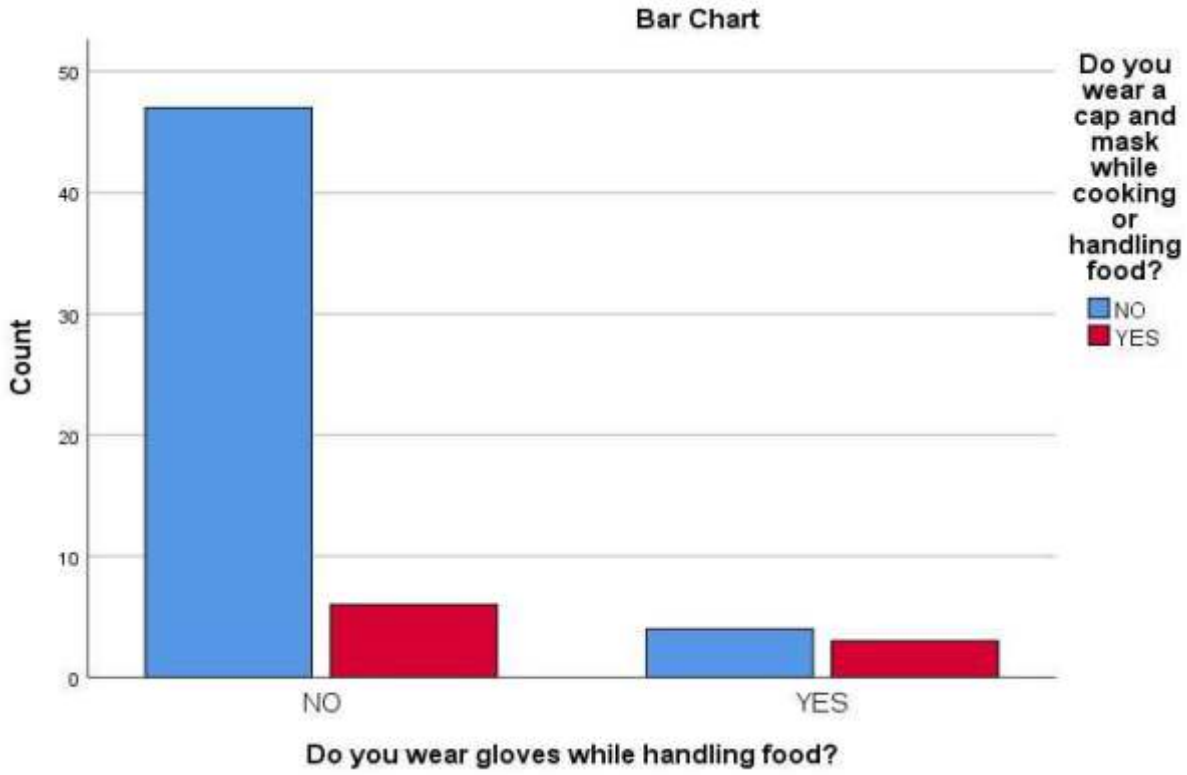


**Figure 4:** Shown are the bar charts which revealed the relationship between the vendors waring caps, masks and gloves while cooking or handling food. The bar shows that people don't wear cap, masks and gloves while cooking.

**Table No.4: Comparison of street food Venders' observing safe food practices.**

| | | Do you wear gloves while handling food? | | |
|---|---|---|---|---|
| **Do you wear a cap and mask while cooking or handling food?** | | **No** | **Yes** | **Total** |
| | **No** | **47** | **6** | **53** |
| | **Yes** | **4** | **3** | **7** |
| **Total** | | **51** | **9** | **60** |

**Comparison of observing various safe food practices by food street venders while handling street food:**

Correlation between the use of gloves and apron while cooking or handling food was observed. Majority of people do not use or wear gloves and apron while cooking food (Figure 5). Results revealed that the participants were 60 out of which only 24 participants were using gloves while handling food and 36 were not using. 40% of the participants are using and 60% stated that they are not using (Table 5).

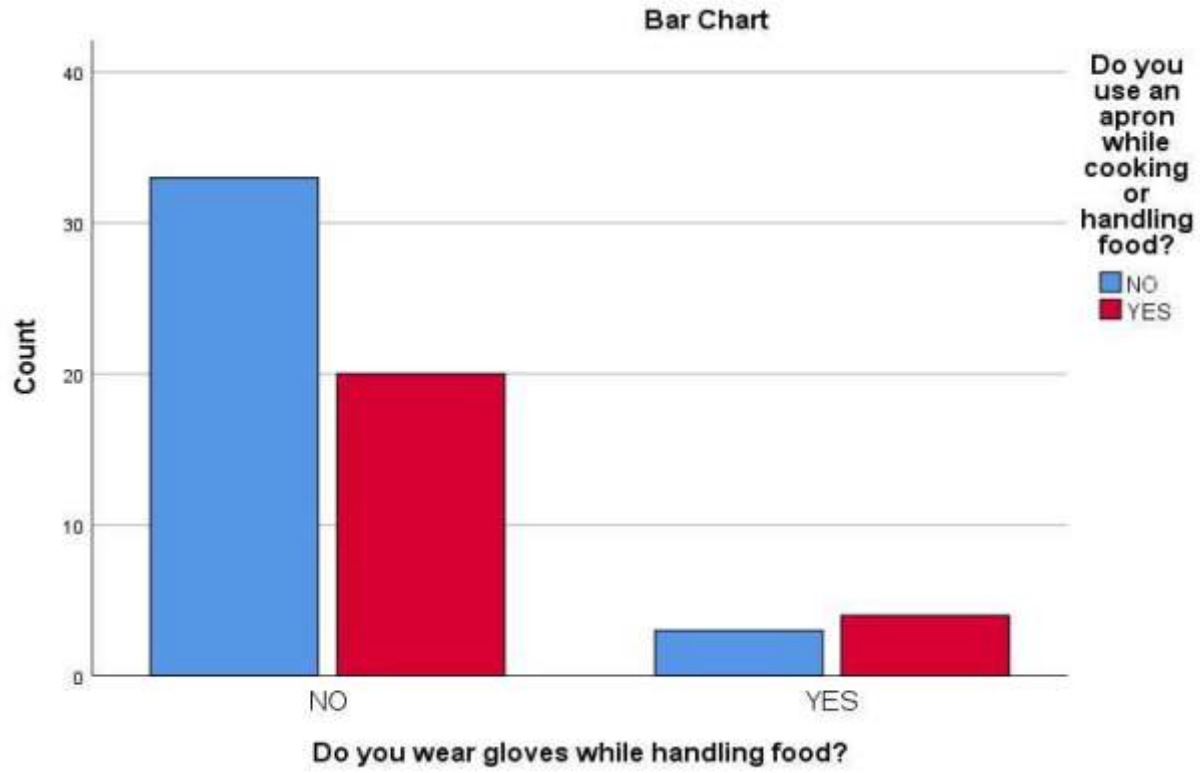


**Figure 5:** Shown are the bar charts which revealed the correlation between the use of gloves and apron while cooking or handling food. The bar shows that majority of people not using or wearing gloves and apron while cooking food.

**Table No.5: Comparison of street food Venders' observing safe food practices while handling street food.**

| | | Do you use an apron while cooking or handling food? | | |
|---|---|---|---|---|
| | | **No** | **Yes** | **Total** |
| **Do you wear gloves while handling food?** | **No** | **33** | **20** | **53** |
| | **Yes** | **3** | **4** | **7** |
| **Total** | | **36** | **24** | **60** |

## DISCUSSION

This study shows mostly participants are unaware of food safety knowledge and practices of food handling methods. The surrounding of most stalls is unhygienic. Most of the shops were built on road side, dust and smoke from traffic vehicles were major source of food contamination. In rainy days, splashes of mud fell over the stalls and some of the foods are uncovered have seen in the Bari Imam Community area. The participants are usually seen preparing food with bare handed and also allowing their costumer to touch the uncovered food. Flies were sitting on uncover food. They also contain lack of knowledge about the safety of food. Their aim was just to sell their food items and earn money. Most of the participants didn't take any food safety sessions. Personnel hygiene practices were also not good. Some of the participants also told that they work even they are sick. The educational qualification is also affecting the target topic, the participants who are metric and above metric have better hygiene practices then those who are less educated.

After the collection of data, teaching plan and strategies were developed according to the needs and learning abilities of the target population. Participants were informed prior to the teaching implementation to avoid any kind of external interruption. Different materials were prepared for the teaching purpose by the mutual discussion of group members. Budget was also decided within the group and equally distributed among members. Teaching was provide on multiple topics including detailed handing washing, food contamination, food safety practices, and use of PPE. Personal Protective Equipment's were also prepared to distributed among the target study population. At end of the teaching session the participants were re-evaluated through questioning and re-demonstration. Sustainability was also checked after one week of teaching and it was observed that the participants were following the safe food handling instructions. PPE were also being used by the food handlers at the cooking as well as food serving areas. This study revealed that more work is needed related to safe street food handling in Pakistan. Proper training and guidance can be beneficial to street food handlers as well as its consumers.

Participants were cooperative and eager to learn. Due to strong group participations the data was collected within time and in smooth manner. Teaching was successful due to active participation of both learners and group members. Participants were willing to attend food safety training sessions in future.Time constrained because the data collection and implementation was done during the college hours and on specified days. Difficulty in controlling public at road side and their needless interruption due to noisy environment. The participants felt threatened that it will affect their business negatively. Participants were busy due to their peak working hours and had difficulty in paying attention. All participants were asking for incentives but this can not be done due to limited budget.

## CONCLUSION

Street foods play an important role in causing different food borne diseases. Street food handlers in Bari Imam community were assessed in this study regarding their food handling practices. The majority of the street food sellers did not exercise good hygiene. Both the educational background and income level were deemed inadequate. The environment where food was sold was in poor condition (dirty). Smoking was also not prohibited around kitchen area.

Awareness must be completed in a persistent way. Road food sellers ought to guarantee that the utensil and environmental elements ought to be slick and clean. Individual cleanliness of road food merchants ought to be completely observed to shield populace from irresistible infections. Their nails ought to appropriately be managed and hands ought to be liberated from bruises. Smoking is an evil propensity. It ought to be stayed away from particularly during preparing and serving food. Equipping food handlers with training on food safety and hygiene practices is crucial as this knowledge has a significant role in decreasing and hopefully avoiding food poisoning through production and distribution of safe food.

Future studies should also assess how the corona virus disease of 2019 (COVID-19) has affected food handlers' understanding of, adherence to, and attitudes towards, food safety. Government and policy making organizations should pay attention to improve safety of street food. This is highly recommended based on the findings of this research.

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