

Understanding Challenges Faced By Street Food Vendors to Maintain Street Food Hygiene in Dhaka City

Khan Redzwan Habib

World Health Organisation, Brisbane, Australia

Email address:

khan.redz@gmail.com, habibk@who.int

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Abstract: In many parts of the world, particularly in the developing countries, street food vending also makes an important contribution to employment, household revenue and food security. While street foods are an important source of ready-to-eat nutrition and provides low cost meal for the urban poor population, the health risks possessed by such foods may outweigh their benefits. Dhaka city is the capital of Bangladesh and is one of the most densely populated cities of the world. At present Dhaka is the residence of approximately 14 million people and it has been estimated that there are around 2 million street food vendors currently engaged in food vending in the city. A few published reports on street food vendors in Dhaka suggests poor microbial quality of street food and bear the risk of transmitting enteric disease in the communities. Therefore the aim of this study is to explore the challenges faced by the street food vendors to maintain food hygiene while vending in Dhaka city. Semi structured interview approach was chosen for its suitability for exploring attitudes, values, beliefs and motives. The street food vendors were first categorized into four categories based on the food item they sell. All 26 interviews were tape-recorded, transcribed and content analysis with inductive coding was used to code the transcribed interview data. Qualitative, inductive coding methods were used to explore the challenges faced by the street food vendors to maintain street food safety while vending in Dhaka city. The study revealed that lack of education, training and experience and lack of infrastructural support all together acts as major challenges for these street food vendors to ensure food safety while vending in Dhaka city. The interviewed street food vendors gave their opinion that proper training about safe food handling and proper financial and infrastructural support like loans for starting a business, fixing a site for the street food vendors in different places of the city with all sorts of support available like supply of purified water, proper toilet facility and proper garbage disposal might be helpful to overcome the challenges faced by them to maintain hygiene of the food sold by them.

Keywords: Street Food, Food Hygiene, Street Food Vendors, Street Food Hygiene

1. Introduction

In many parts of the world street food makes a great contribution to the informal food distribution sector. Along with meeting up the challenges to feed people from all socio-economic class particularly in the developing countries, street food vending also make an important contribution to employment, household revenue and food security.

Street food can be defined as ready to eat food or drink sold in the street or other public gathering places by a hawker or vendor often from a portable food booth/ cart or truck [1]. Street food show great variation in terms of ingredients, processing, methods of marketing and consumption. Street

foods usually reflect local cultures and exist in an endless variety encompassing meals, drinks and snacks. There is much diversity in terms of raw materials used as well as the method of preparation. In addition there is much diversity in the place where these foods are being prepared [2].

While street foods are an important source of ready-to-eat nutrition and provides low cost meal for the urban poor population, the health risks possessed by such foods may outweigh their benefits. By taking the advantage of poor monitoring and control street food particularly in developing countries often are prepared and sold in an unhygienic manner which is believed to be a major contributor to food and waterborne diseases. Poor knowledge about safe food handling practices along with lack of basic infrastructure to

ensure food hygiene is considered as a major public health risk particularly in developing countries [3].

As a part of global strategy to decrease the burden of food and waterborne diseases, WHO in 2006 came up with five key points to ensure food hygiene: keeping clean, separating raw and cooked food, cooking thoroughly, keeping food at safe temperatures and using safe water and raw materials. These five messages are developed in 87 languages based on scientific evidences to train up all types of food handlers starting from street food vendors to consumers. These key messages explain basic principles everyone should practice all over the world to prevent food and waterborne diseases [4]. That is why it is highly important for the street food vendors to know about WHO's five keys to safer food and comply with these messages as they provide food for a large number of populations in their community.

Dhaka city is the capital of Bangladesh and is one of the most densely populated cities of the world. World Bank has projected that by 2020 Dhaka city will be the residence for 20 million people which will make it the third largest city in the world [5]. At present Dhaka is the residence of approximately 14 million people and it has been estimated that there are around 2 million street food vendors currently engaged in food vending in the city [6].

Unlike formal job sectors, street food business requires no prior skills or legislation, and involves low investment for a start-up of the business [7]. Due to a large scale migration of rural people to urban areas street food vending has become a growing informal sector in the urban areas in many countries in Asia, including Dhaka. Street food vendors in Dhaka city are commonly found selling their food from small tea and food stalls on pavements or from baskets or push-carts mostly by mobile vendors. Majority of the street food vendors also do not even have primary education. Depending on the food product sold, vending site, vending time and number of customers these street food vendors make between 100 to 1000 taka per day (≈ 1.3 USD – 10.3 USD). This is quite a substantial income comparing to rickshaw pullers or factory workers or day-labourers but if someone looks at the criteria of housing, food expenditure and business profit it clearly shows that continuum of vending types is also a continuum of vulnerability. Among all street food vendors the mobile vendors earns even less. Some of the semi-permanent vendors among which 20 percent are women are also in a vulnerable position city [8].

Along with vulnerability of business and income, the street food vendors often are a subject to evictions and harassment. The small food stalls used for vending are mostly put up illegally and as there is no license for street food vendors in the country, they often face evictions from police or public institutions or by local powerful people. They often also have to cope with confiscation of their equipment or total displacement from vending site [9].

2. Related Works

A study conducted in Guatemala has shown that simple

interventions and logistics can significantly improve quality of street vended food. The study had modified WHO's five keys to safer food messages according to local needs to develop Behavioural Change Communication (BCC) materials to educate the street food vendors about food hygiene. The researchers had also provided logistical supports like narrow mouthed water jars for water preservation, hypochloride water purification tablets, soaps for hand washing to the local street food vendors. Mentioned BCC materials and logistical supports have shown that if provided with proper health education and infrastructure street food vendors can effectively maintain food hygiene [10].

The cost-benefit ratio between the impact of street food vending on economy and health impact of street food have been less well studied. A few published report on street food vendors in Dhaka suggests poor microbial quality of street food and the mobile vendors who are directly involved with vending the end product to the customers bear risk in transmitting enteric disease in the communities via consumption of street food [11-13]. In general, the environment in which street food is prepared, handled, catered, preserved and disposed is highly unhygienic. One main reason is that these vendors are mostly illiterate and barely possess any idea about food hygiene. Another aspect however, has to do with these vendors insecure situation. During eviction drives vendors' utensils, water containers are often destroyed. These evictions are thus not only random and inefficient as such but also further jeopardize food safety [14]. Studies conducted to determine food safety level for street vended food in Dhaka city has shown poor microbial quality of this type of food [13, 15-16]. Therefore, the aim of the study is to understand challenges faced by street food vendors in Dhaka city to ensure proper food hygiene.

3. Methods

Qualitative, inductive coding methods were used to conduct this study as this method aims to understand the thoughts and experiences of a particular group of people involved in a particular action [17]. The open codes those were identified were then analyzed, compared and grouped into categories. As there had been several studies focusing on street food safety, therefore there was always a chance of getting biased based on preconceived frame or hypothesis. Therefore, to gain a better understanding of the barriers faced by the street food vendors in a megacity of a developing country, the hypothesis of this study build up by collecting and generating data to build a new hypothesis.

Semi structured interview approach was chosen for its suitability for exploring attitudes, values, beliefs and motives [18]. The street food vendors were first categorized into four categories based on the food item they sell. These are: vendors who serve hot foods, vendors who serve food cold, vendors who serve pre-cut fruits or vegetables and vendors selling liquids or drinks. At first a total of 40 street food vendors were identified through stratified random sampling for recruitment among 7958 vendors' data available in

Institute of Governance studies of BRAC University. Later 6 vendors denied to be interviewed and 8 were not found in the address they were registered previously from Institute of Governance studies of BRAC University. Finally 26 street food vendors were recruited for this study. All 26 interviews of these vendors were audio-taped. The street food vendors were asked to describe their experiences regarding the barriers they face to maintain food hygiene while selling street food. Therefore, over a time of three month 7 vendors serving food hot, 5 vendors serving food cold, 7 vendors serving precut fruits or vegetables and 7 vendors selling different types of drinks, were recruited from different zones of both Dhaka South and Dhaka North city corporation.

A copy of an invitation letter were first shown and read to all potential interviewees. A participant information sheet was later issued and a consent form was either got signed or thumb printed. All these were written in Bengali but at the end of the study had been translated to English for better understanding of the readers all over the world. As most of these vendors cannot read or write, therefore the information sheet was read to them and as mentioned earlier thumb print instead of signatures were taken from several. The consent form and information sheet carried clear information about the study background and what the participants have to do if they decide to participate in the study. All the interviews were one to one interviews. The topic guide was developed based on the findings emerged from relevant literature. The key areas of concentration in the interviews are summarized in Box A.

Box A: Key areas of concentration in the interviews:

- i. Challenges faced due to socio-economic barriers:
 - a) Behavioral risk factors
 - b) Practice within the family
 - c) Inadequate capital
- ii. Challenges faced due to lack of knowledge:
 - a) Lack of education
 - b) Lack of experience in street food vending
- iii. Challenges faced due to lack of infrastructural support
- iv. Lack of monitoring and lack of guideline from the government regarding street food vending

What can be done to improve food safety practice among street food vendors.

All interviews with participant's consent were audio taped for further analysis and were disposed at the end of the study. Content analysis with inductive coding was used to code the transcribed interview data. Themes were reviewed and organized into large groupings from which the core themes had derived. The study received ethical approval from Bangladesh Medical Research Council (BMRC).

4. Results

A total of 26 interviews were conducted. All interviews conducted were face to face interviews. Among the 26 interviewees 7 vendors serves food hot, 5 vendors serves food cold, 7 vendors serves precut fruits or vegetables and 7 vendors sell different types of drinks. Out of 26 interviewees

2 were female. An over view of the participants are given in table 1. To maintain anonymity all participants were assigned with two identification letters for each: vendors serving food hot were denoted 'SH'; vendors serving food cold were denoted 'SC'; vendors serving precut fruits or vegetables were denoted 'SP' and vendors serving drinks or other juice or other liquids were denoted 'SL'. Numbering of the individual participants was done chronologically depending on the interview date. An over view on the interviewed street food vendors are presented in table 1.

Table 1. Overview of street food vendors.

Participant code	Type of Vended Food	Customers served per Day	Income/ day (in dollars)
SH1	Parotta & Curry	100-120	≈35
SH2	Tea	100-150	≈19
SH3	Boiled Eggs	50-60	≈6
SH4	Pancake	40-50	≈7
SH5	Pitha (locally made cakes)	60-70	≈6
SH6	Khichdi	100-150	≈33
SH7	Haleem	70-80	≈28
SC1	Panipuri	50-60	≈6
SC2	Spicy puffed rice	50-60	≈6
SC3	Sweet yogurt and flattened rice	50-60	≈6
SC4	Spicy Chola boot	50-60	≈6
SC5	Potato Fritter	100-150	≈19
SP1	Precut Pineapple	50-60	≈6
SP2	Precut Papaya	70-80	≈9
SP3	Precut Pineapple	70-80	≈6
SP4	Precut Guava	50-60	≈6
SP5	Precut Cucumber	30-50	≈6
SP6	Precut Pomelo	50-60	≈7
SP7	Precut Cucumber	50-60	≈6
SL1	Fruit juice	70-80	≈9
SL2	Lemon juice	80-100	≈11
SL3	Herbal juice	50-60	≈6
SL4	Lemon juice	100-120	≈13
SL5	Lemon juice	100-120	≈13
SL6	Fruit juice	80-100	≈11
SL7	Fruit juice	70-80	≈9

Five major themes emerged from the data regarding challenges faced by street food vendors in Dhaka city to ensure food hygiene. These are: behavioral risk factors, socio-demographic barriers, inadequate or no knowledge about food hygiene, lack of infrastructure and lack of law enforcement.

4.1. Key Findings About Street Food Vendors

Density of street food vendors vary in different parts of Dhaka city. Density of these vendors are more where there are parks, educational institutions specially schools, market areas and where there is density of office going people. Majority of the vendors are male, illiterate and migrants from rural areas of the country. An over view on experiences of the interviewed street food vendors in selling street food and their previous job categories are presented in table 2.

Table 2. Occupational history and educational background of interviewed street food vendors.

Participant code	Years of Experience (in months)	Previous occupation (if any)	Educational level
SH1	≈36	Electrician	Elementary level
SH2	≈72	Welder	Below Elementary level
SH3	≈18	Garment worker	Elementary level
SH4	≈24	Day laborer	Never went to school
SH5	7	Restaurant waiter	Below elementary level
SH6	≈60	Bus helper	Below Elementary level
SH7	≈48	Garment worker	Elementary level
SC1	≈36	Bus helper	Below Elementary level
SC2	≈24	Bus helper	Elementary level
SC3	≈24	Fruit seller	Below Elementary level
SC4	≈24	Day laborer	Never went to school
SC5	≈60	Farmer	Never went to school
SP1	≈12	Bus helper	Elementary level
SP2	≈12	Rickshaw puller	Never went to school
SP3	5-6	Restaurant waiter	Below Elementary level
SP4	≈18	Fruit seller	Below Elementary level
SP5	≈12	Restaurant waiter	Below Elementary level
SP6	≈24	Rickshaw puller	Below Elementary level
SP7	6	Bus helper	Elementary level
SL1	24	Rickshaw puller	Never went to school
SL2	≈12	Garment worker	Elementary level
SL3	7-8	Day laborer	Never went to school
SL4	6-7	Garment worker	Elementary level
SL5	≈18	Farmer	Never went to school
SL6	≈60	Street food vendor (Fruit juice)	Elementary level
SL7	5-6	Rickshaw puller	Below Elementary level

When asked about the reason for choosing street food vending as a profession majority of the vendors identified the need for minimum capital to start this business. As mentioned earlier majority of these vendors are migrants from rural areas and are very poor, therefore starting street food vending was the easiest way to pay the bills and the income somewhat satisfactory, “...to set up a tea stall you need to pay a good amount of advance...I am poor so from where will I arrange this advance money...someone I knew told me, why don't you start selling Bombay mix...You won't need much capital for this and you will survive somehow with your family, so since then I have been selling these cookies on the street” (SC3).

Most of the street food vendors interviewed were introduced to this business through their relatives or friends or through previous connections. All the vendors interviewed were engaged in some other professions before starting this business, e.g. grocer, garments worker, hotel boy, daily wage labour etc.

Collecting time for raw materials for preparation of street food varies from previous night of vending till the next evening after the end of vending. Raw materials are either collected by the vendors themselves or their relatives or by their helping hands or are sometimes delivered to their vending place by sellers who sell these raw materials. Many of the street food vendors have helping hands or often the family members help in preparation of food.

Majority of these vendors prepare food in the place of vending though some are found to prepare food at home and bring it to the vending location to sell. Busiest selling time varies depending on the vending food type (e.g. Precut fruits are mostly sold in the early morning before the office starts

or after office hours and ‘Khichdi’ mostly is sold at lunch time). Consumers of street food vary from office staffs, students, surrounding shop owners to rickshaw or van pullers.

Most of these vendors use water in every step of food preparation and provide drinking water for the consumers as well. Water almost always is collected from Dhaka WASA (Water Supply & Sewerage Authority) supply; some also keeps ‘blue jars’ especially for drinking purpose. These are sealed jars carrying purified water. Amount of water used by the vendors varies from 25 to 160 liters. Using paper for serving is very much common among street food vendors. Some provides food directly on paper or puts paper on their plastic plates.

4.2. Challenges Faced by the Street Food Vendors to Maintain Hygiene of the Food They Sell

The interviews revealed that a number of the interviewed street food vendors do not practice food hygiene in their own family. Same goes with the use of purified water though half of the vendors drink purified water at home. Use of WASA supply water is common among most of the street food vendors and in their family as well, “...we drink supply water at home, I boil it in my family, the problem is my wife has to wait for a while in the line to collect water; some days the water doesn't come, so then I buy blue jars (contains purified water and are locally sold by certain vendors)...” (SP5).

For some of the interviewed vendors, they live in mess house where there is lack of facility to purify water or use kitchen, therefore, it is beyond their ability to ensure water and food safety and hygiene. Similar scenario was found

regarding hand washing practice with soap after using toilets. Though a good number of vendors have hand washing practice with soap after using toilet in the family, in case of the rest this is not being practiced in the family either. While in the street vending food none of the vendors uses soap after using toilet, *"I am on the street the whole day, there is barely any public toilet and even if there is one you will never find a soap to wash hands after using toilet...I can't carry soap in my pocket all the time and if I have one in my shop it gets stolen...restaurants also do not let us use their toilets..."* (SP3).

Among the street food vendors who use supply water for drinking, many are found not to purify this WASA supply water. For reason many are found to believe that WASA supply water does not need purification. Few even mentioned that drinking water does not need purification.

Regarding hand-washing practice with soap before eating almost half of the street food vendors interviewed stated that they do not wash hand with soap before eating even at home. Alarming none of the vendors were found to wash hands before or after food preparation or serving or after handling money as well, *"...customers do not like to wait...sometimes there are too many customers I have to serve at the same time...if I wash hand every time I serve food it will be a wastage of time and my customers will go to some other vendor, I will lose customers"* (SH4).

Another major risk factor identified among the interviewed vendors is the use of paper or polybags. Almost all the vendors were found to serve street food on paper or paper made 'Thonga' or polybags. Vendors using plastic plates for serving food are often found to put paper on these plates.

A very common practice is using same unclean towel to clean the shop, clean utensils or even to clean hands. Also almost all the vendors were found to store garbage either on the cart or in polybags or in an uncovered bin nearby. In most cases this garbage is either disposed on the street beside the vending place or at times in the municipality garbage bin though on very rare occasions it was found that garbage is collected and disposed by city corporation garbage cleaners.

The most common practice is keeping a bowl containing just water or on rare occasions water mixed with detergent. The vendors who usually serves food on plastic plates uses this same water preserved in the bowl over and over again to clean their utensils, *"...I am cleaning the plates, right? So what is the problem I clean it in water preserved in bowl or running water?... Also where will I keep so much water or find a tap?"* (SH6).

Keeping the food covered is barely practiced among all type of vendors. Though few of them seem to know that uncovered food harbor flies or other insects and this can cause illness among the customers but they either seem not to care much about it or knows about it, *"...if the customers cannot see the food as its covered they feel suspicious and my sell will fall..."* (SC3)

Also the vendors who sell cooked food are found to prepare it early in the morning. None of these vendors reheat these foods for the entire day and do not know that food must

be reheated if kept in room temperature for more than 2 hours. But interestingly one rule ensuring food hygiene all the vendors (for whom it is applicable) follows and that is separating raw and cooked food and also separating meat and vegetable. They do not know about this rule but this is one practice that is found among the street food vendors.

4.3. Reasons for These Challenges to Persist

The interviewees identified reasons like lack of infrastructure, lack of support from the government or their lack of knowledge on food safety as major challenges in the way of ensuring street food hygiene. Most of the street food vendors interviewed, they were the sole earning members of the family, which made it harder for them to spend money to ensure food hygiene even if they wanted. Educational level for majority of the vendors interviewed were below primary level, therefore, had lack in knowledge of food safety or hygiene.

WHO five keys to safer food guideline encourages to wash utensils under running water with soap or detergent yet none of the street food vendors interviewed were found to practice or knew about this. There are no fixed sites for the street food vendors in Dhaka city. Though some has their fixed shops yet many of these vendors roam around in the street and sell their food. When asked about toilet use while vending one vendor simply put it this way, *"...it's easy to say, use toilet properly and wash hands with soap after using toilet but have you ever used a public toilet?...while on the street there are no public toilets and if there is one, there are you will never find soap..."* (SL4). Same scenario was narrated by majority of the street food vendors interviewed when asked about cleaning their utensils with soap and under running water.

A few vendors themselves have mentioned lack of law enforcement in this sector for the mentioned challenges to persist, *"...police regularly takes bribe for letting us sit here ...police is not the only one I have to bribe, local leaders even the office guards take money from me to let me vend in this spot..."* (SH2).

When asked about taking a license from the government if arranged more than half of the interviewed street food vendors were not willing to take one as they think for such a small business a license is not required or they have to pay tax if they take a license. Even the vendors who were willing to take a license said it will be a long process and expressed their concern that they might even have to pay bribe to get one.

Most of the interviewed vendors agreed that proper education about food safety can solve majority of the challenges faced while street food vending. They all agreed that their lack of education at any level has a lot to do with their lack of knowledge about food hygiene. Majority of the street food vendors interviewed barely can write their own names. When asked about their willingness to attend any sort of training regarding food safety many of the interviewed vendors seemed interested, though they mentioned it will be good if these sorts of trainings are arranged on weekends or on days when they are free. They also mentioned that if they

get some financial help like reimbursement of vehicle fair or the amount of money they lose by not vending during the training period will also help and will make many vendors interested to take part in these sorts of food safety education.

Some of the vendors suggested fixing a place for them where they can sit every day and sell, *"...suppose the government fixes a spot for me where no one will bother me every day and arrange everything (indicating towards logistical supports like supply of purified water and proper garbage disposal) it gets a lot easier to keep my vended food safe and healthy..." (SH2).*

5. Discussion

Participants in the study have identified several challenges faced by the street food vendors to ensure food hygiene in Dhaka city. There are no informed policy guidelines for the street food vendors and to maintain food safety for the street vended food in Bangladesh at this moment. Though no prior study conducted in this field in Bangladesh was not identified or studies conducted in other parts of the world though might not have focused in this specific area but findings in many of these studies somewhat indicates towards the findings of this research.

Socio-demographic characteristics of the street food vendors play a vital role in their choosing this profession as well as have a major influence on their ever day practice regarding food hygiene. Interviews of many of the study participants revealed that they are mostly from poor socio-economic class and has significant lack of education. Most of the interviewed street food vendors barely can even read or write and did not cross primary-level education. They are mostly migrants from rural areas and came to Dhaka city in search of work. Lack of education can therefore be identified as the major barrier for these street food vendors to ensure food hygiene. Due to their lack of knowledge about food safety neither they know how to ensure it nor know how harmful it is for the health of the customers they serve and for their family as well.

Although some vendors are engaged in street food vending for years they do not possess knowledge about food hygiene and how to maintain it. All the interviewed street food vendors were introduced to this profession through their friends or relatives therefore neither have experience nor have the knowledge of food safety. The study has revealed that majority of these vendors actually chose this profession as this requires less capital and provides them with a way to pay their bills. Their lack of education as well as lack of knowledge about food hygiene along with their lack of experience in this sector all together can be identified as the significant most challenge in their way of maintaining food hygiene.

Among other challenges in the way of ensuring food safety by the street food vendors, use of supply water for drinking is most significant. In Bangladesh unlike many other developed countries supply water is not fit for drinking purpose. A study conducted in 2011 found significant presence of *E. coli* in

WASA supply. The total count of coliform and *E. coli* ranged from <1.8(MPN)/100ml to >1600(MPN)/100ml. This result for total viable count (TVC) showed that 62% samples of house tap water, 60% samples of pipeline water and 45.45% of WASA pump water exceeded the local standards and WHO guideline for drinking [19]. This study revealed use of WASA supply water for drinking, cooking and cleaning purpose. As there is no fixed site for street food vending and no support from the government to ensure supply of purified water to these vendors, use of supply water for all purpose remains as a significant health risk. This is often a challenge due to ignorance of the street food vendors about health risks related to drinking unsafe water as many are found to drink supply water in family and for some they do not have the opportunity to purify water even if they are willing to as they live in mess houses. Some of the vendors who vends at a relatively site meaning they are not mobile and vends at the same place every day, are found to use 'blue jars' for purified water. These are locally available carrying purified water though its reliability is questionable.

Another important issue is that many of the interviewed street food vendors do not practice hand washing with soap after using toilet even in their family. Also during vending time there is real shortage of public toilets in the city. Therefore they usually do this in the street and have no access to soap or hand wash. Also many of them stated that even if they had tried to carry soap with them previously, it either gets stolen or makes their pockets wet. The interviewed vendors also do not practice hand wash before eating in their family or while they prepare or before serving food to the customers. One important finding of the study was money handling practice of the interviewed street food vendors. Many previous studies have shown that money is a source or germ transmission [19-20]. Therefore, it is recommended to wash hands after handling money. But alarmingly none of the interviewed vendors neither has this in practice nor knows about this. The interviewees though indicated customers' impatience for not being able to wash hands frequently and observation supported this fact though not often but sometimes.

Many of the interviewed street food vendors other than those who sell drinks or fruit juices, were found to serve food on newspaper made bags or on small pieces of newspaper. Rarely some vendors were found to serve food on tissue papers or in small polybags. But newspaper pieces or tissue paper or poly bags none are hygienic to serve food on as their source is unknown and mostly are preserved at home or stores on the floor. Tissue papers are also left open in shops. Therefore, newspaper pieces or tissue papers or polybags all are possible sources of food contamination. Some of the vendors pointed at customer requirements for using tissue papers or newspaper pieces or polybags for serving food though observations did not support this fact.

A common material to clean or wipe their shops are towels which are used by the interviewed vendors specially those who have carts or somewhat fix sites. These towels were almost always very dirty and some vendors who use plastic

plates to serve food are found to use the same towel to wipe these plates as well. There seems to be a significant gap in knowledge as these vendors think they are keeping their shops clean by wiping them but they are found to be completely ignorant about how using a same towel for every purpose is actually putting the whole process at risk.

It is recommended by WHO that utensils used for food preparation, preservation and serving must be cleaned with soap under running water [4]. The vendors who comparably vends in a fixed site are found to use a bowl full of water mixed with detergent for cleaning all the utensils. It has been observed during the interview that the same water is used over and over again for cleaning utensils. The interviewees were completely ignorant about this fact that this practice is wrong and sometimes pointed at their lack in infrastructural support to wash utensils under running water. They pointed at lack of infrastructural support again for their not being able to reheat the food they sell after every two hours as recommended by WHO in five keys to safer food guideline [4].

Along with these mentioned practices very few of the interviewed street food vendors were found to cover the food they sell. The reason behind this was sometimes interesting as the interviewees stated that the customers will not buy their food unless they can see what they are buying.

The interviewees had mixed views about taking a license for street food vending. Almost half of the interviewed vendors were not willing to take any license as they feel a license should not be essential for such a small scale business. Even those who were willing to take license hesitated thinking that it might be a long process and might have to spend money over bribery to get a license.

The study identified several challenges for the street food vendors in Dhaka city to ensure food safety. Some of the findings of the study might vary considering the place and time. Also hypothesis guessing by the interviewees might sometimes influence their activities and answers. Yet considering it all this is undeniable that street food plays an important role by providing food for impoverished citizens at a low cost but also provides employment for a large number of population. Yet due to lack of education, training and experience most of the street food vendors neither know about food safety nor take appropriate measures to keep their vended food free from contamination. Lack of infrastructural support also plays a vital role in this matter. The interviewed vendors seemed interested to receive training regarding how to ensure and maintain food hygiene. Behavior Change Communication materials like flip-charts might be helpful to educate the street food vendors as most of the interviewed vendors cannot read or write. It is important that the government takes responsibility to provide necessary financial and infrastructural support to the street food vendors to help them start such small business and maintain food hygiene. Fixing a site for the street food vendors in different places of the city with all sorts of support available like supply of purified water, proper toilet facility and proper garbage disposal might be helpful. Carts with all the facilities available to maintain food safety, might be helpful as well.

But the first and foremost issue to be addressed is to develop a locally adoptable guideline which all the vendors will follow and government need to ensure proper monitoring to ensure that the guideline is being followed. Introduction of reward for the street food vendors complying with the guideline might be of help. This study as undertaken in a mega city, finding of the study could be used in other big cities though as mentioned earlier results might vary depending on time and place. Though there are several challenges identified for the street food vendors to ensure food hygiene but it is anticipated that proper education about maintaining food safety, proper infrastructure and proper monitoring will help the street food vendors to ensure hygiene of the food sold by them.

6. Conclusion

The interviewed street food vendors gave their opinion that proper training about safe food handling and proper financial and infrastructural support like loans for starting a business, fixing a site for the street food vendors in different places of the city with all sorts of support available like supply of purified water, proper toilet facility and proper garbage disposal might be helpful to overcome the challenges faced by them to maintain hygiene of the food sold by them.

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