Street food on the coast of Salvador, Bahia, Brazil: A study from the socioeconomic and food safety perspectives

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Abstract

Street food includes various food items and drinks largely sold in public places, including leisure areas such as beaches. Despite the prevalence at this activity studies made within this scenario are few. Therefore, this study sought to characterize street food commercialization on the Salvador coast in Bahia, Brazil based on the socioeconomic, labor, and food safety perspectives. An exploratory and quantitative study was conducted on 14 beaches using questionnaires addressing the following areas: the socio-demographic characteristics of the food vendors, characteristics of the work, and hygienic and sanitary conditions of the activity. Our study included 247 food vendors with an average age of 40.3 years, of whom 55.9% were women, and 48.7% had completed an elementary education or less. The median time spent working in street food vending was nine years, and the average working day for the participants was 8.3 Furthermore, 46.2% of the participants worked only on weekends and 72.0% declared that their family income was between one and three times the minimum wage, of whom 29.1% had revenue from a source other than street food vending. Most of the vendor locations were fixed (57.5%), and the products sold were typically obtained from supermarkets (48.1%), suppliers (36.8%), and street markets (36.0%). Prepared food items were the most common (61.6%), although mineral water/soft drinks (35.8%) and beer (35.2%) were also commonly sold items, followed by acarajé (21.9%), coconut water (19.0%), fried fish (14.2%), and abará (12.5%). Only 38.3% of the perishable food items were kept in cooling containers. Of the interviewed individuals, 22.6% declared that they did not sanitize their hands when working, whereas 80.2% admitted to handling food and money simultaneously. Our study reveals the socioeconomic importance of the street food sector as well as the poor hygienic conditions of most street food vendor operations.

1. Introduction

World Health Organization (WHO, 1996) defines street food as foods and beverages prepared and/or sold by vendors in streets and other public places for immediate consumption or consumption at a later time without processing or preparation.

From the economic point of view, street food corresponds to the informal sector and has exhibited remarkable development in the last decades as a function of worldwide socioeconomic changes and the urbanization and population growth exhibited by some countries (Chukuezi, 2010a; Omemua & Aderoju, 2008; Rodrigues et al., 2003; WHO, 1996).

The significant socioeconomic influence of street food with respect to income and as a potential source of work, particularly for women, is widely acknowledged. Street food vending is also thought to make food available at affordable prices to low-income groups. Therefore, as a function of its low cost, street food represents an easily accessible nutritional and dietary option, based on the physical availability and social points of view (Cardoso, Santos, & Silva, 2009; Muzaffar, Huq, & Mallik, 2009).

Street food such as meals, beverages, and snacks exhibit a large variation in their ingredients, processing, selling methods, and consumption, which often reflect the local traditional culture. As a
function of convenience, street food provides an important fraction of the urban diet, particularly in developing countries (FAO, 2001; FAO, 2010).

Several studies on the sanitary quality of street food in Africa, Asia, and Latin America showed transmission of food pathogens (Abdallah & Mustafa, 2010; Costarica & Morón, 1996; Haryani et al., 2008; Kubheka, Mosupye, & Von Holy, 2001; Mahale, Khade, & Vaidya, 2008). As a function of the consequent public health risk, the United Nations Food and Agriculture Organization (FAO) and the WHO established international guidelines adapted to the various contexts based on feasibility to ensure the safety of street food that is sold and consumed (FAO, 2010).

Among the various settings of the street food business in Brazil, the street food niche found near beaches has particular relevance because it caters to the food needs of out-of-town visitors and is a source of income for thousands of individuals. According to Souza and Lage (2008), although the Brazilian beaches represent an important source of work and income for large population groups and a major strategy of survival for the poorest inhabitants of coastal towns, the number of studies on this subject is very low, and consequently little is known regarding the industry of street food vending.

In Salvador, street food is a part of everyday life and is ubiquitous at leisure areas such as beaches. A wide variety of foods are offered to customers varying from typical local foods to foods typical of other areas. Since 2010, when food kiosks were demolished, street food became virtually the only source of food near the beachfront area.

Based on the importance of this economic activity, general concerns with food safety, and the scarcity of studies addressing socioeconomic and hygienic issues in the street food industry, the aim of the present study was to investigate the socioeconomic, labor-related, and food safety features of the street food business at the beachfront of Salvador, Bahia.

2. Materials and methods

2.1. Geographical area and vendors

A cross-sectional study on street food vendors over the age of 18 selling at 14 beaches of the Salvador, Bahia (Brazil) beachfront between November 2010 and April 2011. In compliance with Resolution 196/96 (Brazil, 1996), the original project was approved by the Research Ethics Committee of Climério de Oliveira Maternity Hospital at the Federal University of Bahia.

2.2. Data collection

Itinerant sampling was performed to compose the study population (Garin et al., 2002). Data collection was based on a previously tested semi-structured questionnaire, whose questions were pre-tested and adjusted (Babbie, 2005; Quivy & Campenhoudt, 1998) with seven vendors in two beaches of the city, to allow better application of the instrument and data tabulation. The final version of the questionnaire was organized in 47 questions, with six categories of questions: vendor identification and sociodemographic characteristics (gender, age, marital status, educational background, occupation, and others); work history (length of time selling on the beach, local trade, working hours, days worked, income etc) characteristics/structure of the point of sale (type of point of sale, hygiene of the place, packaging and utensils, water availability etc); food profile, method of acquisition, and storage (origin of the product, reason for choice of food/drinks, locale of purchase of goods, storage location, etc.); hygienic and sanitary features (personal hygiene of seller, handling/finishing at point of sale, frequency of cleaning of utensils and hands, products used in cleaning, handling food and money simultaneously etc.) and opinions (about actions of regulatory agencies, trade supervision and hygiene of food).

The points of sale were visited personally to address the questionnaire items that required direct inspection (e.g., structure and procedures for handling food), and the vendors were interviewed to address the remaining questionnaire items that required their contribution (e.g., personal data and opinions). The vendors agreed to participate in the questionnaires by signing an informed consent form.

The completion of the questionnaires was conducted by trained and supervised student interviewers (undergraduate and postgraduate), who recorded information using the following procedures: direct observation on site in the case of issues pertaining to infrastructure and habits (for example, characteristics about the point of sale and handling practices) and questions to the participants in the case of issues of specific knowledge (for example, personal data and opinion questions).

Data collection occurred on weekends, Saturdays and Sunday, due to the higher flux of consumers and vendors on the beaches. The time period of the research team was about 3 h/day, from 10 h to 13 h. We approached all sellers found in the determined expanse of the beach, in the time previously set, and interviewed those who agreed to participate in the study.

2.3. Statistical analysis

Software EPI-Info version 6.04d and “Statistical Package for the Social Sciences” — SPSS version 13.0 were used to maintain the database and for data analysis. All variables were subjected to descriptive analysis; measures of central tendency (mean and median) and dispersion (amplitude) were used for continuous variables, and bivariate regression (chi-square test) was used for the variables of interest (gender and income, gender and headed households). The level of significance was established as having a p-value of 0.05.

3. Results and discussion

3.1. Socioeconomic traits of vendors

Table 1 shows the social and economic description of the 247 street food vendors who participated in the study.

The sample population was comprised mostly of females, which is consistent with the results of previous studies by Muyanja et al. (2011) in Uganda, Chukuezi (2010a) in Nigeria, Donkor, Kayang, Quaye, and Akye (2009) in Ghana and Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) in Ghana, which pointed out a female predominance of 87.6%, 66.67%, 98.4%, and 100%, respectively.

However, conflicting results have also been reported by Choudhury, Mahanta, Goswami, Mazumder, and Pegoo (2011) in India, Benny-Ollivier and Badrie (2007) in West Indies, and Munir and Kuran (2005) in Kenya, who reported 88%, 61.7% and 60% males, respectively.

One of the advantages of the street food business is the income it can provide to a large fraction of the population, particularly the women, who can combine street food vending with the demands of family life (FAO, 2005; WHO, 1996). In addition, the resulting income seems crucial to mitigate the food concerns associated with the poorest families often headed by women.

Most vendors were considered part of the economically active population, although older adults (7.7%) also participated in street food vending. Studies performed by Cardoso et al., found an average
age of 37.2, which varied from 14 to 80 years in Salvador (2005), and an average age of 33.6, which varied from 11 to 76 years old in Mutuípe in the state interior (Cardoso et al., 2008).

In Escuintla and Guatemala, Mahon, Sobel, Townes, et al. (1999) reported that the average age of vendors was 36 years old in both studies and varied from 13 to 67 years in 1994 and varied from 12 to 70 years in 1995. In Ghana, Mensah et al. (2002) reported that 70% of the participants analyzed were younger than 40 years old. In a study performed by Muyanja et al. (2011), 74.6% of the interviewees were 21–40 years old, and in a study performed by Choudhury et al. (2011) in India, 98% of the street vendors interviewed were 21–50 years old.

The findings described above indicate that informal street food vending represents a source of work for a globally economically active population that does not take part in the formal job market, and street food vending appears to be particularly common in developing countries. This description also applies to the Salvador beachfront.

The participants interviewed exhibited a low educational level, as almost half of the participants reported having an elementary school education or less, and 2.0% of the interviewees were illiterates. Additionally, 37.4% had not finished elementary education. Similar results were described in studies conducted on a global level (Choudhury et al., 2011; Donkor et al., 2009; Muzaffar et al., 2009; Omemu & Aderoju, 2008).

Most of the vendors interviewed reported a family income equivalent to one to three times the minimum wage, which was BRL 510.00 (USD 316.37). For 29.1% of the interviewees, street food vending was their only source of income.

The investigated sample exhibited differences in income as a function of gender. The number of males with income less than the equivalent of minimum wage was lower relative to females (12% vs. 26.8%, respectively); the percentage of males with income equivalent to one to three times minimum wage was 76.9%, whereas the corresponding percentage for women was 68.1%; most of the vendors who reported a monthly income greater than the equivalent of three times the minimum wage were male \( (p = 0.01) \). These results indicate that the income of the women who work as street food vendors is lower than that of males.

Almost half of the sample reported being married or having a stable union, although the percentage of single people was based on personal definitions of the interviewees. Muinde and Kuria (2005) reported a larger fraction of married people in their study sample (57.5%), which was similar to the 58% of married people reported by Omemu and Aderoju (2008).

Most interviewees reported being the head of the family. In the Iyenda (2001) study on street food and income of the poorest families in Kinshasa (Congo), 54% of the sample population reported that they were the heads of their family, 73.9% of whom were males. Most of the heads of family among the street food vendors in Bahia were also male (83.5% of males vs. 68.1% of females), which was a significant difference \( (p = 0.01) \) between gender and status as head of family.

### 3.2. Characteristics of work at the beach

Majority of the street vendors surveyed (57.5%) worked at fixed points of sale. Table 2 summarizes the findings relative to the characteristics of the street vendor locations at the beach.

The median amount of time spent in street food vending was nine years, which suggests that the career choice of street vending is relatively permanent. Among the interviewees with the longest experience in this activity, 10% worked more than 25 years in street food vending, whereas 13% were in the business for less than one year.

Muzaffar et al. (2009) analyzed the work of street food vendors in Dhaka, Bangladesh, and found that the average tenure was seven years, with an average workday of 12 hours. In the study by Omemu and Aderoju (2008), 43% of the vendors spent 6–10 years on the job, and 12% of those interviewed spent more than 20 years in street food vending.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Distribution (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44.1 (109)</td>
</tr>
<tr>
<td>Female</td>
<td>55.9 (138)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>Mean (amplitude) 40.3 (18–69)</td>
</tr>
<tr>
<td>Schooling (%)</td>
<td>Up to complete elementary school 48.7 (120)</td>
</tr>
<tr>
<td></td>
<td>Complete/incomplete secondary school 46.8 (115)</td>
</tr>
<tr>
<td></td>
<td>Complete/incomplete higher education 4.5 (11)</td>
</tr>
<tr>
<td>Family income (%)</td>
<td>&lt;1 MW 20.3 (50)</td>
</tr>
<tr>
<td></td>
<td>1–3 MW 72.0 (177)</td>
</tr>
<tr>
<td></td>
<td>3–5 MW 5.7 (14)</td>
</tr>
<tr>
<td></td>
<td>&gt;5 MW 2.0 (5)</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td>Single 45.3 (112)</td>
</tr>
<tr>
<td></td>
<td>Married/stable union 47.0 (116)</td>
</tr>
<tr>
<td></td>
<td>Divorces/separated 4.9 (12)</td>
</tr>
<tr>
<td></td>
<td>Widowed 2.8 (7)</td>
</tr>
<tr>
<td>Head of the family (%)</td>
<td>Yes 74.9 (185)</td>
</tr>
</tbody>
</table>

### Table 2

Characteristics of work in street food vending at the beach setting in Salvador, Bahia, Brazil.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Distribution (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length on the job (years)</td>
<td>9 (0–44)</td>
</tr>
<tr>
<td>Median (amplitude)</td>
<td>73.2 (181)</td>
</tr>
<tr>
<td>Trading sites (%)</td>
<td>Other beaches 21.8 (54)</td>
</tr>
<tr>
<td></td>
<td>Other places 4.8 (12)</td>
</tr>
<tr>
<td>Daily workload (h)</td>
<td>Mean (amplitude) 8.3 (1–14)</td>
</tr>
<tr>
<td>Weekly workload (%)</td>
<td>Weekends 46.2 (114)</td>
</tr>
<tr>
<td>Work shift (%)</td>
<td>Weekdays(^a) 3.6 (9)</td>
</tr>
<tr>
<td></td>
<td>Everyday(^b) 33.6 (83)</td>
</tr>
<tr>
<td></td>
<td>Almost everyday 16.6 (41)</td>
</tr>
<tr>
<td>Job reasons (%)</td>
<td>Job reasons (%)</td>
</tr>
<tr>
<td>Main source income</td>
<td>20.2 (50)</td>
</tr>
<tr>
<td>Occupation</td>
<td>30.0 (74)</td>
</tr>
<tr>
<td>Supplementary income</td>
<td>27.9 (69)</td>
</tr>
<tr>
<td>Own business</td>
<td>5.7 (14)</td>
</tr>
<tr>
<td>Other</td>
<td>16.2 (40)</td>
</tr>
<tr>
<td>Boss (%)</td>
<td>85.8 (212)</td>
</tr>
<tr>
<td>Oneself</td>
<td>14.2 (35)</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Every day - vendors worked every day of the week without clearance.

\(^b\) Almost every day - the vendors worked between 5 and 6 days weekly.
The vendors at the Salvador beachfront worked mostly on weekends; however, a considerable fraction worked every day of the week. Most vendors worked more than eight hours per day, during daytime, and at a single beach. Most vendors most likely choose to work weekends only because the number of visitors increases at the beaches on weekends. Notably, at some beaches, the visitors remain until the evening, and thus some vendors also work the night shift.

Upon characterizing the socioeconomic profile of street food vendors, Choudhury et al. (2011) pointed out that 44% of those interviewed worked 8–12 h per day, and 16% worked more than 12 h a day. Among the vendors, 49% spent 10–20 years vending food, and 5% of those interviewed spent more than 20 years vending food. All vendors were autonomous workers, none of whom possessed a license to operate, and all vendors enlisted other family members as coworkers.

At the Salvador beachfront, the most frequent reasons adduced to account for the job choice were economic occupation (i.e., the source of work) followed by need of additional income and single source of income. These results corroborate the economic relevance of street food vending. Family tradition was mentioned as the main reason by 7.7% of the interviewees, which points to a family component associated with this business. Among 85.8% of the participants who reported being autonomous workers, 47% were assisted by family members – mostly spouses (13.8%) followed by the children (12.1%), siblings (5.3%), and parents (4.5%). Therefore, the results indicate that street food vending has a strong family component, and with some exceptions, our results also point to the importance of this activity for the subsistence of families.

In a study conducted by Chukuezi (2010b) in Nigeria, 80.95% of the participants reported that street food vending sufficed to provide for the entirety of their family needs. Muyanja et al. (2011) observed that the income generated by food vending contributes to the total family income as well as to the satisfaction of additional financial needs.

The street food vendors interviewed in our study reported that the main advantages of street food vending were the resulting income (49.8%) and the autonomous nature of the job (27.5%), whereas income variability was suggested as the main disadvantage (25.1%).

Many interviewees encountered difficulty in accounting for their daily cash flow. Often, the interviewees reported money ranges that included the overall revenue and were not able to report on the net profit. As a whole, the interviewees were imprecise relative to their average revenue and profit.

The vendors who work every day or almost every day reported widely divergent daily income, which exhibited up to ten-fold variation (i.e., between BRL 10 and 100 (USD 6.20–62.03)). Some vendors reported earning BRL 1000 or even more per day. Some interviewees were not willing to divulge this information because they did not know how much money they earned, earned little money, or considered the questions too intrusive.

The daily income ranges most frequently reported were as follows: 63.6% reported daily income up to BRL 100.00 (USD 62.03); 20.3% reported daily income between BRL 100.00 and 200.00 (USD 62.03–124.06); and 11.3% reported daily income between BRL 200.00 and 300.00 (USD 124.06–186.10). Therefore, 95.2% of the vendors earned up to BRL 300.00 (USD 186.10) per day.

Difficulty in collecting data on street food vendor income was also reported by Lyenda (2001) in Congo. According to Lyenda, several visits to the interviewees increased their trust and openness, and the availability, consistency, and most likely the reliability of the information improved over time. The daily income of most of the people in this study sample (59.8%) varied from USD 21.00 and 30.00, whereas 28.5% earned USD 31.00 to 50.00, and 3.5% earned more than USD 80.00, whereas only 8.5% earned less than USD 20.00 per day.

### 3.3. Food types and conservation

Regarding the origin of the products sold by the interviewees, 61.1% were prepared, 50.6% were industrial, and 19.4% were served in its natural state. In this sense, it is noteworthy that some vendors sell prepared food, processed and fresh simultaneously.

Most participants bought their products in supermarkets (47.4%), 36.8% of vendors bought their products from suppliers, and 36% bought their products at market fairs.

As Fig. 1 shows, the prepared products predominated among the food items sold by the street food vendors in our study. Upon individual analysis, industrial beverages (sodas, water, and beer) were most frequently sold. Coconut water was most frequently served in its natural state and was the fourth most commonly sold item among all listed products.

Typical dishes from Bahia, such as acarajé, fried fish, abará, fried passarinha, and savory pastries, were some of the prepared food items most frequently sold. Popsicles and curd cheese were common among the craft-based food industry products sold.

The choice of street foods at the beachfront points of sale mostly included typical local foods, which further reflected the local food culture. These dishes included items such as acarajé, abará, and passarinha, which are sold every day in the streets by the so-called acarajé women (“baianas do acarajé”). Other local savory pastries are also widely sold all over the city, but mostly at places with an intense flow of people. Therefore, the street food vendors play an important role in the conservation of the traditional food culture of Salvador, which depicts a positive aspect of street food vending and is consistent with other studies conducted in other countries (Madhuchhanda, Chandi, & Mohapatra, 2012; Mensah et al., 2002; Mepba et al., 2007; Muinde & Kuria, 2005).

Fig. 2 shows that most of the perishable food items sold by the interviewees were not properly stored, as most food items were placed and/or stored in containers unfit to maintain the food at an appropriate temperature. Only 38.3% of the perishable food items...
were kept in isothermal polystyrene foam (Styrofoam) boxes and/or isothermal bottles/boxes/carts, whereas 17.1% of food was kept in plastic boxes, and 14.9% was stored in the stalls.

Furthermore, 82.4% of the non-perishable food items were kept in Styrofoam containers. Most of the non-perishable food items were industrial beverages that are typically consumed cold.

As a function of the data described above, in addition to the desirable sensory and nutritional aspects, food safety also includes food sanitation. Exposure to contaminants such as biological contaminants and inappropriate handling and conservation can compromise the sanitary safety of food.

Certification of the quality and safety of street food is a major challenge especially due to the lack of information on the hygiene and handling of the food items and the lack of appropriate infrastructure at the points of sale.

The conditions of the food business are becoming increasingly poorer at the Salvador beachfront area as a function of the lack of infrastructure for food preparation and vending. In addition, street food is exposed to very high temperatures and physical contaminants such as sand, and the vendors do not have ready access to sanitary facilities to wash their hands and tools. In summary, the street food business is run without any standards that ensure food quality.

Only 20% of the interviewees reported food surpluses. Upon inquiry regarding the fate of surplus food, 28.3% of the vendors reported that they take the food back home, 26.3% reported that they refrigerate the food at home, 16.3% reported that they freeze the food at home, 13.6% reported that they return the food to the suppliers and/or storehouses, 10.5% reported that they give the food to acquaintances, 7.3% throw the food away, and 4% consume the food.

In a study conducted by Muinde and Kuria (2005), the rate of surplus food was 35%, and 32.1% of the interviewees reported that they consume the surplus food, and the remainder reported that they store the surplus food to be sold the following day. A total of 26% of the vendors reported that they store the surplus food in open containers, 21% reported that they refrigerate the food, 21% store the food in plastic containers, and 16% store the food in bags or cupboards.

Transportation of food back home, particularly in the case of prepared items, might expose the consumers to foodborne diseases regardless of subsequent refrigeration or freezing. This risk is even greater as a function of the poor conditions to which the food is subjected at the point of sale.

At the Salvador beachfront, 76.9% of the interviewees reported that they have access to water at the point of sale; however, direct inspection showed no access to tap water. The available water was mostly used to drink (92%), to wash hands (61.2%), to wash or to moisten food items (25.9%), and to wash the kitchen tools (29.4%). Most of the water was brought from the homes of the vendors (54%), 18.5% of vendors brought water from other sites, 5.5% obtained water from stalls, 5% obtained water from the public showers, and 0.5% obtained water from the public toilets; an additional 16.5% of the vendors used mineral water. The water was mainly stored in plastic bottles (81.4%), five-gallon bottles (6.9%), buckets (4.8%), other containers (6.2%), and basins (0.7%).

Supply and storage of drinking water under appropriate conditions in the street setting are crucial factors to minimize the contamination of food, as water serves many uses such as drinking, washing and processing of food items, ingredient in recipes, washing of hands, washing of kitchen tools, and washing of equipment (Rane, 2011).

3.4. Hygienic and sanitary characteristic of vendors, kitchen tools/packaging and points of sale

Most vendors wore clean clothes, kept their nails short and clean, and wore protective hair covers with no other accessories (Fig. 3). Similar findings were reported by Mensah et al. (2002) with respect to clean clothes (96.5%), short and clean nails (92.5%), and protective hair covers (54.4%).

However, the high percentage of vendors using protective hair covers found in the present study must be interpreted cautiously because as a function of the long daily exposure to the sun, the use of hats and caps is overall frequent. Another instance deserving mention is the turban (“torso”) traditionally used by the acarajé female vendors, which also serves as a hair covering. The aforementioned results are inconsistent with the results reported by other authors, who noted the personal hygiene of street food vendors rather unsatisfactory (Lucca & Torres, 2002; Muinde & Kuria, 2005; Prado et al., 2010; Valverde & Badaró, 2009).

With respect to hygiene practices, 41.4% of the interviewees reported washing their hands often, 18.4% reported washing their hands two to five times per day, and 17.6% reported washing their hands one to four times per day, whereas 22.6% said not to wash their hands at all, which is consistent with the findings of various studies (Mensah et al., 2002; Prado et al., 2010). According to the FAO (2005), a lack of hand washing is one of the main causes of street food contamination.

Regarding hand washing, 23% of vendors reported to use water brought from home, 19.3% used seawater, 16.6% used water from showers, 8.3% used stall water, 17.1% used water and soap, and 2.8%
used water melted from the ice used to cool the industrial beverages. The use of seawater and melted ice for hand washing was mainly due to the lack of tap water on the premises. In 80.2% of the points of sale, food and money were not systematically handled by different individuals, which is a factor that contributes to the contamination of food sold at beaches in association with unsatisfactory hand washing. Handling of food and money by the same individual was also identified in several studies (Lucca & Torres, 2002; Chukuezi, 2010a).

Regarding the cleanliness of kitchen tools and equipment, kitchen cleaning was performed only once per day by most vendors (69.1%) and once per week by 12.9% of vendors. Less than 30% of the interviewees reported using sanitary cleaners (bleach and alcohol).

Muyanja et al. (2011) investigated the knowledge, practice, and risk factors of street food vendors at the three Ugandan towns Kampala, Jinja, and Masaka, and referred that 76.9% of vendors washed the dishes and glasses with water and soap. However, at the busiest times of day, vendors in Kampala (14.5%), Jinja (5.6%), and Masaka (1.4%) used cold water only or a kitchen cloth to clean the kitchen tools. According to Muyanja et al., those behaviors are relevant because they could promote cross contamination between the kitchen tools and cooked food, which represents a potential health risk for consumers.

Problems relative to the hygiene of kitchen tools and equipment were reported by several studies on the street food business including the identification of the mentioned tools, storage of ingredients in inappropriate places, and the presence of insects and animals at the points of sale (Lucca & Torres, 2002; Valverde & Badaró, 2009).

Fig. 4 summarizes the findings with respect to the hygienic conditions of packaging, kitchen tools, and stalls, and shows that a low proportion of items were classified as poor or terrible. However, a considerable proportion of items were classified as average.

Therefore, one might conclude that although the stalls exhibited poorer hygienic and sanitary conditions relative to other items, as a rule, the hygiene of the investigated items was relatively good, as most fell within the categories of good and average.

4. Conclusions

Major changes occurred recently in the beach setting of Salvador, as the beach kiosks were removed based on structural issues. For that reason, street food has become the only option for beach visitors in spite of public agencies seeking to repress this business.

The results of the present study indicate that street food vending is crucial for many individuals outside of the formal job market whose income is usually low. In addition, the present study also identified the remarkable economic contribution that street food vending represents for the involved individuals, as street food vending represents the only permanent source of income for a considerable fraction of the investigated population.

As a function of the importance of street food vending for a considerable fraction of the population of Salvador, the prohibition of street food vending will not solve the problem of food safety. In addition, control of street food vending is challenging due to the difficulty encountered by food vendors regarding the application of sanitary regulations, the large number of food vendors, and the mobility of the vendors.

Treating street food solely as a public health problem is limited in scope, because in addition to supply of safe food, this sector is influenced by social, cultural and economic issues. Thus a knowledge and understanding of this reality is fundamental for efforts in its regulation, with the context of working with intersectoral demands.

With this aim, we suggest to continue this line of research with the development of intervention studies in order to evaluate and understand issues that go beyond the quantitative field. In a slow and gradual manner, measures can be tested and adopted in order to obtain successful experiences and promote the organization and sustainability of this broad and valuable sector.

The present study points to the need for specific norms, including the official recognition of this economic activity. Moreover, considering the complexity of issues related to conformation and the continuity of the segment, the regulation of the sale of street food presents a clear contribution to the orderly use of public space and to sanitary control.

Furthermore, this study suggests that the action of public agencies, vendors, and society at large, as well as the adoption of tested strategies of intervention will, be required to promote the organization of this economic activity and to improve public health.

Acknowledgments

The authors would like to thank undergraduate students Bianca Ferreira Rodrigues, Cássia Araújo Cerqueira and Eluída Benemérita Vilela Nascimento for their help with the data collection.

References


