

The street food culture of Guatemala City: A case study from a downtown, urban park

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SUMMARY. This study investigated the structure and environment of 31 street food vendors in an urban park in the downtown area of Guatemala City. Vendors were interviewed and observed in order to assess the quality, safety, and accessibility of street food.

The street food vending in the park consisted of five types: whole meal, snack, beverage, fruits, and carts. A great variety of typical Guatemalan meals, as well as ready-to-eat fruits and hot dog chapin (hot dog with cabbage and avocado cream), were found in the park. The food preparation and handling revealed inadequacies concerning the hygiene. Circumstances, such as the lack of portable water near the vending site and unhygienic sanitary facilities, supported the transmission of pathogens. The clientele was of all ages, and included female as well as the male purchasers. Typical clients came from the surrounding area, i.e. the employees of civil and private offices, commercial businesses, and the non-food vendors of the park. Comparing the economy of street food with the definition of very poor in Guatemala, the prices on the street were often above the daily money needed for a basic food basket. However, a special clientele were the very poor, such as the street children and handicapped people, who earned their meals by helping out at the vending sites. Mainly female street food vendors were found at the whole meal, snack, and refreshment sites whereas men sold predominantly at the carts. For all of the vendors, it was the main source of income and for many families the only one.

Key words: Street food, quality, safety, accessibility, Guatemala.

RESUMEN. La cultura de la comida callejera en la Ciudad de Guatemala: un ejemplo de un parque urbano en el centro. El estudio investigó la estructura y el ambiente de 31 vendedores de la calle en un parque en el centro de la Ciudad de Guatemala. Los vendedores fueron investigados y observados con respecto a la calidad, la seguridad y el acceso a la comida de la calle.

En el parque cinco diferentes clases de puestos callejeros vendían comidas: whole meal vendors, snacks, vendedores de refrescos, vendedores de frutas y carretas. Había una gran variedad de comidas guatemaltecas, frutas preparadas hasta hot dog chapin (una variación guatemalteca de la receta original). La preparación y manipulación de las comidas demostraron insuficiencia en la higiene. Circunstancias como deficiencia en agua pura en el parque y sus alrededores y falta de higiene sanitaria de los servicios facilitaron la transmisión de las bacterias patógenas. Los vendedores informaron que el tipo de los clientes respondía a todas las generaciones tanto a mujeres como a hombres. La mayoría de las personas que estuvieron allí eran los trabajadores del gobierno, de las oficinas comerciales y otros vendedores del parque. La comparación de la economía de las comidas callejeras con la definición de la pobreza dejó ver que los precios de algunas comidas de la calle estaban por encima de la canasta básica de Guatemala. Nuevamente, los clientes especiales de los vendedores fueron la gente más pobre como los niños de la calle y las personas inválidas quienes ayudaron a los vendedores para ganarse la comida. Los vendedores de los whole meals, snacks y de los refrescos eran mujeres mientras en las carretas trabajaban más hombres. Este trabajo era el único ingreso para la mayoría de los vendedores y los miembros familiares.

Palabras clave: Comidas de la calle, calidad, seguridad, acceso, Guatemala.

INTRODUCTION

Guatemala has been — and remains — a largely rural, agricultural nation, with 61% of the population classified as rural in 1995 (1). Its capital, Guatemala City, and other cities have experienced growth in recent years; the greater Guatemala City metropolitan area has over 2 million inhabitants (2).

The phenomenon of urbanization has added new cultural dimensions to the basic cuisine in Guatemala. Unavailability of home-grown food, a rapid pace of life, international influences (especially westernization) and a diverse array of different cultural and social groups in a small area may have

modified the diet of many Guatemalans. A good example of this is the popular street food 'hot dog a la chapin', i.e. the Guatemalan hot dog, a fast food meal of western origin which has been adapted to the Guatemalan food culture (with cabbage and avocado cream). However, little information is available concerning the dietary habits in the city.

Nutritional quality, safety, and accessibility are important features of street food. How does street food contribute to the energy and micronutrient requirements of the clientele? How safe are the preparation and handling of foods served by street vendors when considering the transmission of foodborne diseases? Regarding the prices of street food, how economical are these

dishes for the majority of the Guatemalan population? What kind of job opportunities does the street food business provide?

METHOD

The study was performed from June to July 1995, i.e. during the tropical rainy season. In this case-study, 31 out of 39 street food vendors stationed in the Parque Enrique Gómez Carilla were interviewed and observed. All interviews were conducted during a less busy time, so that the vendors were more disposed to answer. To gain the confidence of the people, foods and/or drinks were consumed and a conversation was started about general topics. This time was also used for observations. After a certain interval, vendors were asked to participate in a study which involved answering certain questions. No pre-printed form for the interview was used; rather a catalog of questions was prepared to guide the conversation and the observation. The interview and observation lasted between one and a half and three hours. Not all vendors in the park participated in the interview; two snack vendors, one beverage vendor, three carts and two fruit vendors refused to answer questions.

The questionnaire for the interview was composed mainly of general questions, such as: the kinds of meals sold and their popularity; food preparation (transportation to vending site, source of raw materials, frequency of food preparation, use of leftovers, source of water, and use of chlorine); the structure of the business (hours and days of business, ownership, salary of the employees); and the social structure (gender distribution, other sources of income, period of residency in the metropolitan area). The observation focused on any possible means of contamination and covered the following areas: raw materials; food preparation practices; conservation of prepared foods; distribution of food; location of the business and use of space; variety of equipment and its use; water availability; waste disposal; and personal hygiene. In order to avoid reticence to participate on the part of the vendors, for fear of harming their own business, questions about hygiene were reduced to a minimum. These included the issues of the source of water, any chlorine treatment, and procedure for storage of leftovers. Observations of all kinds are not very scientific, however, for this purpose observation was the only acceptable way of obtaining the necessary information.

DESCRIPTION

Street food vending in Guatemala City

Officials of the Food Control Office of the Ministry of Health estimated that 20,000 street food vendors were located in Guatemala City, with only about 10% registered with the *Municipalidad* (municipal authority). Vendors have to renew their license annually by turning in a certificate of medical check-ups and a confirmation of participation in a food preparation class offered by the Ministry of Health. The food

control division of the Ministry of Health collects 200 to 300 food samples for microbiological analysis from the street every year. Further, control of the hygienic appearance of the vending site, e.g., the presence of the obligatory series of three dish-washing vessels (one with water and washing-up liquid, one with water for rinsing, and one with chlorine-treated water for post-rinsing) are done by inspectors.

Parque de la Concordia - a Case Study

The area chosen for the case study was the 'Parque Enrique Gómez Carillo', in former times known as 'Parque de la Concordia', which is still its common name. It is an open area of more than 2,500 m² in the heart of the old downtown area of Guatemala City (Zona 1). The park, although not very large, has several trees, a lawn with flowers, and a monument with a fountain in the center. It is one of the few places in the downtown area that offers some recreation in a green environment at no admission cost.

The Zona 1 is the oldest downtown area of the city and, in former times, was the heart of the city. Nowadays, it is losing its important business position to the Zona 10 and its neighboring zones, the new vital and rich part of the capital (2). However, the Zona 1 is still an important commercial area with thrift stores and exclusive boutiques of long standing. Further, there are an increasing number of vendors on the sidewalks selling textiles, cosmetics, household articles, electrical appliances, etc. Also, important institutions such as 'Palacio Nacional' (National Palace), 'El Congreso Nacional' (the Parliament), governmental offices and the headquarters of the national police are located in the old downtown area of the city.

In general, the city does not offer many sites for public recreation. However, Zona 1 with its parks and its concentration of cinemas is one of the popular areas for ordinary citizens on Sundays.

Street food vendors in the Park

The ambiance of the park has maintained a street food vendor culture for more than 40 years. Vendors are spread out along the edge of the park. We can divide the vendors according to their food offering into five different groups: whole meals (N=6); snacks (N=12); beverages (N=3); carts (N=16); and fruits (N=2). The first three groups are concentrated on the west side of the park where the city government has built 28 selling stalls with concrete floors and walls (0.50 m high) for demarcation. Vendors have brought in wooden frames to place on the walls to support a roof for rain protection. Clients use the low-rise walls as seats, or the vendors store food, tableware, and dish-washing utensils on them. On the west side of the park, there is a bus stop which provides a large number of potential clients, especially working people in the morning and late afternoon. Every day, these ambulatory vendors pull down their business and store their bulky goods and chattels, such as grills, tables, benches, etc., in a nearby parking lot (60%). Others take it home by car (25%) or leave it at the stall (15%).

The carts are spread on the outskirts of the park. During the weekends cart vendors end up standing close beside one another when more than the usual number of carts invade the park. Only 54% of interviewed cart vendors were stationed in the park the whole week. The others were distributed in different street corners of Zona 1 on some days of the week.

At lunch time, several itinerant vendors of tortilla (traditional maize pancakes) were selling their product to passersby as well as to other street food vending sites. Another type of ambulant vendor was visible in the late afternoon, selling coffee and sweet bread to the street vendors and cart vendors.

Variety and diversity of street foods

Foods found in the Parque de la Concordia are displayed in Tables 1 to 4. The various meals can be divided into the

following different street food vendor types:

The whole meal vendors offered about thirty varieties of different meals (Table 1.); a selection of five meals were common to all of the vendors in this category. All meals were served with *sopa de arroz* (steamed rice, vegetables and broth), sometimes accompanied by beans, noodles or salads (commonly *ensalada rusa* [Russian salad]). The prices of the meals varied between 6,50-7,50 quetzales (Q) (US\$ 1,15-1,35). The most popular dish was *caldo de res* (beef broth), followed by types of chicken dishes. Further, *carne, guisada o asada* (braised or grilled beef), *frijoles con huevos* (black beans with eggs), *pepian* (condimented stew with beef, pork or chicken, and potatoes and vegetables) and *ensaladas* (salads). Except for one, all of the meal vendors opened between 6:00 and 8:00 a.m. and served breakfast consisting of beans, rice, and fried eggs with coffee. However, the main business of

TABLE 1
Foods at the whole meal sites (N=6) and number of vendors with the same offer

Guatemalan Name	Translation	N	Guatemalan Name	Translation	N
Carne- de res	- recada beef - with gravy	1	Lengua	- guisada tongue - braised	1
	- estofada - stewed	1	Rabo	ox tail with gravy	3
	- azada - grilled	5	de vaca	- estofado condimented stew with beef,	4
	- adobada - marinated	1	Pepian	- de res pork or chicken , and	1
	- guisada - braised	4		- de marrano potatoes and vegetables	1
	- avada - grilled with garlic	1		- de gallina beef broth	6
Revolcado	pork meat and entrails cubes in tomato gravy	2	Caldo	- de res chicken broth	4
Hilachas	Beef in sauce	3		- de gallina herb broth with vegetables	1
Picado de carne	chopped beef with vegetables	2		- de hierbas Chinese pasta dish with	2
Bistec	beef steak	1	Chao mein	vegetables and meat	
Torta de carne	ground beef patty	2	Longanizas	grilled sausage	1
pato	-horneado duck -baked	1	Fijol blanco	white beans with tomato gravy	1
pavo	-horneado turkey - baked	1	Envueltos	fried vegetables with egg cover	1
pollo	-asado chicken - grilled	6		garnishings:	6
	-dorado -fried	6	Ensaladas	different salads	
	-horneado -baked	1	Sopa de arroz	steamed rice, vegetables	
	-guisado -braised	1	Frijoles negros	black beans	
Arroz con pollo	rice with chicken	1			
Recado de gallina	chicken in gravy	1			

a prices for a whole meal ranged between Q 6,50-7,50 (US\$ 1,16-1,55)

these vendors was during lunch hours.

The snack vendors were selling typical Guatemalan foods including both hot and cold snacks (Table 2.). Prices depended on the type of food, ranging from Q 0,50 (US\$ 0,09) for a simple sweet bread to Q 4,00 (US\$ 0,71) for a whole breakfast with beans, eggs, and tortillas to Q 5,00 (US\$ 0,90) for grilled beef. The average price was Q 1,79 (median Q 1,50, i.e. US\$ 0,32 and US\$ 0,27, respectively). Most popular were all kinds of atoles, especially *atole de elote* (hot sweet corn gruel). Vendors also sold many *chuchitos* (dough cooked in corn cob

leaves), *arroz en leche* (rice cooked with milk and sugar - liquid), *pupusas* (fried tortillas filled with cheese or bacon strips) and *pan con huevos* (bread with fried eggs).

The beverage vendors only offered drinks (Table 3.). The main item sold was fresh pressed orange juice. Some were sold together with one or two raw eggs. One of the vendors offered many types of *licuados* (fruit drink prepared in the blender) with milk. What was offered depended on the market prices of the fruits. Prices ranged from Q 1,50 (US\$ 0,28) to Q 2,75 (US\$ 0,49).

TABLE 2
Foods at the snack sites (N=10) with number of vendors and price range of the same offer (in Quetzal)

Guatemalan Name	Translation	N	Price (in Q) ^a	
atole	- blanco	hot maize gruel	4	1,50
	- elote	hot sweet corn gruel	6	1,50
	- platano	hot plantain gruel	1	1,50
arroz en leche	rice cooked with milk			
	and sugar (liquid)	8	1,50	
atolito	hot rice drink	1	1,50	
mosch de leche	oat meal with milk	1	1,50	
chiles rellenos	with meat and vegetables			
	filled green	4	2,50-3,00	
	pepper in egg cover and fried			
panes con	frijoles	white bread with beans	6	1,00-1,50
	huevos	fried eggs	4	1,50-2,50
	jamón	ham	1	1,50-2,50
pan dulce	sweet bread		2	0,50
tacos	with meat and vegetables			
	filled fried	3	1,25-1,50	
	tortillas			
tostadas con	guacamole	fried tortillas with		
		avocado cream	4	1,25-1,50
	chirmol	tomato sauce	4	1,25-1,50
	frijoles	beans	4	1,25-1,50
enchiladas		vegetables		
		and meat	2	2,00
tamales	dough cooked in plantain			
	leaves	1	4,00	
chuchitos		corn cob leaves	9	1,50
tamalitos		corn stalk leaves	1	0,70
pupusas		fried tortillas filled with		
		cheese	3	1,50
		or bacon strips		
rellenitos de platanos		fried plantain dough filled		
		with	1	1,50
		sweetened beans		
frijoles con arroz		beans with rice	3	1,25-1,50
con huevos		fried eggs	1	4,00
carne	- asada	grilled beef	2	3,00-3,50
	- asada with			
	frijoles	with beans	1	5,00
pan dulce	sweet bread		3	0,50
bebidas:	drinks:			
refresco de tamarindo		cold drinks of tamarind	4	1,25-1,50
	de horchata	rice flour	1	1,25-1,50
	de naranja	orange	2	1,25-1,50
café dulce	sweetened coffee		4	0,50
aguas	soft drinks		2	2,00

^a Q 5,60 » US\$ 1,00

TABLE 3
Foods at the beverage sites (N=2) with number of vendors and price range of the same offer (in Quetzal)

Guatemalan Name	Translation	N	Price (in Q) ^a
jugo de naranja	orange juice	2	1,50
con huevo	with egg	2	2,75
licuados de leche	fresh fruits blendew		
(diferentes sabores)	with milk	1	2,00

^a Q 5,60 » US\$ 1,00

Most of the cart vendors sold hot dogs as well as mixtas (hot dog chapin but with tortilla instead of bread; Table 4.). All of the foods were equally popular. Prices ranged between Q 2,00-2,25 (US\$ 0,36-0,40) for hot dogs and mixtas and Q 3,00 (US\$ 0,54) for churrasco and Mexican tacos.

TABLE 4
Foods at the carts (N=13) with number of vendors and price range of the same offer (in Quetzal)

Guatemalan Name	Translation	N	Price (in Q) ^a
churrasco	Argentine-style grilled beef with		
	tortilla, onions, avocado cream,		
	tomato sauce	2	3,00
Mexican taco	churrasco like snack with special		
	sauce and coleslaw	1	3,00
hot dog	hot dog	1	2,50
hot dog (chapin)	hot dog with cabbage and		
	avocado cream	10	2,50-2,50
mixta	hot dog chapin but with tortilla		
	instead of bread	9	2,00-2,25

^a Q 5,60 » US\$ 1,00

All of the carts and whole meal vendors also sold soft drinks. Further, soft drinks made from concentrates, such as pineapple, orange, horchata (sweetened cold drink of rice flour), and tamarindo (a tamarind cold drink) were sold at whole meal vendors and at some snack vendors.

Observation of food handling

Raw materials

Most vendors interviewed bought foods at the two main markets near the park every day. Only a few reported buying in a neighborhood market or in a shop. Tortillas were delivered daily. Most cart vendors were delivered food by the cart owner twice a week.

The cart vendors stored their raw materials either in bags

or in closed shelves which were integrated in the vending site. Further, ice chests were used for raw food conservation, i.e. meat and sausages were stored in plastic bags together with the pre-packed soft drinks and the commercial loose ice blocks. Only two of the other vendor types used the same method for food conservation, although all of them who sold meat had an ice chest.

Food preparation

Vendors normally cleaned vegetables before using them for food preparation. Sometimes there was not enough water, thus, people reused the water several times or used it sparingly. Peeled vegetables and meat were not cleaned at all with water.

Except at the beverage vending site, most of the foods were heated for some time. Foods were prepared on charcoal or wood grill. Typical cold foods (i.e. not heat treated) were salads, guacamole, and chirmol. However, almost all carts heated their coleslaw and chirmol. Other modification of recipes, like the use of mayonnaise to protect the color of guacamole and the use of pineapple to soften the meat, was observed at the carts as well.

Food preparation by the whole meal vendors (on the street) and snack vendors (at home) was done once a day before the main business. On the other side, the foods from the beverage and cart vendors were frequently prepared depending on the demand. The newly prepared food was added to the old food without cleaning of equipment in between.

Conservation of prepared food

Prepared foods was generally stored in pots, bowls, and plastic bags which were not always covered. Whole meal and cart vendors kept hot foods on stoves. Snack vendors used material to keep the hot meals warm in pots. Food openly displayed to attract clients was mainly observed at the whole meal vending sites. Several snack vendors displayed food in a closed show case. Once we observed raw meat being conserved together with prepared food. At the carts, commercial cold sauces were stored in squeeze bottles which were refillable. The 'refrescos' (cold drinks), such as horchata, tamarindo, etc., were kept cold with loose commercial ice blocks.

The whole meal and the snack vendors kept their prepared food for from three to eight hours, depending on the level of business and the business hours. The carts prepared a new batch of food several times during the day; the average was: guacamole every 3,4 hours (range: 2 - 4,6 hours), chirmol every 5,3 hours (4,6 - 6 hours); and cabbage every 3,7 hours (2 - 5 hours). One of the cart vendors retained the guacamole in an ice chest during slower periods. Only the beverage vendors stored their food for a short time (less than a half an hour). In general, leftovers were thrown away (45%), taken home for the family (42%) or sold at a lower price and/or given for free to very poor people (13%).

Distribution of food

Foods from the street were either served in the hand with paper napkins or plain paper (snack and cart food), on plates or china (whole meal food) or in plastic bags or glass for all kinds of fluids. Metallic cutlery was used to eat the food from plates and china. Serving of the food was mainly done with ladles and cups which were kept in the food or stored next to it on a separate plate.

Location and use of space

The vendors at the selling stalls were using the demarcating wall for food preparation and storage purposes. Tables were mainly used by clients. The limited space was a problem for vendors who prepared the food at the vending site, such as the whole meal vendors. Thus, pots with foods were sometimes stored in each other and on the floor. The carts used functional mobile equipment with separate places for food preparation and storage.

Equipment and its use

The kitchen equipment had been used for some time, thus, nicks and cracks were not rare. Nearly every vendor had some utensils made out of wood. The whole meal and the snack vendors in particular used wooden cutting boards.

Surfaces were cleaned with wet and dry all-purpose cloths. One vendor was observed using a special liquid soap to clean the working area. In the case of the whole meal, snack, and beverage vendors, dish washing was mainly done with two buckets, one with soap and the other with water. Only four vendors had the required series of three buckets. However, the dish-washing water was not always clean. Dishes were stored in a plastic bucket with holes after dish washing. Stagnant water from dish washing was frequently observed on dishes. The cleaning of kitchen equipment before handling different foods was not frequently carried out by the vendors, e.g., the same cutting board was often used for preparing raw meat and vegetables.

Water

The vendors brought water from home (52%), took it from a parking lot (25%) or obtained it from the public system of the park (23%). All of the vendors reported that they were adding chlorine to the water except for the beverage vendors. Most of them had chlorine bottles visible at the vending site. One beverage vendor was filtering the water at home. The whole meal, snack, and beverage vendors had at least one special receptacle for water (a closed bucket or barrel with a capacity of about 20 litres) at the vending site. Carts had less water available (4 to 8 liters).

The public water system in the park was unavailable from 10.00 a.m. until after sundown. Water was stored in open iron barrels in the public bathrooms of the park. The same water source was used by the clients of the bathrooms for cleaning toilets and washing hands.

Waste disposal

There were small disposal places next to every selling stall. However, the vendors never used them. Waste was mainly stored in an uncovered bucket, carton, or bag. Garbage was disposed of at the public disposal place of the park at least once a day. Sewage/liquid waste was brought to the public drainage system of the park most of the time. Only four public waste buckets were present in the whole park. The pathways in the park and the central waste disposal site of the park was cleaned by employees of the *Municipalidad* daily.

Personal hygiene

Aprons were used most of the time except at the carts. In general, all vendors had a clean appearance, and short-cut hair or a ponytail. Only two young cart vendors tended to have dirty clothing. Some vendors wore jewelry (N=4). Hand washing was not routine, occurring only when people washed foods or dishes, or handled coal. Painted fingernails and dirt beneath the nails were observed sometimes. Vendors prepared foods and handled money at the same time. Most of the vendors used the sanitary facilities of the park, for which they had to pay (Q 0.40 or US\$ 0.07). The public bathrooms were badly illuminated, had standing water on the floor, and a strong stench.

Clientele of street food vendors

There were no differences between the type of clientele reported by the different street food vendors. The clients included passersby, construction workers, sales persons from the shops, the itinerant vendors in the park, people from offices and agencies, students, and policemen. The whole meal vendors reported people older than 30 years of age as frequent customers. All others responded that all age-groups purchased foods or beverages at their stands. Also, the sex distribution was reported as equal, i.e. about 50% men and 50% women as clients, at the majority of vending sites. Only half of the whole meal vendors' and some snack and cart vendors' responses indicated a predominantly male clientele. The mean number of clients per hour ranged between 5,75 for whole meal clients, 12 at carts, 12,6 at snacks, and up to 21 at the beverage sites. The total number per day was also variable: 67,5 (whole meal), 78,3 (snack), 100 (beverage), and 137,1 (carts).

Special clienteles were the street children, homeless people, and other very poor people. On several occasions, vendors were observed giving food to someone asking for a hand-out. Three of the snack and one of the whole meal vendors gave their left-overs from the day at a low price or free-of-charge to poor people. One whole meal street food vendor had a contract with a foreigner who sent money for feeding the street children of the park once a day. Also, some street children and handicapped people helped out in exchange for food at different sites.

Structure of the street food business

All of the snack and beverages vendors and 83% of the whole meal vendors were female. In contrast, 85% of the interviewees at the carts were men. All of the whole meal, snack and beverage vendors interviewed owned their own place, except for one snack vendor. This was different for the carts. Over 75% of the interviewed vendors were employees.

The owners of the street food vending businesses were registered at the *Municipalidad*. However, only 50% of the snack vending sites and 40% of the carts had registered their employees and family helpers as well. All of the whole meal vendors hired one or two additional people. At one vending site the whole family was working. Four snack vendors had hired people or were being helped by family members. The beverage vendors did not have employees. The salary for employees at the different vending sites varied between the mean of Q 1,76 (whole meals: US\$ 0,31) and Q 2,74 per hour (carts and snacks: US\$ 0,43), i.e. salary per day between Q 14,07 (whole meals; US\$ 2,51) and Q 26,12 (carts; US\$ 4,66). Seven of the whole meal and snack vendors were the only money earning members of families ranging in size from three to nine people. All of them were women. On the other side, ten of the cart vendors were single.

The geographic origin of the people also varied between the different street food vendor types. For instance, about 60% of the cart vendors had been in the city less than ten years, and about 50% of them less than one year, whereas all whole meal and beverage vendors, and 90% of the snack vendors, were born in the capital or had been a resident for more than ten years.

Sunday, Monday, and sometimes also Saturday, were stated to be the best days for business. The best time for the whole meals vendors and carts was lunchtime, between 11:00-15:00 h. The snack vendors were more diverse. Several noted the morning between 7:00-8:00 h as a good time; others said that lunch (11:00-15:00 h) and the afternoon (16:00-18:00 h) were prime times. The carts that were open until the late evening (some until 23:00 h) had good business after 19:00 h.

Most vendors worked seven days a week. However, 67% of the whole meal vendors did not open on Sundays, as was true for 40% of the snack vendors, who did not work on either day of the weekend. The mean operating time of the vendors' was between 5 hours (beverages), 6.8 (snack), 9.2 (whole meal), and 11.4 (carts) hours per day.

Most of the snack (80%) and whole meal vendors (67%) had been working in the park for over ten years and up to 40 years. Several had a family tradition of selling in the park. On the other side, about 46% of the cart vendors had been selling at their carts for less than one year. Only 23% had been doing their job for more than ten years.

Economic aspects of street foods

The *canasta basica* (the basic food basket, i.e. the purchase price of foods needed to survive) for June 1995 was set at Q

29,52/day (US\$ 5,27) for a family of five people (3). Comparing it with the prices of street foods, the average expenditure per person would be Q 7,00 (US\$ 1,25) for a whole meal, Q 1,50 (US\$ 0,27) for a snack, Q 1,50 for an orange juice, and Q 2,00 (US\$ 0,36) for a hot dog. This would correspond with 119% (lunch), 25% (snacks and beverages) and 34% (hot dogs) of the daily *canasta básica* for a family of five. Comparing the expenses of street foods with the minimum wage of Q 16,60 (US\$ 2,96) per day for construction workers or Q 16,00 (US\$ 2,86) for policemen (4), an amount of 42% for lunch, 9% for snacks and beverages, and 12% for a hot dog would be needed of the minimum salary for a single person.

The prices of street foods were also compared with prices of similar meals at restaurants and fast food places around the park. All prices were from 17% (tostadas) to 300% (hot dog chapin and churasquito) more expensive than on the street.

DISCUSSION

Describing the street food business in a city, such as Guatemala City, is a complex topic. The type of meal can vary from one street corner to the next depending on the clientele, the cultural background of the vendor, and environmental factors, such as space, availability of water, collaboration of neighbors, etc.

One descriptive study done by Bressani et al. (5) a decade ago can be compared, to a certain extent, with the findings of the present study to analyze time-dependent trends. However, the two investigations are not strictly parallel. Aside from different aspects covered in the study in 1985, Bressani et al. (5) investigated a greater part of the metropolitan area of Guatemala City. The focus of the current study was a specific area, i.e. a park in the old downtown area. On all aspects, such as diversity of vendors and clientele, variety of food offerings, etc., this single-location study would be less diverse than that of Bressani et al. (5) at a city wide level.

Compared with the type of street food vendors investigated in the study carried out in 1985 (5), a different distribution was found in the park. About 87% of all vendors in the park sold prepared meals in some form. Only a small percentage sold only fruits (5%) and refreshments (8%). Although the majority of vendors in the 1985 study were offering prepared meals, the overall percentage (62%) was lower, whereas fruits were more frequently found in 1985 (16%). The study of Bressani et al. (5) mentioned vendors of nuts and of typical Guatemalan candies as a component of the street food business. This class of merchant was not found in the current survey in the park itself, although ambulatory nut and candy vendors were common in the streets in the vicinity. Other classes of ambulatory vendors, which were noticed in the park, were tortilla vendors and women selling coffee and sweet bread to other vendors. The study done in 1985 (5) never mentioned these classes of vendors. Diversification of street food vending may have taken place during the past ten years.

Another interesting aspect concerning the distribution of street food vendors in the Parque de la Concordia was the increased number of street food vendors operating at weekends. During the week, all the carts were spread out at the different street corners near the park. Since offices and shops are closed on Saturday and Sunday, more potential clients were found in the park. Vendors used those days as a chance to earn more money; that is, they actually did their best business on weekends.

The meals offered by the street food vendors investigated in this study did not differ from the meals mentioned by Bressani et al. (5). Only the Mexican taco cart seemed to be new in the street food culture of Guatemala City. The list of prepared foods presented in this study only covered about 58% of the foods mentioned in 1985. This could be due to the more limited number of vendors interviewed in our study. The environment might be an important factor as well. For example, fried and boiled corn, mentioned by Bressani et al. (5), were frequently observed on weekends in recreational parks of the city.

In traditional rural diets of Guatemala, up to 80% of calories can be derived from maize (6,7). Legumes constitute another component of the customary Mayan dietary fare. Selection of foods in the park would necessarily reduce the amount of corn and beans as sources of total dietary energy in favor of more animal products. The foods sold as part of the whole meals were rich in meat, such as *caldo de res* and *churrasco*. These would increase the biologically-available iron more than other elements of the more traditional diet. The consequences of this shift from a more traditional diet to street foods would be reflected not only in a greater iron density, but also a more abundant intake of other micronutrients, such as riboflavin, folic acid, and vitamin A. Calcium and phosphorus intakes would probably decline (8). It is important to note that, with the exception of foods such as hot dogs, the basis of the street foods are still traditional foods and preparations; in the rural population, *pepián* and *caldo de res* would be consumed only rarely, whereas they could become daily fare for regular clients in the park.

Among the larger consequences of urbanization, Popkin (9) has described a «nutrition transition» that affects Third World countries as more modern and western food culture takes hold. Such a transition makes poor populations less susceptible to the traditional problems of nutrient deficiencies, but puts them on the road to problems of chronic disease (10). Compared to the double-cheese pizzas and quarter-pound hamburgers offered in the «American-style» fast-food restaurants in downtown Guatemala, the availability of traditional foods at the street vendors would at least appear to retard the transition to the high-fat, high-cholesterol, high-sodium, and ultra-refined offering that would increase the chronic disease pattern.

The transmission of foodborne diseases are considerable causes of morbidity and mortality throughout the world (11). To the extent that poverty represents a lack of power (both

personal and collective), those with low income are more likely to be subjected to unsafe food sources. The conditions for safe handling of foods did not seem to be present for the street food vendors and their clients in the park. Generally, the establishments presented a neat and orderly aspect. Beneath the presentable aspect of the street food vendors sites, however, a host of risk factors for foodborne infections are latent. In particular, there are problems with meat handling, and its contact with other raw ingredients, potentially fostering cross-contamination. At the open markets, from which the vendors purchased much of their food, storage of dry ingredients was not ideal. Spores could be a factor of this (12) and contamination through rodents and other animals are likely. Further, holding food for a long time (more than four hours) in conditions that favor microbiological growth have been identified as one of the main problems (12-18). Similar conditions, e.g., prepared food that was stored without cover for some time before consumption, were observed in the park and suggest an analogous situation.

The use of bare hands in the preparation and serving of food is a tradition that seems to be accepted by all parties. Water for hand-washing was scarce, and such practices as handling money and touching different foods complicated the situation regarding possible contamination. The lack of constant available water to the street food vendors compromises sound hygienic practices in other ways as well. The washing of utensils and serving dishes was difficult. As in the decade-old study (5), several vendors in the park used water supplies others than home. Those vendors who used the public transport system (40%) were especially dependent on the water supply of the park or other sources nearby. Contamination of food through water used by the vendors seemed to be a problem in other studies as well (19).

Beyond quality and safety, street food must be accessible to its potential consumers in two domains. It must be conveniently located, and the prices must be within the limits of their personal and household budgets. A description of the clientele is difficult when interviews have not been conducted specifically with the consumer. In the present study, information on clients was gained by interviews with the vendors. This could introduce bias. Again, with relation to the study of Bressani et al. (5), slight differences in the age-profile of the clientele of street vendors were observed. With the city-wide view, 50% of the customers were predominantly young adults, whereas in the park, this was 39%. Children and adolescents were never reported to be main clients at the vending site of this study, while Bressani et al. (5) mentioned 15% from this age-group. The gender balance among customers reported by Bressani et al. (5) and observed here were comparable. Parallels were also found for the time of greatest business between the two studies.

In an era of concern for the social and economic emergence of the woman, it is important to underscore the possibilities for earning money in this sector. In the park, we found several

women vendors who were the sole money-earners for their families. Further, several migrants have found a job in the street food business. However, salaries for employees were below the minimum wage for construction workers or policemen. Similar situations were also observed in a study carried out in Bangkok (20).

The economic effects of street foods for the vendors themselves, however, are not the only considerations. We have considered the costs of the meals in terms of the minimum wage and the value of the canasta basica, an index by which poverty is defined. For the very poor, i.e. those who earn less than the income to afford a single canasta basica, the purchase of street food meals at the current prices in the park would represent a disproportionate use of the daily income of a family of five for the member(s) who consumes a meal at this location. Viewed in another context, the legally-mandated minimum wage for Guatemala would only provide for the wage-earner of a family an income equivalent to one-half the cost of the canasta basica. As about 60% of all Guatemalans (albeit with a lower percentage in the capital city) are classified as among the very poor (21), the street foods of the Parque de la Concordia must be considered a relatively expensive luxury. These findings are confirmed by another study conducted in Bangkok almost a third of the consumers complains where about street food being too expensive (20).

CONCLUSION AND RECOMMENDATION

Street food cannot — and should not — be eliminated. Even if one is convinced by the evidence that the emergence of street foods is an evil, it is clearly a necessary evil, in the context of employment opportunities and income for the vendors, many of whom are women. Further, for the sustenance of individuals requiring a repast while away from their homes, street food is conveniently located in the areas where consumers find them-selves at lunch-time. On the other side, the concept of street foods serving low-income people does not necessarily mean poor or very poor people. However, prices were always lower on the street. So, for the roughly 60% of the metropolitan population who earn a family income below the poverty line and find themselves too far from home to consume the customary household meal at mealtimes, street foods represent a viable alternative. It also has to be considered that the street food system in Guatemala functions well, at least for the abundant social groups, such as street kids and handicapped people. Foods in the formal «American-style» restaurants would offer, perhaps, more microbiological safety but at a higher price and at the cost of further deviation from the food pattern of a healthy diet and consequent higher chronic disease risk.

Observation of the street food vendors in the Parque de la Concordia showed that there is still ample room for improvement in terms of hygiene. However, improvement must come from three sides: vendors; clients; and government.

The public must gain general knowledge about food hygiene, which would also benefit the food handling practices at the street food vending site. Customers of the vendors could learn to distinguish between low-risk and high-risk foods (22) and also to avoid vending sites that do not appear to be clean. Further, the government has to control the safety of the primary ingredients purchased in markets. Municipal officials also have a role in assuring another important item: clean water. A possible way to ensure a safer water supply would be to construct cisterns to keep the water in a closed environment during times when water is not flowing through the piped system. The sanitary situation of public bathrooms is not justifiable; it is a health risk for the whole population and should be improved as soon as possible. With respect to the providers, food production could also be improved by using hygienic kitchen equipment. In partnership with government, improving the accessibility of equipment to provide for periodic renewal is worthy of consideration. For example, the promotion of the ice chests would be an easy means of improving storage practices, since these items are frequently found at vending sites.

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