

Assessment of sanitary and hygienic status of catering establishments of Awassa Town

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Abstract: A cross-sectional survey was conducted to assess the sanitary status and hygienic practices of catering business establishments in Awassa Town, Southern Ethiopia, February to April 1996. Data were collected using standardized questionnaires, free listings, parasitological and bacteriological laboratory analyses. A total of 164 catering establishments were identified and investigated. They had about 1023 workers with daily customer services of about 14,965. Water was found to be available in most (89.7%) of the establishments and sanitation coverage (defined as the presence of latrine) was 98%. The overall prevalence of intestinal parasites among food handlers was 63%, with *Giardia Lamblia* (33.3%), *Entamoeba histolytica* (21.5%), *Ascaris lumbricoid* (18.2%) and hookworm species (10.8%). The water supply and sewerage authority (WSSA) water supply was found to be bacteriologically potable. Inadequate follow-up of catering establishments, absence of optimum standard procedures and guidelines for business operation, poor regular refurbishment practice, inappropriate liquid and solid waste disposal system, and poor personal hygiene of food handlers were the major findings. Multi-lateral and inter-sectoral collaboration and cooperation is mandatory to design the rapidly growing urbanization and industrialization of the Town by involving municipalities, the local administrative council, the health sector, owners of the establishments and the community to work together and comply with the optimum standards and procedures. Recommendations are forwarded to ensure customer expectations, needs, and demands. [*Ethiop. J. Health Dev.* 2000;14(1):91-98]

Introduction

The provision of safe and adequate water supply, proper disposal of human excreta and refuse, the control of the safety of food, vegetables and beverages from disease causing organisms or their poisonous products, and the control of flies, lice, mosquitoes, etc. are man's first line of defense against disease (1). A high incidence of enteric diseases associated with poor sanitation is characteristic of the disease picture in many developing countries of the world. The best ways of combating these diseases from cost-benefit and cost-effectiveness points of view are: the provision of safe drinking water, the practice of food hygiene, and the sanitary disposal of excreta (2). Awassa, the capital town of Southern Nations, Nationalities and Peoples Regional State (SNNPR) is a young town founded in

1959/60. It is located 275 km South of Addis Ababa along the Ethio-Kenya international road. The town's population of 100,000 is composed of two districts each constituting of 14 Kebeles (3). The altitude is about 1680 meters above sea level with an annual maximum rainfall of 933 mm and a temperature ranging from 12.3°C to 27.29°C. Awassa, being the political center for the Region, showed a rapid increase in urbanization, industrialization, and tourism with the resultant increment in the number of business catering establishments. The census report of licensed and tax-paying establishments showed 56 hotels, 12 bars, 20 restaurants, 27 "tej-bet" (local drink houses), 11 groceries, 16 cafeterias and 29 butcher shops. There are textile, ceramics, cement, flour and Cecil factories. Higher educational institutions for health assistants, teachers, and agriculture are available within the town (4). Water supply is provided by the Water Supply and Sewerage Authority (WSSA) and a 24-

hour power supply by the Ethiopian Electric Power Authority. The great majority of the various eating, drinking and hotel establishments are functioning with no standard guidelines or requirements. Catering services, by virtue of their scale and complexity, are potentially capable to produce disastrous health consequences, if the strictest principle of hygiene is not maintained (5). The authority for licensing and controlling food and drink establishments, including the enforcement of sanitary measures for food safety in premises such as catering to tourists, is entrusted to the Hotel and Tourism Commission (Proclamation No 182/1980). The Ministry of Trade and the Municipalities are also involved in issuing licenses to traders engaged in this field. However the legal support and the necessary multi-sectoral coordination for the control and monitoring of these establishments have not been realized. Strategies to ensure that food is safe, wholesome and nutritious are essential components of any health care system (6). Although some of the more serious food borne diseases, such as typhoid, cholera, shigellosis, and parasitic infections have been under control in countries with adequate sanitation, they still constitute an important cause of mortality and morbidity in developing countries (7). The aim of this operational study is to assess the status of water supply (adequacy and safety), excreta and waste disposal (liquid and solid), and personal and environmental hygiene (food handlers and working premises) in Awassa Town for the promotion of public health and the quality of service rendered as defined by the establishment license. The final outcome of the study is believed to assist the concerned parties in managing and improving of the business catering establishments in addition to generating base-line information for similar and related studies and interventions in the future.

Methodology

A cross sectional study was designed and conducted on all catering establishments in Awassa town having their lists from Town

between March and June 1996. Their list was obtained from the Municipality. Data collection was effected by senior sanitarians and laboratory technicians under the supervision of the research team.

Water samples were collected from the main reservoir and 17 major distribution points and analyzed by multiple tube fermentation techniques. Pretested, structured, and open-ended questionnaires were administered to all licensed catering establishments. Although it is true that unsanitary conditions prevail in unlicensed establishments, in this study they were not included because our study populations are only the licensed ones. The questionnaire was designed to produce general information on socio-demographic characteristics, repair and ventilation status of the premises, availability and acceptability of sanitary facilities, handling and storage of food and characteristics of food handlers. They were also asked for their views (free listings) on determinants of hygienic and sanitary conditions under the headings of 1) sanitary and hygienic problems that were existent in that particular establishment, 2) major hygienic and sanitation problems that were existent in Awassa Town, 3) possible hygienic and sanitary solutions for individual establishments and for the town in general. Food handlers working in hotel and bar establishments were randomly selected for stool examination by the Center for Health Research and Laboratories (direct microscopy). To increase the accuracy rate, two slides were tested for each sample. Gross sanitation and hygienic problems were addressed and discussed with the owners of the establishment at the end of each session whenever such findings were evident.

Data entry, cleaning and analysis were made using EPI-INFO version 6 statistical package. Differences were measured by estimating odds ratio with 95% confidence intervals. The free listing is summarized appropriate tabulations.

Results

General information: A total of 164 catering establishments were investigated during the survey. The majorities (96.2%) were owned

by the private sector while the remaining belonged to government and public agencies; and 107(66.2%) of these establishments serve various type of meals to their customers. It is only 48(29.3%) that did not serve any kind of meal. About 14,965 people were found to be served daily. Most of the establishments (91%) were licensed during the survey while the rest (9%) were not licensed, and 138(89%) of the managers were found to be literate (Table 1).

Table 1: Literacy status of managers of catering establishment of Awassa Town, SNNPR, April 1996.

Educational status	Number	%
Illiterate	26	15.8
Elementary (1-6)	48	29.3
Junior Secondary (7-8)	30	18.3
Secondary (9-12)	49	30
Higher Education (12+)	11	6.7
Total	164	100

Status of establishment: In 133(81.1%) of the establishments, the floors are concrete, while 23(14.0%) have tiles. Most of the walls (77.6%) were smooth, impervious, and easily cleanable; the others (22.4%) were difficult to clean. Ceilings were found to be smooth and dust free in 76.9% of the cases. The remaining 23% had problems of continuity and cleanness. Most of the catering establishments of Awassa Town are recently established as 54% of them were built in the last five years (Table 2).

Inspection: 20.5% of the establishments had never been inspected by any kind of

Table 2: Duration of service of catering establishments, Awassa Town, SNNPR April 1996.

Duration of service in years	Number of Establishment	%
0-5	88	53.7
6-10	23	14
11-15	19	11.6
16-20	4	2.4
21-25	9	5.5
26-30	4	2.4
Not known	17	10.4
Total	164	100

responsible body. The pattern of inspection was found to be irregular and there was no established guideline (Table 3). As reported, 62.3% of the establishments have at least one or two supervisory inspection within the last five month and the type of inspection is supervisory visit made by a responsible institution mentioned above to check whether the catering establishment is running it's activity according to the rules stated in licensing procedures.

Table 3: The last supervisory visits made to catering establishments of Awassa Town, SNNPR as reported in April 1996.

Supervisory visits	Number	%
No recallable visit	34	20.7
3 years (36 months) ago	1	0.6
2 years (24 months) ago	3	1.8
1 year ago	19	11.6
10 months ago	1	0.6
6 months ago	4	2.4
< 5 months ago	102	62.3
Total	164	100

Maintenance: Of these establishments 74.3% had some kind of refurbishment within a year and 17% did not recall the last time of refurbishment (Table 4).

Food Handlers: A total of 558 males and 465 females were working in the different catering establishments during the survey. Among them six(0.6%) had health examination during the last six months. It was done on regular bases in two of them from those who had a check-up. The rest 1017(99.4%) did not have any kind of health check-ups (Table 5).

Table 4: Status of maintenance, catering establishments, Awassa Town, SNNPR, April 1996.

Maintenance	Number	%
One year ago	123	75
Two - Three years ago	12	7.3
Four - Five ago	1	0.6
Not recallable	28	17.1
Total	164	100

Table 5: Hygienic status of food handlers, catering establishments of Awassa Town, SNNPR, April 1996

No	Parameter	Status		Total
		Yes	No	
1	Regular check up	6(0.6%)	1017(99.4%)	1023
2	Wear outer garment	880(86%)	143(14%)	1023
3	Clean gown	757(74%)	266(26%)	1023
4	Hair Net	121(11.8%)	902(88.2%)	1023
5	Trim finger nail	806(78.8%)	217(21.2%)	1023

Hygiene education was given in 71(43%) of the establishments on informal bases; the rest (57%) have never heard of hygiene for catering establishment.

Water and sanitation: While 153(98.7%) establishments have water system in their compounds, majority of them did get from public distribution taps (65.8%). There were about 505 toilets (Squatting holes) in 155 establishments during the survey. In most of the cases (76.5%), the toilets were not separated for males and females. Only 36(23.5%) were found to have separate toilet

rooms for the workers of the establishment. More over, in 69(47.6%) facilities, the population of flies was more than tolerable. Most of the toilets (83.2%) were pit latrines the rest (16.8%) having water flush (Table 6).

Washing basins for dishes were available in 94(57.3%) of cases while 60(36.6%) of the establishments did not have. The catering establishments dispose the solid and liquid wastes in open fields in 94(57.3%) and 43(27.9) settings, respectively. Out of the total of 154 solid waste disposal systems 57(37%) were attractive to flies, with the rest

Table 6: Status of water and sanitation, catering establishments of Awassa Town, SNNPR, April 1996.

No	Sanitation facility	Status		Total
		Yes	No	
1	Pipe water system	162(98.8%)	2(1.2%)	164
2	Toilet with a cover	161(98.2%)	3(1.8%)	164
3	Latrine with a cover	58(36%)	103(64%)	161
4	Latrine clean and attractive	69(43%)	92(57%)	161
5	Fecal material around the toilet	33(20.5%)	128(79.5%)	161

(63%) in better condition. In 48(31.2%), the liquid waste disposal system is found to be attractive for mosquito breeding. Sanitized utensils drying racks were available in 53(36.1%) of the cases only, while the others (93.9%) did not have them. The sanitized utensils storage and protection from dust and flies were not fulfilled by 109(74.1%) of the establishments. Proper covering of sanitized utensils was observed in 29(87.8%) establishments. Most of the establishments (63.4%) did not have proper kitchen setups, and the other 67.3% did not have garbage cans in their kitchen, restaurant, or surroundings.

Raw and cooked foods were stored separately in 77.2% of the cases, with 22.8% stored mixed. In 34(33.7%) of the establishments, there were no refrigerators to store highly perishable foods.

Accommodations: The survey revealed that there were a total of 1021 bedrooms of various quality and capacity level in 85 establishments of Awassa Town. In 34(40%) of the establishments the bed rooms were not clean (ceiling, floor, wall, light, and smell) and do not have garbage can during the study. Reportedly 79(92.9%) of the establishments cleaned bed sheets daily, while the others

(7.1%) did it every other day. It was observed that 69(81.2%) of the bed rooms did have visible insects, such as cockroach, bed bug that disturb normal sleeping. Blankets were not given due attention to ventilate and wash them in 82(96.5%) establishments and 75(88.2%) of the settings reported that they do have reserve bed sheets. No regular maintenance program was reported in 47(35.3%) of the accommodations.

Water samples: All water samples analyzed from the main reservoir and 17 distribution points (five public fountains and 12 hotels) were found to be bacteriologically potable.

Prevalence of intestinal parasites: Randomly selected 119 (10%) food handlers who were working in hotels and bars were examined by direct microscopy method for intestinal parasites and 75(63%) were found to be positive for different species. The most dominant findings were *Giardia Lamblia* (33%), *E. histolytica* (21.5%), *Ascaris lumbricoides* (18.2%), and Hookworm species (10.8%) (Table 7).

Table 7: Prevalence of intestinal parasites among food handlers, catering establishments of Awassa Town, SNNPR, April 1996.

S/N	Name of parasites	Number of food handlers	Percent
1	<i>Giardia lambilia</i>	31	33.3
2	<i>Entamoeba histolytica</i>	20	21.5
3	<i>Ascaris lumbricoides</i>	17	18.3
4	Hook worm species	10	10.8
5	<i>Strogylodes stercoralis</i>	7	7.5
6	<i>Tenea species</i>	4	4.3
7	<i>Trichuris trichura</i>	3	3.2
8	<i>Hymnolepis species</i>	1	1.1
	Total	93	100

Summary of the free listing: Respondents of catering establishments were given chance to enlist the different views that are prevalent in their catchment and town areas.

Their views are summarized in four general categories.

a) The sanitary and hygienic problems that exist in particular establishments were summarized by the the managers as:-

- No adequate toilet rooms

- No waste disposal site
- No hand washing basin
- No adequate establishment space
- Long municipal bureaucratic process
- No adequate water pipe line system

b) summarized by the establishment observers as:-

- Absence of public latrines
- Absence of municipal solid waste disposal system
- Absence of sewerage system
- Problem of dead animal bodies (horses, cats, dogs ...etc)
- Inefficient. The main sanitary or hygienic problems that exist in Awassa Town were reported of flood drainage system
- Lack of regulatory mechanisms for horse waste collection

c) Possible solution for sanitary or hygienic problems in individual establishments was recommended as:-

- Implementing refuse disposal system
- Hygiene education for food handlers, managers, and owners of catering establishments.
- Modification or structural adjustment of establishments following standard procedures through joint guidelines prepared by MOH and town municipality.
- Regular follow-up of the establishment and constructive follow-up to satisfy needs, expectations and, demands of the customer.
- Effective sanitation of utensils used for preparation and provision of food.
- Regular follow-up and health check-up of food handlers.

Discussion

The current study on the assessment of hygienic and sanitation conditions of catering establishments in Awassa town revealed the unsatisfactory status of operational level, capacity, hygienic, and sanitary conditions and future direction. The principal findings that were identified include:

- a) Good coverage of safe water (defined as

the availability of tap water) and latrine availability (defined as at least presence of a single latrine)

- b) Inadequate supervision and inspection by the municipality and the local health sector, (Woreda and Zone level).
- c) Inappropriate solid and liquid waste disposal
- d) Absence of food handlers' health check-up
- e) Absence of hygiene education to owners and managers of the establishments and food handlers.
- f) Absence of coordinated effort during the issuing and renewal of licenses for catering establishment.

The study revealed that 96.2% of establishments were privately owned, 91% were licensed, and 89% of the managers were literate. The educational status of the managers, the number of licensed catering establishments and the number of catering establishments that are privately owned are some positive inputs. It can easily be understood that sustained supervision and supportive guidelines can achieve behavioural changes. A study done in Addis Ababa revealed that 95.2% of the catering establishments were privately owned, 73.1% of the managers were literate and 70.9% of the establishments were licensed (8). The findings (ownership, literacy, licensing) have not shown significant difference when compared with the current study (OR=1.25, 95% CI (0.48-3.44); OR=3.12, 95% CI(1.75-5.54); OR=4.17% CI(2.28-7.77).

The physical status of different establishments and adequacy of light and ventilation were not well looked at in the town. Most of the settings violate one or more standard requirements of business catering establishments. Poor repair condition, lack of adequate space, inadequate coordination during the licensing process of establishments were few reasons for the violations. There were unplanned and crowded housings some of which are residential and later converted to other purpose buildings meeting the standard requirements. Such problems were also observed in Addis Ababa in the study

mentioned above. The status of being licensed or not did not show any significant differences in physical status in the current study. This can be attributed to inadequate and an uncoordinated licensing procedures and supervision. Special attention must be given in constructing seemingly supportive facilities while they are very crucial, i.e., like kitchen and sanitary facilities.

Daily, 14,965 costumers were found to be served by the establishments serving lunch (82%), dinner (74%), snack (18%), and breakfast (6.4%). The share of lunch and dinner is too high, which can clearly indicate high proportion of hotel customers.

The various quality indicators of food handlers, i.e., regular check-up, wearing outer garments, wearing clean gown, wearing hair net, and trimming fingernails were not universally practiced. The solid and liquid waste disposal system was non-existent with 94% of the establishments using open field. The role of the municipality is hardly shown to be of any influence to this effect. The study done in Addis Ababa revealed that 89.8% of the establishments disposed their solid wastes using the municipal refuse collecting containers or by using municipal lorries (OR=11.79, 95% CI 7.68-18.14), and 10.7% of the workers had medical examination (OR=20.27, 95% CI(8.74-50.33)(8).

Due to lack of adequate institutional arrangement and low financial and technical sustainability, most administrations are unable to cope with the waste generated by the unregulated and rapidly expanding cities.

For sanitized utensils, drying racks were absent in 63.9% of the establishments, and it can be concluded that most of the catering business establishments were not hygienically acceptable at any degree or level.

Neither proper kitchen set-up (63.4%) nor garbage can (67.3%) were observed in the kitchens, restaurants or surroundings. All these findings clearly indicated that contaminations of the raw and cooked foods were evident which later could result in food and water related diseases. In 33.7% of the establishments, there were no refrigerators

which make it difficult to understand how they were licensed. A series of hygienic studies conducted in Awassa Town demonstrated that poor service and uncollected domestic refuse, often mixed with human and animal excreta, piles up on the streets, or is dumped in drainage systems or surrounding areas. These pose not only a serious health risk to the population but also lead to considerable environmental degradation (9). It is clear that, in spite of the establishment of municipal institutions responsible for public cleansing and the investment of considerable human and financial resources, the problems are far from being solved.

Regarding food handlers, detailed socio-demographic analyses were not designed due to limited resources.

In conclusion Awassa Town, the cultural and political center for Southern Nations, Nationalities, and Peoples Region, is one of the country's rapidly growing cities. About 54% of the establishments were constructed or reverted to catering business firms, within the last five years. The democratization, decentralization and privatization policy of the Federal Government has initiated a number of investors. To this effect, the municipalities and other relevant sectors should work together to maintain the standard qualities towards the fulfilment of customers' expectations, needs, and demands. Currently, the hygienic assessment survey revealed areas for further improvement and follow up. Developing and adhering to the developed guidelines is very crucial. In summary, the establishments were not given the necessary guidelines and support to improve their status.

The following recommendations are made to improve the current status of catering establishments in Awassa Town.

A. Managerial

1. Develop guidelines, standards, rules and regulations for catering business establishments and reinforce them with laws.

2. Establish regular supervision and inspection systems for catering establishments and give appropriate feed-back to all owners or managers at regular intervals.
3. Create consultation for owners or managers the establishments to promote better practices

B. Technical

1. Promote and strengthen the health check-up of food handlers on a regular basis (every three months) and distribute clearance identity cards for food handlers as well as the owners
2. Promote appropriate solid and liquid waste disposal system and develop technologically feasible and scientifically acceptable local mechanisms for excreta and refusal disposal
3. Promote and strengthen hygiene education on relevant topics for food handlers, owners managers, and the general public by celebrating the hygiene days, etc.

C. Coordination

1. Strengthen sector involvement and work together to promote optimum quality, i.e., among the municipality, MOH, Ministry of Trade, Industry & Tourism, and other relevant sectors
2. Maintain consultation among relevant offices during licensing and renewal of licenses.

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