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Hygiene of Touristic Hotel Kitchens: The Case in Adiyaman, SE Turkey

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Abstract: The need of hygiene education along with hygiene quality of kitchens at four Tourism Ministry licensed touristic hotels in Adiyaman, SE Turkey was determined. The evaluation is undertaken via interviews with 25 kitchen staff of the three and four star hotels. Majority of the kitchen staff (68%) did not receive training on hygiene before employment; others had trained on food and personnel hygiene by hotel managers who does not have profession on the subject matter. Due to lack of knowledge on hygiene of staff, the overall personnel hygiene is below country and international standards. Accordingly, staffs kitchen management was not considered as hygiene according to touristic measures of the Ministries of Tourism and Health although Adiyaman is one of the main touristic destinations of Turkey hosting more than 200.000 tourists annually. Unfortunately, only one hotel's kitchen hygiene is classified as good. Thus, there is an urgent need for training along with continuous inspection of local authorities responsible for health and tourism.

Key words: Hygiene, hotel kitchen, tourism

INTRODUCTION

Customer satisfaction of touristic hotels is actually based on the quality of hygiene of food, rooms and kitchen as well as employees (Kozak, 2001). Kitchens, functioning in relation to the star class of the hotels, are generally core service centers. Customer satisfaction is a must for successful management in tourism in which kitchen hygiene set the level of the satisfaction (Crouch *et al*., 2004; Guzzo and Domici, 2010). Since all levels of food production are based on human interference, the level of information of employees' is crucial in establishing standards in hotel food security/hygiene (Wolf, 1992; O'Fallon and Rutherford, 2009). These standards consists hygienic production and storage of foods by kitchen employees, delivering products with same standards to customer by service staff for healthy and quality food consumption which all necessitate good level of knowledge and equipment (Ozkaya *et al*., 2008).

Besides taste and appearance of foods, the food security is also an essential component of industrial kitchens in tourism due to increasing customers' consciousness on food hygiene at their tourism destinations particularly in developing ones (Belisle, 1983; Lubbe, 2003). Turkey's tourism establishments in Mediterranean, Aegean and Marmara regions i.e. western part meet international standards of hygiene, but this cannot be pronounced for all southeastern and eastern tourism establishments (Cetinel and Yolal, 2008). Therefore, food, kitchen and personnel hygiene in hotels of Adiyaman are of utmost importance for sustaining development of tourism income of the town. Thus, the level of hygiene of food, staff and kitchens at four hotels in Adiyaman (SE Turkey) were studied to delineate shortcomings.

MATERIALS AND METHODS

The study was undertaken at four hotels in Adiyaman which have intense accommodation throughout the year. Data were obtained by observations and interactive interviews with 25 kitchen employees. Statistical data of absolute values and percentages were calculated by SPSS 17.0 software.

The hygiene classes of kitchen were evaluated according to Cigerim and Beyhan's (1994) hygiene evaluation form which comprises 96 criteria under 6 titles (Table 1). The evolutions of criteria, based on 1000 points, are classified as percentages (Table 2).

RESULTS AND DISCUSSION

Hotels generally prefer to employ local people for services in Adiyaman due to less salary demand of local workers. The 88% of the kitchen employees were male with 20-30 age range. Majority of the employees had high school degree and most of them were smoker (Table 3).

Hygiene knowledge level of employees: Most of the employees, 68%, did not receive any training or education prior to employment work. Trained ones received courses on food and personnel hygiene from hotel managers (Table 4) who does not have profession on hygiene. This showed that employees were trained by inner organizations of hotels instead of professionals.

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Table 1: Hygiene evaluation form measures for hotel kitchens (Cigerim and Beyhan, 1994)

Measure topic	Number of criteria	Evaluation score
Food storing zones	17	175
Food processing zones	20	180
Dish washing and garbage area	13	95
Toilet and other zones	10	130
Staff hygiene	27	335
Food hygiene	9	85
Total	96	1000

Table 2: Hygiene classes based on hygiene evaluation measures

Classification	Range (%)
Very good	86-100
Good	71-85
Acceptable	61-71
Unhealthy	<60

Table 3: Demographic properties of kitchen employees

Age (years)	N	%
20-30	13	52.0
31-40	8	32.0
40+	4	16.0
Gender		
Male	22	88.0
Female	3	12.0
Level of education		
Illiterate	-	-
Primary	4	16.0
Secondary	5	20.0
High school	14	56.0
University	2	8.0
Smoking		
Non-smoker	11	44.0
Smoker	14	56.0
Total	25	100.0

Table 4: Hygiene education of kitchen employee

Hygiene education	N	%
Received	8	32.0
Not trained	17	68.0
Total	25	100.0
Source of information		
School	2	10.5
Hotel managers	9	47.4
School + hotel managers	3	15.8
Private companies	1	5.3
Government certified courses	4	21.0
Topics of training		
Food hygiene	7	36.9
Personal hygiene	3	15.8
Tools and equipment hygiene	-	-
Preparing-processing hygiene	2	10.5
Microbial hygiene	-	-
Garbage	-	-
Hand hygiene	-	-
Dish washing	-	-
General hygiene + disinfection	2	10.5
Food hygiene + preparing/processing hygiene	2	10.5
All	3	15.8
Total	19	100.0

Employee hygiene: Human body is most suitable media for reproducing and living of harmful bacteria in hotel kitchens (Alexiou *et al*., 1989; EPA, 1999). Several outbreaks have been reported in hotels caused by bacteria (EPA, 1999) which necessitate, utmost care should be taken on kitchen employees' hygiene and health since any inattention to food and personal care will easily affect customers (Aktas and Ozdemir, 2005). The personnel hygiene of employees was evaluated with 27 criteria (Table 5) in which 9th, 21st, 22nd and 24th have serious shortcomings. Moreover, none of the hotel received any score from 8th, 16th, 23rd, 25th, 26th and 27th criteria. Employees were unaware to hand hygiene that was also reported by Sert (2006) who determined fecal bacteria on kitchen employees in Edirne (W. Turkey) which all show imperilment of customer health.

Food hygiene: The risk of microbial pollutions of foods persist even employee and kitchen hygiene in hotels are achieved. For decreasing the risk of pollution care should be taken de-contamination with microorganisms at all stages of food handling which includes buying, shipment, receiving, storing, preparation, cooking and servicing of foods (Lelieveld *et al*., 2003; Peariso, 2006). Hotels food hygiene was measured with 9 criteria. Criteria 29th was imperfect for 3 hotels and only one hotel sampled meals for laboratory check and kept in cold storage (Table 6).

Storage area hygiene: There are 17 criteria for evaluation of storing hygiene. Criteria 44, 45, 46, 47 and 49 were not fulfilled in any hotels studied which were lack of thermometer, insufficient ventilation, exposing to sun light, untidy and unsecured shelves along with fluctuating dry storage temperature due to absence of temperature control system (Table 7). The overall conditions of storage in hotels are not suitable for hygiene standards. However, cold storage conditions are relatively better than dry storage since Adiyaman has long dry and hot summers that negatively affect freshness of the foods.

Five star hotels in Turkey were scored with 84.5% which generally have major shortcomings in storing cooked and raw food in same environment without protective sealing (Duranoglu *et al*., 2008).

Food processing area hygiene: Food hygiene was evaluated with 20 criteria. Criteria 57 and 58, lightning and ventilation properties, found to be insufficient at all kitchens (Table 8). Cooking areas in hotels have better hygiene conditions than preparation and cooking and food processing areas (Table 8). The averages of food processing area in studied hotels are 70.8% which was determined as 85% for 5 star hotels by Duranoglu *et al*. (2008). Babur (2007) reported that although, ventilation systems are sufficient, working environment temperature is the most common shortcoming in the country as the case in Adiyaman.

Table 5: Personal hygiene evaluation scoring

																										Total	
Hotels	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	335	%
1	15	15	15	15	0	0	15	0	0	15	15	5	5	5	0	0	0	15	15	15	0	0	0	0	0	0	0	165	49.3
2	15	15	15	15	0	0	15	0	0	15	0	0	5	5	15	0	0	15	15	15	0	0	0	0	0	0	0	160	47.8
3	15	15	15	15	15	15	15	0	0	15	15	5	5	5	15	0	5	15	15	15	0	0	0	15	0	0	0	230	68.7
4	15	15	15	15	0	15	15	0	15	15	0	0	0	0	0	0	5	15	0	15	15	15	0	0	0	0	0	185	55.2
Average																												185	55.3

Table 6: Food hygiene evaluation scoring

										Total	
Hotels	28	29	30	31	32	33	34	35	36	85	%
1	5	0	5	15	5	15	5	0	0	50	71.4
2	5	0	5	15	5	15	5	15	15	80	94.1
3	5	0	5	15	5	15	5	15	15	80	94.1
4	5	5	5	15	5	15	5	15	0	70	82.4
Average										70	85.5

Table 7: Storage hygiene evaluation scoring

	Cold storage						Dry storage											Total	
Hotels	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	175	%
1	0	0	0	15	0	0	15	0	0	0	0	5	0	0	0	5	15	55	31.4
2	15	0	0	0	0	15	15	0	0	0	0	0	0	15	5	5	15	85	48.6
3	15	15	15	15	5	15	0	0	0	0	0	5	0	15	5	5	15	120	68.6
4	15	15	15	15	5	15	15	0	0	0	0	0	0	15	5	5	15	135	77.1
Average																		98.8	56.4

Table 8: Food processing area hygiene evaluation scoring

	Preparation and cooking area							Food processing area										Cooking area			Total	
Hotels	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	180	%
1	5	5	5	0	0	5	15	0	0	0	0	15	15	5	0	15	5	5	5	5	105	58.3
2	0	5	5	0	0	0	15	15	15	15	5	0	0	0	15	0	0	5	5	5	105	58.3
3	5	5	5	0	0	5	15	15	15	15	5	0	15	5	15	15	5	5	5	5	155	86.1
4	5	0	5	5	5	5	15	15	15	15	5	15	15	5	0	0	5	5	5	5	145	80.6
Average																					127.5	70.8

Table 9: Dish washing and garbage areas scoring

														Total	
Hotels	74	75	76	77	78	79	80	81	82	83	84	85	86	95	%
1	15	5	15	5	5	0	0	5	5	15	5	5	5	85	89.5
2	0	0	15	0	0	0	0	5	5	15	5	5	5	55	57.9
3	0	0	0	5	5	0	0	0	0	15	5	5	5	40	42.1
4	0	0	15	5	0	0	0	5	5	15	5	5	5	60	63.2
Average														60	63.2

Dish washing and garbage areas hygiene: Thirteen criteria were used for dish washing and garbage area hygiene evaluation. None of the hotels under study meet 79th and 80th criteria and only one hotel fulfilled criteria 74 and 75 (Table 9). All hotels met the criteria 83, 84, 85 and 86 which were on garbage hygiene. The overall score of 63.2% for Adiyaman is quite less than five star hotels 91.8% score in the country (Duranoglu *et al*., 2008) and the standards of the hotels abroad (Seaman and Eves, 2006; Seaman, 2010).

Toilets and employee room hygiene: Criteria from 87 to 96, a total of 10, were employed for hygiene scoring of toilets, showers and dressing rooms i.e. employee rooms in studied hotels (Table 10).

In all hotels, criteria 94 did not met which was keeping a distance for dressing rooms from toilets and storage areas and with adequate capacity. The distance between dressing rooms and storage areas of hotels and offices from toilets should be kept minimum 10-12 m for meeting hygiene criteria (Official Gazette, 2005).

Table 10: Toilet and employee room hygiene evaluation scoring

											Total	
Hotels	87	88	89	90	91	92	93	94	95	96	130	%
1	15	0	15	15	0	0	0	0	0	0	45	34.6
2	15	15	0	15	0	15	15	0	15	5	95	73.1
3	0	0	15	15	15	15	0	0	0	5	65	50.0
4	0	15	15	15	15	15	0	0	0	0	75	57.7
Average											70	53.9

Table 11: Hygiene classes of the hotels in Adiyaman

	Classification
Personal hygiene	Unhealthy
Food hygiene	Good
Storage areas	Unhealthy
Food processing areas	Acceptable
Dish washing and garbage areas	Acceptable
Toilet and other areas	Unhealthy

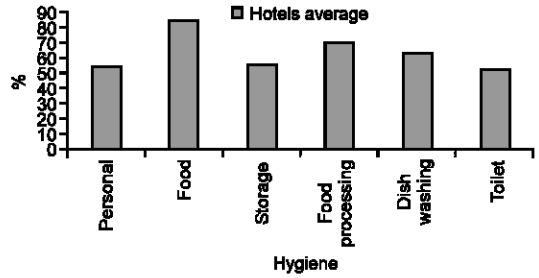

Fig. 1: The overall score of hotels (average) hygiene levels

Total hygiene score of hotels: The scores of criteria determined in the study are provided in Fig. 1 and Table 11. By evaluation of 96 criteria on hotels' physical and employee hygiene, the overall score of the hotels hygiene of personnel, food, storage, food processing, dish washing and garbage and toilet were calculated as 64.13%. Highest score was attained in food hygiene where lowest was in personnel hygiene (Fig. 1, Table 11).

The hygiene classes of hotels, except food hygiene, in Adiyaman are below normal from the hotels in other parts of the country (Dundar *et al*., 2000). The scores measured in hotels in Antalya were 84.5% for storage, 84.9 for food processing, 91.8% for washing and garbage areas and 100% for toilets (Duranoglu *et al*., 2008).

Conclusion: Southeastern Turkey, although is rich in cultural and natural resources like Mesopotamia, Euphrates and Tigris Rivers, however does not compete with the hygiene standards of western part of the country. As determined in this study, employees' insufficient knowledge on hygiene yielded unsatisfactory results for themselves and physical parts of the hotels in Adiyaman. Moreover, infrastructural bottlenecks boosted hygiene problems such as uneven temperature control in working area of kitchens, location of toilets. Also, the routine control of staff in charge of health and tourism in the region seems substandard. Unfortunately, lowest score was attained in personnel hygiene which directly and/or indirectly affects other issues of hygiene in hotels. This is most probably due to the lack of proper education program which also determined in the study. We suggest an urgent and continuing training program to be launched by local tourism administrators of the region. This may help to increase the quality of hotels in the region which is also extremely important for local and global customers' health because any health problems easily and hazardously spread to the world via increasing tourism activities throughout the world.

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