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Opinions of the workers in the hotel kitchens of Cappadocia region on kitchen hygiene situations

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Abstract

This research was carried out to learn the opinions of workers in the hotel kitchens of Cappadocia region on kitchen hygiene situations. In the scope of the research, 234 kitchen staff from Cappadocia region were surveyed and 28 hotel kitchens were evaluated. Statistical Package for Social Sciences 22 was used to evaluate the obtained data and to prepare tables. The data obtained from the scale used to measure the level of knowledge of kitchen staff are presented as mean and standard deviation. For the presentation of categorical variables, frequency and percentage values are used. The hotel kitchens operating in the Cappadocia region were evaluated according to the hygiene evaluation form consisting of six different sections and hygiene levels were expressed as a percentage of 1,000 points. The result shows that it is absolutely necessary for hotels to apply the HACCP programme and to increase the supervision in the production areas.

Keywords: Hotel, hygiene, sanitation, food security.

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1. Introduction

Tourism, besides its contribution to human health, brings about a great many benefits such as enriching the manner repertoire of people, enhancing the relation and friendship among people and even providing interpersonal cooperation. However, despite all these positive sides, it could harm the health of both tourists and the staff in tourism and also the communities dealing with tourism unless it does not give services in hygienic conditions (Akdur, 2015, p. 174).

In the hotel businesses where service presentation is of importance and a lot of spaces are used together, high risk of contamination of microorganisms entails the services suitable for health and hygienic conditions. In order to form a secure and healthy environment, it is necessary to consider the factor of hygiene besides cleanliness neatly (Kozak & Cicek, 2005, p. 1).

It is a must that the personnel working in tourism businesses and institutions be trained at every stage and take their own responsibility to protect their health. Unless it is obtained, it is likely that they can catch a great many illnesses. Among the educational programmes peculiar to the personnel, it is of importance to teach basic rules of hygiene (Guler, 2002, p. 24).

In the case of not having talented and enough number of personnel to work in the kitchens of the institutions, it is known that food is cooked in a hurry and superficially, cleaning cannot be made at desired level and that there will be difficulty in supervision. For that reason, the quality of the food will be affected. Therefore, those working in food services should always be trained and warned (Birer, 2002, p. 182).

Hygiene, sanitation and food security are the most important issues to be considered within mass nutrition systems. Not paying enough attention to hotel kitchens poses a very important threat in terms of human health. In order not to endanger human health, necessary precautions should be taken regarding hygiene and sanitation in preparation, production, storing and service processes starting from the purchase of the food.

Health is the greatest treasure a person could ever have. Protecting our health and live in a healthy way is not a phenomenon dependent only upon us. It is necessary that all the people show the highest sensibility on the issues regarding health. All the staff working in the production and servicing of the food must show this sensibility more since they are primarily responsible for their own health and that of the ones whom they serve (Gokdemir, 2009, p. 51).

Unless precaution is taken, food-borne diseases could emerge in people consuming these foods (Walczak, 1999, p. 21).

If personal hygiene is not given necessary attention, it could result in serious problems. Bacteria are everywhere; they can be found at skin, mouth and in certain parts of the body, at clothes, tools and equipment and even in the food itself. These bacteria are contaminated by the inattentive personnel who do not obey the hygiene rule to the food or the tools used and from there they are transmitted to the guests (Gokdemir, 2003, p. 51).

In this sense, it is necessary that hotel kitchens be hygienic and that kitchen personnel pay necessary attention to hygienic issues.

2. Data collection tool

In the current study, a pre-application was conducted on 30 cooks in order to determine the functionality of the question in the questionnaire form that was developed as a data collection tool. As a result of the pre-application, the problems met and necessary parts were corrected by the field experts and the researcher, multiplied at the number of the sampling and applied.

A questionnaire form (scale) made up of 116 questions in total, 8 questions with regard to the demographic information of the kitchen personnel working in the hotel businesses included in the

research, 12 questions regarding hygiene, 96 questions determining the views of the personnel working in the hotel businesses included in the research in terms of various hygienic areas (6 questions regarding cold storage areas, 14 questions regarding dry storage areas, 10 questions regarding food production areas, 10 questions regarding food preparation areas, 3 questions regarding cooking areas, 13 questions regarding the dishwashing area and garbage area, 10 questions regarding toilets and other areas, 10 question regarding food hygiene and 20 questions regarding personnel hygiene) was used. The hygiene control list scale which was taken from the book called Hygiene Education in the Mass Nutrition Systems (Toplu Beslenme Sistemlerinde Hijyen Egitimi) by Beyhan and Cigerim (1994) was used.

3. Data analysis

Statistical Package for Social Sciences 22 (SPSS) was used in the evaluation of the data obtained in the study, and in the formation of the tables. The demographic information of the kitchen personnel and their hygiene status was given in frequencies and percentage values. In the questions concerning the evaluation of the hotel businesses by the personnel working in the hotel businesses in terms of hygiene, the choice of 'Yes' was scored with '1' point and the choice of 'No' was scored with '0' point and the score obtained was turned into hundred system. The scores obtained in determining the status of the business in terms of hygiene were given on the scale of 100.

Score Interval	Hygiene Status
86.0–100.0	Very well
71.0–85.9	Good
61.0–70.9	Acceptable
60.9 and below	Unhealthy

With the frequency and percentages of 'Yes' and 'No' expressions regarding each question for each hygiene area by the evaluation of 28 hotel businesses in terms of hygiene, their mean scores and hygiene status were given as tables. In addition, the means obtained from the scores collected for each hygiene area and standard deviations with hygiene status were given as tables. Finally, total scores obtained from various hygiene areas regarding the evaluation of each hotel business in terms of hygiene and general score were given in tables. Whether there was a statistically significant difference between the mean scores they obtained from nine different hygiene areas of the hotel business was carried out by the method of 'Repeated Measures Analysis of Variance' at the level of $p < 0.001$ and to determine between which mean scores the difference is 'Tukey Multiple Comparison Test' was used. The significance level at statistical analyses was taken as $p < 0.05$.

4. Findings and comment

The current study was planned and carried out to determine the views of 234 kitchen personnel working at the kitchens of 28 hotels acting in the region of Cappadocia over kitchen hygiene conditions. The results obtained were given in tables with their statistical values.

5. Demographic features of the staff

The demographic features of 234 kitchen personnel working at the hotel businesses are given below.

Table 1. The distribution of the demographic features of the staff (*n* = 234)

Variable	Group	Number (*n*)	Percentage (%)
Gender	Male	220	94.0
	Female	14	6.0
Age	20 age and below	14	6.0
	21–25	45	19.2
	26–30	65	27.8
	31–35	55	23.5
	36–40	41	17.5
	40 and over	14	6.0
The status of cooking education	Having the education	141	60.3
	Not having the education	93	39.7
Education status	Illiterate	1	0.4
	Primary	26	11.1
	Secondary	43	18.4
	Vocational high school	103	44.0
	Higher Education	61	26.1
*The place of cooking education	Cooking school	95	63.3
	Private course	12	8.0
	Public education Centre	12	8.0
	University	31	20.7

*The question of the place of cooking education was answered with more than one choice.

As is given in Table 1, 94.0% of the kitchen staff working at the hotel businesses were male and 6.0% were female and 6.0% were at the age of 20 and below, 19.2% were in the age group of 21–25, 27.8% were in the age group of 26–30, 23.5% were in the age group of 31–35, 17.5% were in the age group of 36–40 and 6% were at the age of 40 and over. It was found that 60.3% of the participants had a cooking education while 39.7% did not and as for their general education status, 11.1% were graduates of primary school, 18.4% were graduates of secondary school, 44.0% were graduates of a vocational high school and 26.1% were graduates of a higher education institution. Those who were illiterate were 0.4%. As given in Table 1, high school graduates are the majority. It was also found that 63.3% of the kitchen staff graduated from a cooking school, 8.0% graduated from a private cooking course, 8.0% graduated from a public education centre and that 20.7% had their education from a cooking department at a university. In general sense, it was found that a great majority of the kitchen personnel had their education by means of cooking schools and besides that this education was supported by private courses.

Ercsili (2005) found in a study carried out to determine the hygiene information of a total sum of 100 employees working at eight businesses producing readymade food and serving them in Konya, and having a direct contact with the food in these businesses that the education status of the employees working in the food businesses was as follows; 29.0% primary school, 39.0% secondary education, 24.0% high school and 8.0% higher education. It was found that even though 24% of the employees had high school education in the study by Ercsili, 44% of them was a graduate of a vocational high school in the current study and studies show that the demand for the vocational high schools in these departments increased more (Sarper, 2016, Unal, 2000).

Table 2. The distribution of food security of the employees, hygiene, sanitation, the status of nutrition and health education and where they had their education, and the distribution of whether regular in-service training is given and on which topics the education is given (*n* = 234)

Variables	Group	Number (*n*)	Percentage (%)
Whether they had an education on food security, hygiene, sanitation, nutrition and health	Had	227	97.0
	Did not have	7	3.0
Where and from whom they had an education on food security, hygiene, sanitation, nutrition and health	From the manager of the business	36	15.9
	From a private firm manager		
	From school years	116	51.1
		75	33.0
Whether a regular in-service training is given at the workplace	Given	128	54.7
	Not given	106	45.3
The topics of education given at the workplace	First aid	26	20.3
	Workplace safety	87	68.0
	Food security and hygiene	15	11.7

As given in Table 2, 97.0% of the working staff had an education on food security, hygiene, sanitation, nutrition and health and 3% did not. It was determined that of the personnel having an education on food security, hygiene, sanitation, nutrition and health, 15.9% had information about the courses taken from the manager of the workplace, 51.1% from a private firm authority and 33.0% from the school years.

It was found that 54.7% of the personnel expressed that a regular in-service training is given at the workplace, 45.3% pointed out that such a training is not given. It was also determined that 20.3% of the personnel having a training at the workplace had their training on First Aid, 68.0% on Workplace Security and 11.7% on Food Security and Hygiene.

In a study by Sarper (2016), it was found that 66.7% of the personnel had labour education and 33.3% did not.

In another study by Demirel (2009), it was found that 58.4% had a hygiene education. As is clear, it is necessary that the staff to be employed in institutions should have in-service training in their field regardless of the units they are employed.

Unal (2000) found that 74.7% working in nutrition services did not have a vocational education course.

In a study by Aslan (2005), it was determined that 33.3% of the personnel had an education on food, hygiene and sanitation but 66.7% did not have such an education. Of the ones who had that education, 38.0% had their education from the workplace manager, 29.3% from a nutrition expert and 33.6% had it from a private firm authority.

In their studies, Buyruk and Sahin (2002) found that 62.2% of the kitchen personnel had a hygiene education but 37.8% did not.

Studies show that the importance given to hygiene education in this process has increased, with the increase in the trained personnel number, there became a relative increase in the status of having hygiene, sanitation, nutrition and health education. These findings are not similar.

Table 3. The distribution of the status of having a health control while being employed and which health controls passed (234)

Variables	Group	Number (*n*)	Percentage (%)
The Status of having a health control while being employed	Had	234	100.0
	Did not have	-	-
Which health controls passed	Internal diseases	123	52.5
	Internal diseases, seeing	2	0.9
	Internal diseases, seeing, hearing	43	18.4
	Internal diseases, seeing, hearing, psychological	66	28.2

As seen in Table 3, it was found that 100% of the personnel had a health control when they were employed. It was also determined that 52.5% of the personnel passed their health controls in Internal Diseases, 0.9% in Internal Diseases and Seeing, 18.4% in Internal Diseases, Seeing, Hearing and Psychological ones.

In another study by Erbil (2000), it was found that 40.0% of the employees had a health check and 60.0% had both health check and tuberculosis check in every 6 months.

It was found that 71.4% of the personnel participating in the study carried out by Aslan (2005) had their health control, while 28.6% did not. With these studies and controls, it was determined that nobody was employed without passing a health control as in the current study.

Table 4. The distribution of the frequency of periodical health controls of the employees (*n* = 234)

Variables	Group	Number (*n*)	Percentage (%)
The Frequency of health controls	Every 3 months	16	6.9
	Every 6 months	177	75.6
	Every year	41	17.5

As is seen in the table, 75.6% of the employees had a health control every 6 months, 17.5% had it every year and 6.9% had it every 3 months.

In a study by Aslan (2005), it was found that the frequency of having a health control of the employees in every 3 months was 72.6% and it was 27.6% for those having it in every 6 months.

In a study by Kantar Cikmaz (1997) carried out over the people working in Ankara University Hospitals of the Faculty of Medicine, kitchens and restaurants of the Deanship, it was found that 69.4% of the employees did not have a periodical health control and 30.6% had their health controls only once or twice in all their working periods.

In another study by Eksen, Karakus & Karadag (2004) carried out in the food businesses in the city of Mugla, it was found that 58.3% of the employees had their health controls while being employed, 75.8% did not have periodical health controls, 75.6% did not have a hygiene education and no supervision was made in the businesses on these issues. Depending on the current study and other studies, it was found that health control is more important.

5.1. Findings regarding the hygiene levels of businesses

Table 5. The distribution of hygiene areas of the hotels according to hygienic evaluation

Hygienic Evaluation	Storing Areas				Food Production, Food Preparation and Cooking Areas						Boiler Dishwashing area and Garbage		Toilet and other areas		Food Hygiene		Personnel Hygiene	
	Cold Storage		Dry Storage		Food Production		Food Preparation		Food Cooking									
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Very well	226	96.6	230	98.3	204	87.2	185	79.1	234	100.0	141	60.3	229	97.9	234	100.0	177	75.6
Good	8	3.4	4	1.7	27	11.5	40	17.1	-	-	89	38.0	5	2.1	-	-	54	23.1
Acceptable	-	-	-	-	3	1.3	1	0.4	-	-	4	1.7	-	-	-	-	3	1.3
Unhealthy	-	-	-	-	-	-	8	3.4	-	-	-	-	-	-	-	-	-	-

In Table 5, where the distribution of hygiene areas was given according to hygienic evaluation, because food production, preparation and cooking areas that were regarded as acceptable and unhealthy in the kitchens of the cave hotels are integrated with the fairy chimneys, some kitchens were formed out of standards (the walls must be tiled at least 2 m high) and they were scored as negative.

Table 6. Mean scores of the hotels regarding hygiene and their conditions

Hygiene condition	Mean ± SD	Condition
Cold storage areas	99.4 ± 3.0	Very well
Dry storage areas	97.9 ± 3.5	Very well
Food production areas	94.9 ± 7.5	Very well
Food preparation areas	91.4 ± 9.5	Very well
Cooking area	100.0 ± 0.0	Very well
Boiler dishwashing and garbage area	89.0 ± 7.3	Very well
Toilet and other areas	97.9 ± 4.5	Very well
Food hygiene	99.7 ± 1.6	Very well
Personnel hygiene	90.8 ± 6.5	Very well
Variance analysis result	$F = 143.333$;	$p < 0.001$

Mean and standard deviation values of the hotels regarding their hygiene scores were given in Table 6. The means scores of nine hygiene areas were regarded as 'very well'. As a result of variance analyses made with regard to whether there was a difference between the means of the hygiene area, a statistically significant difference was found between the mean scores ($F = 143.333$; $p < 0.001$) and it was given in Table 7. The results of Tukey multiple comparison test made to determine between which areas the difference were given in Table 8.

In a study by Dundar, Elmacioglu, Topbas & Peksen (1998) carried out into the evaluation of the hygiene conditions of the hospital kitchens in Samsun city centre, the mean scores of the storage areas in the kitchens were 83.2% and the storage areas of 50.0% of the hospital kitchens were 'very well', 37.5% were 'good' and it was thought that it is a positive finding that there was no hospital at the level of 'unhealthy'.

Sargin (2005) found the scores of the employees working in four and five-star hotels regarding food security at the middle level with 60.8% and inadequate with 14.7%.

It was found that the mean scores of the hygiene conditions of the hotels included in the current study were very well compared to other studies. It is of importance in terms of the preference of the Cappadocia region.

Table 7. Variance analysis table regarding the comparison of the mean scores of hotels over hygiene

Variation source	Total squares	Degrees of freedom	Mean squares	*F*	*p*
Between subjects	11649.12	233	49.99		
Hygiene areas	34001.92	8	4250.24	143.33	<0.001
Error	55273.13	1864	29.653		
General	100924.2	2105			

Table 8. *p*-values of the mean scores of the hotels regarding hygiene concerning Tukey multiple comparison test

Hygiene conditions	Dry Storage Areas	Food Production Areas	Food Preparation Areas	Cooking Areas	Boiler Dishwashing and Garbage Areas	Toilet and Other Areas	Food Hygiene	Personnel Hygiene
Cold storage areas	0.001	0.001	0.001	0.160	0.001	0.001	0.999	0.001
Dry storage areas	1	0.001	0.001	0.001	0.001	0.999	0.001	0.001
Food production areas		1	0.001	0.001	0.001	0.001	0.001	0.001
Food preparation areas			1	0.001	0.022	0.001	0.001	0.999
Boiler dishwashing and garbage areas				1	0.001	0.001	0.504	0.001
Toilet and other areas					1	0.001	0.001	0.036
Food hygiene						1	0.001	0.001
Personnel hygiene							1	0.001

There is no statistically significant difference between 'Cooking Areas (mean: 100.0)', 'Food Hygiene (mean: 99.7)' and 'Cold Storage Areas (mean: 99.4)' ($p > 0.05$) which had the highest means and there is a significant difference with other areas ($p < 0.05$).

There is no statistically significant difference between 'Dry Storage Areas (mean: 97.6)', 'Toilet and Other Areas (mean: 97.9)' ($p > 0.05$). However, these areas are significantly different from other areas ($p < 0.05$).

No statistically significant difference was found between 'Food Preparation Areas (mean: 91.4)' and 'Personnel Hygiene (mean: 90.8)' ($p > 0.05$). It was found that these areas were not significantly different from other areas ($p > 0.05$).

Table 9. Information regarding the hygiene conditions of the businesses

Hotels	Storage		Food production, food preparation and cooking areas			BD	T	FP	PH	General
	C	D	F	P	Co					
Hotel 1	100.0	96.4	90.0	85.0	100.0	86.5	98.8	100.0	91.3	94.2
Hotel 2	100.0	96.8	93.3	85.6	100.0	86.3	97.8	100.0	88.9	94.3
Hotel 3	100.0	95.5	91.3	87.5	100.0	87.5	98.8	100.0	91.3	94.6
Hotel 4	100.0	95.5	92.7	84.5	100.0	88.1	99.1	100.0	89.5	94.4
Hotel 5	100.0	95.5	91.3	83.8	100.0	86.5	98.8	100.0	89.4	93.9

Hotel 6	100.0	96.9	92.9	91.4	100.0	84.6	95.7	100.0	92.1	94.9
Hotel 7	100.0	96.8	92.2	90.0	100.0	84.6	96.7	100.0	91.7	94.7
Hotel 8	100.0	97.3	91.3	86.3	100.0	87.5	98.8	100.0	90.6	94.6
Hotel 9	100.0	96.8	92.2	93.3	100.0	88.9	97.8	100.0	94.4	95.9
Hotel 10	100.0	98.2	87.5	87.5	100.0	83.7	96.3	100.0	90.6	93.7
Hotel 11	100.0	99.1	95.0	90.0	100.0	86.5	95.0	100.0	86.9	94.7
Hotel 12	97.9	96.4	91.3	93.8	100.0	91.3	95.0	98.8	92.5	95.2
Hotel 13	98.1	99.2	96.7	93.3	100.0	93.2	97.8	98.9	88.9	96.2
Hotel 14	100.0	96.8	97.8	91.1	100.0	88.9	98.9	100.0	91.7	96.1
Hotel 15	97.9	99.1	97.5	93.8	100.0	87.5	98.8	100.0	91.9	96.3
Hotel 16	96.3	98.4	97.8	96.7	100.0	92.3	98.9	100.0	90.6	96.8
Hotel 17	100.0	95.9	97.1	92.9	100.0	91.2	97.1	100.0	92.1	96.3
Hotel 18	100.0	100.0	97.8	92.2	100.0	92.3	100.0	100.0	90.0	96.9
Hotel 19	98.3	97.9	97.0	93.0	100.0	89.2	98.0	100.0	89.5	95.9
Hotel 20	100.0	100.0	95.6	95.6	100.0	93.2	97.8	98.9	90.6	96.8
Hotel 21	100.0	98.4	97.8	92.2	100.0	90.6	97.8	100.0	90.0	96.3
Hotel 22	100.0	99.1	97.5	95.0	100.0	91.3	98.8	100.0	88.1	96.6
Hotel 23	98.1	100.0	97.8	93.3	100.0	89.7	97.8	100.0	91.1	96.4
Hotel 24	100.0	100.0	100.0	90.0	100.0	91.2	100.0	100.0	94.3	97.3
Hotel 25	100.0	98.8	95.0	98.3	100.0	91.0	98.3	100.0	95.0	97.4
Hotel 26	100.0	98.4	97.8	95.6	100.0	93.2	98.9	98.9	91.7	97.2
Hotel 27	97.9	99.1	96.3	95.0	100.0	89.4	97.5	98.8	91.3	96.1
Hotel 28	100.0	99.0	98.6	97.1	100.0	84.6	97.1	98.6	90.7	96.2

General Mean: 95.71

*C: Cold Storage, D: Dry Storage F: Food Production Areas, P: Food Preparation Areas, Co: Cooking Areas, BD: Boiler Dishwashing and Garbage Areas, T: Toilet and Other Areas, FH: Food Hygiene, PH: Personnel Hygiene symbolize mean values.

Cold storage areas, dry storage areas, food production areas, cooking areas, boiler dishwashing and garbage areas, toilet and other areas and personal hygiene for each hotel were separately evaluated in Table 9 and the arithmetic mean and the score each hotel got in the evaluated parts were expressed as percentages.

General mean of 28 hotels evaluated was determined as 95.71.

Cigerim, Karabudak, Kiziltan & Bas (2002) pointed out in a study carried out in the evaluation of the hygiene conditions of four- and five-star hotels serving in Ankara that the scores of the hotels obtained from the storage areas varied between 51.2 and 100.0, the storage standards of one of the five-star hotels were found suitable for all criteria and the storage standards of one of the four-star hotels were found rather low.

The general mean score of the current study was found as 95.71. It is believed that the hygiene educations and the processes applied between the units are inadequate in line with the findings obtained in the results of the other research studies, but it is likely that with the periodical educations to be given in every area and at every stage, it will be more permanent.

6. Conclusion and recommendations

6.1. Conclusion

In the current study that was carried out to determine the views of the employees working in the hotel kitchens of Cappadocia region over kitchen hygiene conditions, it was found that 94% of the personnel included in the study were men and 6% were women in gender distribution.

As for the education status of the personnel working in the hotel kitchens, it was found that 44.0% were high school graduates and 26.1% were high education graduates.

The status of having a cooking education of the personnel working in the hotel kitchens was investigated and it was found that 63.3% of them had their education from the cooking schools, 8.0% from private courses, 8.0% from public education centres and 20.7% had their education from universities.

Food security, hygiene, sanitation, nutrition and health education status of the personnel working in the hotel kitchens were investigated and it was found that 97.0% had an education and 3.0% did not.

The personnel working in the hotel kitchens were asked where they had their education over food security, hygiene, sanitation, nutrition and health and it was determined that 15.9% had their education from the workplace manager, 51.1% from a private firm authority and 33.0% expressed that it was their education coming from their school years.

The personnel working in the hotel kitchens were asked the status of having a regular in-service training and it was found that 54.7% of the personnel were given regular in-service training and 45.3% were not.

The personnel were asked on which issues they were given education at the workplace, it was found that 20.3% were given an education over first aid, 68.0% were given over workplace security and 11.7% were given over food security and hygiene.

The personnel working in the kitchen were asked whether they had a health control while being employed and it was determined that all of the personnel had their health controls.

As for which health controls the personnel working in the hotel kitchens had while being employed, it was found that 52.5% had their control in internal diseases, 0.9% in internal diseases and seeing, 18.4% in internal diseases, seeing and hearing and 28.2% had their controls in internal diseases, seeing, hearing and psychology.

Periodic health controls of the employees were investigated and it was determined that all of the personnel had their periodic health controls.

In which frequency the personnel had their health controls were investigated and it was determined that 6.9% had it every 3 months, 75.6% hade it every 6 months and that 17.5% had their health controls every year.

The hotel businesses in Cappadocia were investigated in six parts as cold storage areas, dry storage areas, food production areas, boiler dishwashing and garbage areas, toilet and other areas and personnel hygiene and the scores between 100 and 86 were classified as very well, the scores between 85 and 71 were classified as good, the scores between 70 and 61 were classified as acceptable and 60 points and below were classified as unhealthy. Accordingly; the cold storage areas of the hotel businesses were regarded as very well with a mean score of 99.4, dry storage areas were very well with 97.9, food preparation areas were very well with 94.9, cooking areas were very well with 100.0, boiler dishwashing and garbage areas were very well with 89.0, toilet and other areas were very well with 97.9, food hygiene applications were very well with 99.7 and personnel hygiene applications were regarded as very well with the mean score of 90.8.

In the study carried out regarding hygiene level, it was regarded as very well with a mean score of 95.71 depending on the means of 28 hotels according to the hygiene evaluation of the region of Cappadocia. It was generally found that the hygiene levels of the hotel regions in Cappadocia were successful.

6.2. Recommendations

It is likely to make the following recommendations in line with the current study:

1. Environmental conditions should be taken into consideration in kitchen planning and the wastewater present in the location of kitchens should be made suitable for water discharge plan. The location of the kitchen should be planned that will not affect the environment negatively in the natural areas where there is no wastewater discharge plan.
2. As it is the Cappadocia region, the kitchens should be designed in a way that will not distort or destroy the natural structure. The kitchens should be located in a way that will not destroy the texture in the hotels which are integrated with the fairy chimneys, and the kitchen floor, ceiling, walls and ventilation system should be planned in a way to provide functionality by considering the natural structure.
3. Having a health control while employing the personnel should be completely given up and the personnel should be made to have internal diseases, visual, audial, nose, throat and psychological controls in full sense.
4. Diseased personnel should never be given a task to work, the personnel having a cut in their hand, a wound or pus should be withdrawn to the back service or should not be employed. Because of the shortages in this issue, workplace security of the hotels should certainly be made by the experts in certain periods and a control mechanism should be established.
5. Kitchen personnel should be given uniforms in all hotels in terms of hygiene, and also wearing caps, aprons, gloves and masks suitable for hygienic rules should be made compulsory.
6. Necessary hygienic rules should be obeyed at stages of food purchase, storage and production and the hygienic supervision of these areas and those working in these areas should always be made.
7. Kitchen personnel should be given an education over hygiene, sanitation, food security, nutrition and health and these educations should be repeated at certain intervals. It should be made to behave according to HACCP rules in all areas and the supervision of the authoritative manager at the hotels should be made.

References

Akdur, R. (2015). *Turizm Saglik ve Hukuk Sempozyumu*. Sempozyum Bildiri Kitapcigi, 3–5 Nisan Nevsehir.

Aslan, S. (2005). *HACCP ve ISO 9001 kalite belgeli catering firmalari ile diger firmalarin gida guvenligi konusunda mevcut durumlarinin karsilastirilmasi ve personel egitiminin tespit edilmesi* (Yuksek Lisans Tezi, Gazi Universitesi Egitim Bilimleri Enstitusu, Ankara).

Birer, S. (2002, Mayis). *Yemek hazirlama, pisirme ve servisinde dikkat edilmesi gereken saglik ve temizlik kurallari.* Turizmde Saglik ve Beslenme; Sorunlar ve Cozumler Sempozyumunda sunulmus bildiri, Baskent Universitesi, Ankara.

Buyruk, L. & Sahin, N. (2002, Mayis). *Otel yiyecek-icecek departmaninda calisan isgorenlerin hijyen algilamalari konusunda bir arastirma*. Turizmde Saglik ve Beslenme; Sorunlar ve Cozumler Sempozyumunda sunulmus bildiri, Baskent Universitesi, Ankara.

Cigerim, N., Karabudak, E., Kiziltan, G. & Bas, M. (2002, Mayis). *Ankara'da hizmet veren dort ve bes yildizli otellerin hijyen durumunun degerlendirilmesi uzerine bir arastirma.* Turizmde Saglik ve Beslenme; Sorunlar ve Cozumler Sempozyumunda sunulmus bildiri, Baskent Universitesi, Ankara.

Demirel, S. (2009). *Hazir yemek uretimi yapan isletmelerde calisanlarin hijyen bilgi duzeylerinin belirlenmesi* (Yuksek Lisans Tezi, Namık Kemal Universitesi Fen Bilimleri Enstitusu , Tekirdag).

Dundar, C., Elmacıoglu, F. & Topbas, M. & Peksen, Y. (1998). Samsun il merkezindeki hastaneler mutfaklarinin hijyen yonunden degerlendirilmesi. *Turk Hijyen ve Deneysel Biyoloji Dergisi, 57*, 1–6.

Eksen, M., Karakus, A. & Karadag, N. (2004). Mugla Merkez Ilce Gida Isyerlerinde Calisanlarin El ve Vucut Hijyeni Konusundaki Bilgi Düzeylerinin İncelenmesi. *Uluslar arasi Insan Bilimleri Dergisi*.

Erbil, S. (2000). *Istanbul'da toplu beslenme üretimi yapan yemek fabrikalarinin sanitasyon*

ve hijyen kosullarinin degerlendirilmesi (Yuksek Lisans Tezi. Istanbul Universitesi Saglik Bilimleri Enstitusu).

Ercsili, S. (2005) *Konya'da tuketime hazir yemek ureten ve bunlari servise sunan isletmelerde calisanlarin hijyen bilgisinin belirlenmesi* (Yuksek Lisans Tezi, Selcuk Universitesi, Fen Bilimleri Enstitusu, Konya).

Gökdemir, A. (2003). *Mutfak hizmetleri yonetimi* (1st ed.). Ankara, Turkey: Detay.

Guler, C. (2002, Mayis). *Turizm sektorunde calisanlarin sagligi.* Turizmde Saglik ve Beslenme; Sorunlar ve Cozumler Sempozyumunda sunulmus bildiri, Baskent Universitesi, Ankara.

Kantar Cikmaz, N. (1997). *A.U. Tip Fakultesi Hastaneleri ve Dekanlık Mutfak Yemekhane Calisanlarinin Besin Hijyeni Ile Ilgili Bilgi ve Uygulamaları* (Yuksek Lisans Tezi, Ankara Universitesi Saglik Bilimleri Enstitusu, Ankara).

Kozak Akoglan, M. & Cicek, D. (2005). Kat hizmetlerinde HACCP uygulamasi uzerine bir model onerisi, Anatolia. *Turizm Arastirmalari Dergisi, 16*(1), 63–83.

Sargin, Y. (2005). *Ankara'daki dort ve bes yildizli otellerde calisan yiyecek ve icecek personelinin hijyen bilgileri ve uygulamalarinin incelenmesi* (Yuksek Lisans Tezi, Ankara Universitesi Fen Bilimleri Enstitusu, Ankara).

Sarper, F. (2016, Agustos). *Ankara ilinde 4 ve 5 yildizli otellerin yiyecek icecek alanlarinin hijyen yonunden degerlendirilmesi* 14. Uluslararasi Turk Dunyasi Sosyal Bilimler Kongresinde sunulmus bildiri, Makedonya.

Unal, G. (2000). *Erzurum il merkezindeki resmi kurumlarda toplu beslenme hizmeti veren personelin isyeri ve kisisel hijyen konusunda bilgi düzeyi* (Yuksek Lisans Tezi, Erzurum Ataturk Universitesi Saglik Bilimleri Enstitusu, Erzurum).

Walczak, D. (1999). Organizational behavior: forgotten variable in safe food*. FIU Hospitality Review, 17*(1&2), spring/Fall 1999, 21–26.