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Identification of cleaning staff's habits of personal hygiene and evaluation of the effectiveness of the training carried out

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ABSTRACT

Objective: In this research, in which the effectiveness of the training given to the cleaning staff who are likely to be carriers for pathogens was investigated, it was also examined whether the socio-demographic characteristics of the participants lead to any difference in their hygiene practices.

Materials and Methods: Training on hygiene was given to the participants by a physician who is specialized in the field of infection. Their knowledge before and after the training was evaluated.

Results: It was determined that the rate of desired responses in correct practices regarding hygiene was low, and that there was a change in the scores related to some areas (frequency of going to the dentist, wrong practices in hair hygiene, face towel, hand cleaning material, foot towel practices) after training.

Conclusion: In the research, the effect of health training provided to cleaning staff on knowledge and behavior was examined. As a result of the research, it was observed that there was a general positive increase related to the hygiene issues in the level of knowledge and behavior of the cleaning staff.

Keywords: Cleaning staff, Hygiene, Before and after training

1. INTRODUCTION

According to the World Health Organization (WHO), hygiene is the total of conditions and practices for protecting health and preventing the spread of diseases [1].

Personal hygiene is called personal care practices that enable individuals to protect and maintain their health. Personal care, on the other hand, is the whole of activities that are initiated and implemented by the individual aimed at maintaining life, health and well-being. It is the implementation of the practices necessary for individuals' own health by the individuals themselves instead of expecting others to implement them on their behalf [2].

In today's societies where personal hygiene is very important, it is possible to provide a happier, more peaceful and successful education system by taking all necessary precautions for the continuation of a healthy life in public life areas that are closely related to human health. In order to achieve this goal, attention should be paid to the interaction between students at the center of the education system, university and environment, and efforts should be made to create a healthier environment by acting in accordance with personal hygiene and health practices as much as possible. When the literature is analyzed, it is seen that the studies conducted on health and hygiene education in the institutions providing education focus mostly on determining the health knowledge levels and health behaviors of the students.

In studies conducted on personal hygiene in all educational institutions, it was determined that the correct hand washing rate among students was low and that the physical environment of educational institutions should have a setting that lends itself to cleaning [3,4].One of the most important parts of this environment is undoubtedly the cleaning staff working in educational institutions. For this reason, considering that it can be important in terms of school health in all educational institutions and beneficial results would be obtained, in this study, it was aimed to determine the personal hygiene habits of cleaning staff working in a university and to evaluate the effectiveness of the training activity carried out.

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2. MATERIAL and METHODS

The research had a quantitative research design with a semi-experimental type including before-training and after-training comparison. The data were collected between June and December 2019. The study had a relational design as it relied on the measurements of the participants related to the dependent variable before and after the procedure. The population of the research consisted of 97 cleaning staff working in a state university in a provincial center, and the sample of the study consisted of cleaning staff (n=94) working at the university during the data collection process who responded to the questionnaire before and after the training. Some trainings were explained theoretically within the scope of its content, and some trainings were delivered as practical training (hand hygiene, tooth brushing, eye cleaning, nail cutting, etc). The participation rate in the research was 96.9%.

The before-training test was applied to the participants in the meeting room in 40 minutes under the control of one of the research assistants. In order to obtain objective data in the test, codes were assigned to the questionnaire forms of the participants, and in order for these codes to be remembered, the identity information and codes of the participants were listed. The list was entrusted to the head of the cleaning staff who did not participate in the study, and the participants were asked to memorize their codes. Then, the participants were divided into groups of 20, and each group was provided with face-to-face training by a specialist physician in infectious diseases. The after-training test was administered by the researchers through face-to-face interview method three months after the training. Fourteen participants who forgot their codes learned their codes from the person who had the code list. The list was then destroyed. All procedures performed in the current study were in accordance with the ethical standards of the institutional ethics committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by Bingöl University Ethics Committee (Approval date and number: 15.04.2019; 92342550/044 – E.8055). Before the data for the study started to be collected, the participants were informed that they could withdraw from the study in accordance with the principle of 'Autonomy' for the purpose of the protection of participants' rights, and the ''Informed Consent Form" was presented to them. The principle of 'Confidentiality' was respected during the study; it was ensured that the identity of the participant and the data obtained were kept confidential. The questionnaires belonging to the study were distributed to and collected from the participants via a research assistant in order not to influence the voluntariness of the participants and direction of the research. In line with the principle of 'Respect for Human Dignity', the participants were not judged because of their opinions and practices.

Statistical Analyses

The socio-demographic characteristics of the participants constituted the independent variables of the research, and questions about personal hygiene were determined as the dependent variables. Statistical Package for the Social Sciences-22 (SPSS-22) was used for the analyses; error checks were run and tables were created through the program. Descriptive data were presented in numbers and percentages. Mc Nemar-Bowker analysis was used to analyze the data. The averages were provided with standard deviations, $P<0.05$ was accepted as the significance level.

3. RESULTS

The participants (50.0%) in the research were between 36-45 years old, and 27.7% of the participants were females. The average working year of the participants was 8.46 ± 4.94 (median:8, min:1, max:29 years), and the average working year as cleaning staff was 6.71 ± 3.03 (median:7, min:2, max:15 years) (Table I).

Table I. *Descriptive characteristics of the participants (N = 94)*

Characteristics	Number	%
Age group		
Under 25 years of age	5	5.3
Between 26-35 years	26	27.7
Between 36-45 years	47	50.0
Above 46 years of age	16	17.0
Gender		
Female	26	27.7
Male	28	72.3
Marital status		
Married	81	86.2
Single	13	13.8
Educational level		
Illiterate	4	4.3
Literate	2	2.1
Primary school	38	40.4
Secondary school	20	21.3
High school	25	26.6
University	5	5.3
Total working years		
Less than 5 years	24	25.5
Between 6 and 10 years	55	58.5
11 years and above	15	16.0
Working year as a cleaning staff		
Less than 5 years	39	41.5
Between 6 and 10 years	48	51.1
11 years and above	7	7.4

As seen in Table II, in terms of before-training and after-training, it was determined that the variables other than the dependent variables of the frequency of going to the dentist ($P= 0.005$), the knowledge related to the wrong practice of hair cleaning ($P= 0.046$), personal or common use of face towel ($P = 0.002$), foot towel ($P = 0.001$) and hand soap ($P = 0.041$) did not display any difference ($P > 0.05$). After the training, an increase by 10% in the rate of those who said they should visit the dentist in 3 months or less was determined. Regarding the wrong practice related to hair cleaning, participants answered that "The hair should be brushed regularly in order to remove dirt and dead hair" in the group after the training with a rate of

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more than 10% increase. The rate of increase in those who said that oily hair should be washed more frequently was around 8% in the training group. It was determined that the after-training group stated that the face towel should belong to the person with a 5% increase. On the other hand, following the training, it was determined that the training group stated that the foot towel should belong to the person with an increase of approximately 18%. Those who stated that hand soap should belong to the person were found to increase by 10% in the group after the training.

Table II. *Status of participants' hygiene behaviors before and after training (n = 94)*

Hygiene Behavior	BT n (%)**	AT n (%)**	Test Value*
The effects of general body cleanliness			
It enables the odor of the body to be expelled.	7 (7.4)	13 (13.8)	
It relieves the individual psychologically.	11 (11.7)	11 (11.7)	p=0.573
It removes some microorganisms from the skin.	15 (16.0)	14 (14.9)	
It causes the excess fat in the body to be burnt.	61 (64.9)	56 (59.6)	
Frequency and form of body cleaning			
The body needs to be washed with soap and rinsed every two weeks.	13 (13.8)	11 (11.7)	
The body needs to be washed with soap and rinsed every day	41 (43.6)	44 (46.8)	p=0.170
The body needs to be washed with soap and rinsed once a week	9 (9.6)	19 (20.2)	
Taking a shower without soap is necessary every morning.	31 (33.0)	20 (21.3)	
Which one do you apply to remove odors such as sweat other than having a bath?			
I use deodorant.	33 (35.1)	30 (31.9)	
I wash my body parts such as armpits with soap and water.	25 (26.6)	16 (17.0)	p=0.209
I change my underwear every day.	29 (30.9)	36 (38.3)	
I wipe my body parts such as armpits with a soapy washrag.	4 (4.3)	6 (6.4)	
Other	3 (3.2)	6 (6.4)	
How do you clean your face?			
I wash my face with water in the morning and at night before going to bed.	33 (35.1)	26 (27.7)	
I wash it with water and suitable soap in the morning and at night.	17 (18.1)	24 (25.5)	p=0.506
I wash it with soap and water in the morning, at night before bedtime and during the day.	40 (42.6)	40 (42.6)	
Other	4 (4.3)	4 (4.3)	
Do you have your personal towel at work?			
Yes	52 (55.3)	57 (60.6)	p=0.359
No	42 (44.7)	37 (39.4)	
Do you also wash your hair separately apart from taking a bath?			
Yes	81 (86.2)	84 (89.4)	p=0.453
No	13 (13.8)	10 (10.6)	
How often do you visit the dentist?			
Never	20 (21.3)	16 (17.0)	
In three months or less	17 (18.1)	27 (28.7)	**p=0.005**
Once in six months	34 (36.2)	28 (29.8)	
In a year or more	23 (24.5)	23 (24.5)	
How often do you change your toothbrush?			
In three months or less	64 (68.8)	63 (67.7)	
Once in six months	17 (18.3)	21 (22.6)	p=0.240
In a year or more	7 (7.5)	8 (8.6)	
Other	5 (5.4)	1 (1.1)	
Do you regularly brush your teeth?			
Yes	82 (87.2)	84 (89.4)	p=0.687
No	12 (12.8)	10 (10.6)	
Why should teeth be brushed regularly?			
For health	54 (57.4)	58 (61.7)	
For cleanliness	5 (5.3)	7 (7.4)	p=0.269
To prevent decay	31 (33.0)	26 (27.7)	
Against bad breath	2 (2.1)	1 (1.1)	
Other	2 (2.1)	2 (2.1)	
Which one is the wrong practice about hair cleaning?			
Hair should be brushed regularly to remove dirt and dead hair.	8 (8.5)	17 (18.1)	
Oily hair should be washed more often.	25 (26.6)	32 (34.0)	**p=0.046**
Hair should be brushed quickly and strongly while drying.	32 (34.0)	28 (29.8)	
It should be washed twice a week so that a normal hair oil balance is not disturbed.	29 (30.9)	17 (18.1)	

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Which is the right practice for eye cleaning?			
Only eyelash bottoms of the eyes should be cleaned with water and soap during each bath.	6 (6.4)	10 (10.6)	
In each bath, eyes should be cleaned by rubbing with soap and water.	37 (39.4)	38 (40.4)	p=0.094
The eyes do not need special care, if necessary, only the eye secretion accumulating in the eyelash bottoms should be removed.	22 (23.4)	22 (23.4)	
Only eyes should be cleaned with soap and water in the morning.	29 (30.9)	24 (25.5)	
Which is the right practice for nose cleaning in a healthy individual?			
It should be cleaned by inhaling normal saline into the nostrils.	20 (21.7)	13 (14.1)	
Nose wastes should be removed by blowing with running water or a tissue.	63 (68.5)	66 (71.7)	p=0.113
Only after bathing, nose wastes should be cleaned with a tissue.	6 (6.5)	10 (10.9)	
The nostrils should be cleaned with the help of a foreign object	3 (3.3)	3 (3.3)	
Which is the appropriate method of hand washing according to the cleaning rules?			
It is sufficient to wash your hands by rubbing between the fingers with water.	1 (1.1)	1 (1.1)	
Hands should be washed with an alcoholic solution starting from the wrist level and rubbing between the fingers.	11 (11.7)	11 (11.7)	p=0.401
Hands should be washed with water only for 15-20 seconds before and after each work.	30 (31.9)	24 (25.5)	
Hands should be washed starting from the wrist level with warm water and soap, rubbing between the fingers.	52 (55.3)	58 (61.7)	
Which one is the right practice for cutting the fingernails and toenails?			
Both should be cut straight.	44 (46.8)	44 (46.8)	
Both should be cut rounded.	17 (18.1)	23 (24.5)	p=0.270
Fingernails should be cut rounded and toenails straight.	24 (25.5)	19 (20.2)	
Fingernails should be cut straight and toenails should be cut rounded.	9 (9.6)	8 (8.5)	
Which explains the importance of work clothes in terms of cleanliness and hygiene the best?			
Work uniforms protect other clothes from wear and tear.	5 (5.3)	12 (12.8)	
Work uniforms prevent harmful microorganisms from entering the body.	10 (10.6)	10 (10.6)	p=0.175
They keep other clothes clean and reduce the transmission of harmful microorganisms from the environment to our body and from our body to the environment.	53 (56.4)	55 (58.5)	
Work uniforms make the employee look clean and neat.	26 (27.7)	17 (18.1)	
Would you like to get information about personal hygiene?			
Yes	76 (80.9)	78 (83.0)	p=0.754
No	18 (19.1)	16 (17.0)	
What kind of soap do you usually prefer to wash your hands?			
Soap bar	37 (39.4)	30 (31.9)	p=0.143
Liquid soap	57 (60.6)	64 (68.1)	
How often do you change your socks?			
Every day	87 (92.6)	88 (93.6)	
Once a week	4 (4.3)	3 (3.2)	p=0.905
When it gets dirty and stained	3 (3,2)	3 (3,2)	
Face Towel			
My own	78 (83.0)	88 (93.6)	**p=0.002**
Commonly used at home	16 (17.0)	6 (6.4)	
Foot Towel			
My own	74 (78.7)	91 (96.8)	**p=0.001**
Commonly used at home	20 (21.3)	3 (3.2)	
Bath Towel			
My own	89 (94.7)	90 (95.7)	p=1.000
Commonly used at home	5 (5.3)	4 (4.3)	
Toothbrush			
My own	87 (92.6)	93 (98.9)	p=0.070
Commonly used at home	7 (7.4)	1 (1.1)	
Hand soap (liquid)			
My own	35 (37.2)	45 (47.9)	
Commonly used at home	54 (57.4)	46 (48.9)	**p=0.041**
Commonly used in the workplace	5 (5.3)	3 (3.2)	
Bath washcloth			
My own	83 (88.3)	86 (91.5)	p=0.453
Commonly used at home	11 (11.7)	8 (8.5)	

** McNemear Test was performed in binary comparisons and McNemear-Bowker Test was employed in multiple comparisons.** Percentage of column is taken. BT: Before training, AT: After training*

Table III shows the distribution of changes in hygiene behaviors according to the age of the participants.

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Table III. *Distribution of changes in hygiene behaviors according to the age of the participants (N = 94)*

Hygiene Behavior	n	Age *				Test Value
		25↓	26 – 35	36 – 45	46 ↑	
		n (%)	n (%)	n (%)	n (%)	
How often do you visit the dentist?						
BT						
Never	20	2 (40.0)	2 (7.7)	8 (17.0)	8 (50.0)	
In three months or less	17	2 (40.0)	7 (26.9)	8 (17.0)	0 (0.0)	$\chi^2 = 18.186$
Once in six months	34	1 (20.0)	9 (34.6)	20 (42.6)	4 (25.0)	**p = 0.033**
In a year or more	23	0 (0.0)	8 (30.8)	11 (23.4)	4 (25.0)	
AT						
Never	16	1 (20.0)	1 (3.8)	10 (21.3)	4 (25.0)	
In three months or less	27	3 (60.0)	9 (34.6)	12 (25.5)	3 (18.8)	$\chi^2 = 11.416$
Once in six months	28	1 (20.0)	11 (42.3)	13 (27.7)	3 (18.8)	p = 0.248
In a year or more	23	0 (0.0)	5 (19.2)	12 (25.5)	6 (37.5)	

. Percentage of column is taken. BT: Before – training, AT: After-training*

4. DISCUSSION

In this study, it was aimed to determine the personal hygiene habits of the cleaning staff working in a university and to evaluate the effectiveness of the training conducted. The population of the research consisted of 97 cleaning staff working in a state university in a provincial center, and the sample of the study consisted of cleaning staff (n=94) working in the university during the data collection process who responded to the questionnaire before and after the training. The participation rate in the research was 96.9%.

The participants (50.0%) in the research were between 36-45 years old, and 27.7% of the participants were females. In terms of before-training and after-training, it was determined that the variables other than the dependent variables of the frequency of going to the dentist, the knowledge on wrong practice related to hair cleaning, personal or common use of the face towel, foot towel and hand soap did not display any difference.

If we are to examine the contributions provided in terms of hygiene after the training one by one, it was determined that there was an increase of approximately 10% after the training in the rate of those who said "It is necessary to visit the dentist in 3 months or less". On the other hand, the training did not have an impact on the participants in terms of the frequency of tooth brushing and changing tooth brush. In an interventional study, Coşkun and Kara reported that 70% of students brushed their teeth twice a day and more, that 59.5% changed tooth brushes every 1-3 months, and that these rates increased significantly after training [5]. Muttappillymyalil et al., stated that 84.6% of adolescents brushed their teeth twice a day in their research titled 'Oral Health Behavior Among Adolescents in Kerala / India' [6]. In the study, they also reported that 45.5% of the adolescents stated that they visited the dentist regularly.

The purpose of hand hygiene, which is accepted in personal hygiene practices, is to ensure the disinfection of chemical and physical pests and microorganisms that cause infections. When one cleans his/her hands with water only to have hand hygiene, she/he tries to remove those pathogens through mechanical effect, but complete cleaning cannot be ensured. Therefore, it is mandatory to use soap with water in personal cleaning. Personal hygiene practices and preventive health services are known to reduce certain infections. According to WHO, basic hygiene behaviors such as washing hands with soap, removing stools safely and using clean water are beneficial for improving health [7]. Soap is one of the most effective methods not only for disinfection of the hands but also for the removal of harmful contaminants with allergic effects (nickel, iron and other allergen metals and powders) [8]. Although, normal solid hand soaps and liquid soaps are not different in terms of their effects, soap bars can be sources of contamination due to the environment where they are kept and people leaving the soap uncleaned after using it. Therefore, especially in public places, liquid soaps should be preferred for personal hygiene [9]. In our study, although, the difference was not significant, the rate of cleaning staff choosing liquid soap during hand washing increased by 8% after the training. The rate of those who stated that hand soap should belong to the person was found to increase by 10% in the after-training group, and this difference was significant in terms of comparison between before-training and after-training periods.

In our study, it was determined that the number of participants in the after-training group who stated that the face towel should belong to the person, increased by 10.6%. On the other hand, it was also found that the after-training group stated that the foot towel should belong to the person with an increase of approximately 18.1%. In the study conducted in 2017 on personal hygiene habits of elementary school students in our country, the rate of using towels in the urban area was found to be 63.3% and 36.7% in the rural area [10]. In their research in which they investigated the students of two different primary schools in Istanbul, Önsüz and Hıdıroğlu, found that 48.3% of the students studying in Ümraniye had personal towels. In contrast, they determined that 59.4% of the students studying in Üsküdar had a personal towel [4]. In their interventional research, Coşkun and Kara found that the rate of students' using

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towels after washing their hands was 93.9% before training, while this rate increased to 95.0% after training [5].

The appearance of the hair usually gives an idea about the general health of the people and their level of personal hygiene. People with messy and dirty hair are often inadequate in terms of hygiene practices. In such cases, infection-causing factors and parasites can easily be transmitted to dirty hair and scalp. Hair should normally be washed at least once or twice a week. Oily hair types should be washed frequently and appropriate hair washing products should be used [11]. Regarding hair cleaning, it was determined that the participants in the after-training group said that "The hair should be brushed regularly in order to remove dirt and dead hair" with an increase of more than 10%. The rate of increase in those who said that oily hair should be washed more frequently was around 8% in the training group. In different studies conducted on the frequency of taking a bath among primary school students, the frequency of taking a bath every three days and above was found to be between 57.4% and 69.5% [10,12]. It was found that 67.8% of the students participating in this research took a bath in three days or more before the training, and this rate went up to 77.8% after the training. In Arat et al's. research titled 'Personal Hygiene Practices of Boarding Elementary School Second Level Students', it was found that 38.2% of students washed their hair once every two days and 29.9% every three days [13]. Coşkun and Kara also found in their research that 67.8% of the students who participated in the research had a bath every three days or more before the training, and this rate increased to 77.8% after the training [15]. Our findings are consistent with literature experiments [14-16].

Conclusion and Suggestions

In the research, the effect of health training provided to cleaning staff on knowledge and behavior was examined. As a result of the research, it was observed that there was a general positive increase related to the hygiene issues in the level of knowledge and behavior of the cleaning staff.

In conclusion, there is a lack of training for the cleaning staff included in this research regarding the work they do and personal hygiene. The rate of using personal materials related to the working environment and using personal materials in the home environment is low. It seems that some behaviors regarding cleaning / hygiene / health are inadequate. Measures and training programs should be increased for the personnel working in cleaning jobs to perform in a more effective and healthy manner. In addition, they should be provided with opportunities to develop hygiene and gain positive behavior starting from childhood. Periodic training sessions should be held within the scope of occupational health for those in this age group.

Compliance with Ethical Standards

Ethical Approval: This study was approved by Bingöl University Ethics Committee (Approval date and number: 15.04.2019; 92342550/044 – E.8055).

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Conflict of Interest: The authors have no potential conflicts to disclose.

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REFERENCES

[1] World Health Organization, https://www.who.int/health-topics/adolescents/coming-of-age-adolescent-health, http://www.who.int/topics/hygiene/en/, Access of Date: 01.05.2019.

[2] Uzunçakmak T. The effect of self care training upon self care power in adolescents, Master Thesis, Erciyes University Institute of Health Sciences, Kayseri, 2012.

[3] Yetkin A. Yiğitbaş Ç. Comparison of the personal hygienic habits of freshman and senior students of health college. Journal of Anotalia Nursing and Health Sciences 2008; 11:72-84.

[4] Önsüz MF. Hidiroglu S. Determining personal hygiene practices of students in two different primary school in Istanbul. Meandros Med Dental J 2008;9 : 9-17.

[5] Coşkun M, Kara F. Evaluation of the impact of health education given to students on knowledge and attitudes. Journal of Continuing Medical Education 2015; 24: 55-63.

[6] Muttappillymyalil J, Sreedharan J, Salini K, Divakaran B, Sreedhar S. Oral health behaviour among adolescents in Kerala, India. Italian Journal of Public Health 2009; 6: 218-24.

[7] Özvarış ŞB. Healthcare workers from infection protection. Journal of Continuing Medical Education 1999; 8: 455-47.

[8] Rotter M. Procedures for hand hygiene in German-speaking countries. Zentralbi Hyg Umweltmed 1996;199 (2-4): 334-49.

[9] Namura S, Nishijima S, McGinley KJ, Leyden JJ. A. study of the efficacy of antimicrobial detergents for hand washing: using the full-hand touch plates method. Dermatol J 1993; 20 : 88-93. doi: 10.1111/j.1346-8138.1993.tb03837.x.

[10] Yılmaz E, Özkan S. Comparison of the personal hygiene habits of the primary school students in two different living area of the district. Fırat Health Services Magazine 2009; 4:19-33.

[11] Yılmaz Irmak H. The evaluation of the attitude and the behaviour of the patients with the information about personal hygiene. Master Thesis. Cumhuriyet University Institute of Health Sciences. Sivas, 2015.

[12] Kaya M, Aslan D. An intervention study on "handwashing" among secondary school students in Ankara. Erciyes Medical Journal 2009;31:135-43.

[13] Arat A, Şimşek I, Erdamar G. The second grade students' practises about personal hygiene in regional boarding primary school. The Journal of the Industrial Arts Education of Faculty of Gazi University 2014; 33: 58-72.

[14] Ünal MM, Özmen Toğay S. Determination of hygienic condition in surface samples and hygiene awareness of working staff of hospital kitchens in Istanbul. Turkish Bulletin

of Hygiene and Experimental Biology 2017; 74: 307-20. doi: 10.5505/TurkHijyen.2017.30164.

[15] Ismail FH, Chik CT, Muhammad R, Yusoff NM. Food safety knowledge and personal hygiene practices amongst mobile food handlers in Shah Alam, Selangor. Procedia-Social And Behavioral Sciences 2016; 222: 290-8. doi: 10.1016/j.sbspro.2016.05.162.

[16] Sormaz Ü, Şanlıer N. The impact of compulsory hygiene training given to employees working in the sector of food and beverages services on their hygiene-related habits, behaviours and knowledge. Journal of Human Sciences 2017;14: 1356-69. doi: 10.14687/jhs.v14i2.4545