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**EVALUATION THE VARIOUS ASPECTS OF ENVIRONMENTAL HEALTH SITUATION
OF THE PASSENGER TERMINALS- CASE STUDY:
KERMANSHAH PROVINCE, IRAN (2014)**

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Abstract

Passenger terminal is the place of thousands entrance and exit from various part of the country. According to the official's statistics from passenger terminal organization which showed the traffic and entrance of the big number of passengers, the artisan and truism industry issue is become important. Monitoring and regulating health principles of passenger terminal caused the promotion of welfare condition in this place and could help its improvement. Therefore, the regular observance and monitoring of health principles in such places have a great importance. The aim of this study is evaluating the environmental health condition of passenger terminals in Kermanshah province and presenting some strategies in 2014. This study is descriptive-analytic and for doing this research a questionnaire with 76 clauses was used. The results showed that in solid waste management part 49.13% of the terminals have desirable condition. In this regard, for public health and W.C31.72% and 43.75% of the terminals have the necessary standards of the environmental health respectively. According to the results 81.02% Of the restaurants from a total of the nine terminals which equipped with this part have observed the heath principles. Also, it could be said that with regarding to the ordering priority the praying room, W.C, solid waste management and restaurant's environmental health respectively should become important for the environmental health officials and terminals manager.

Keywords: Environmental health, cargo and passenger terminals, Kermanshah province

Introduction

The cargo and passenger terminals, each year is the place of thousands passengers entrance and exit from different parts of the country. According to the fact such as the different origin and destination of passengers and a lot of people in a small place, the observance of hygienic principle in such places become very important (1, 2). The surveillances on the passenger terminals from the environmental point of view have been done by the health center of the related city. The inspection which have done in passenger terminals, evaluated the facts such as observing the praying room, W.C (including lighting and ventilating), food's preparing and distribution and marinating food hygiene' environmental health condition based on the related characteristics and standards. According to the halt and undeniable use of passengers from the praying room, restaurants and W.C, if these places have not observed the hygienic principles and don't be clean and disinfect regularly could become a place for transmission of contagious, infectious and dermal disease (3). For example the various types of germs cause urine infection and stool bacteria through the W.C and fungal disease through praying rooms due to the use of Sajadeh and praying Chador (4). If there is no sewage disposal, it could be considered as an important pollutant for passengers or the people who live in in the village or near that place. Evaluating the drinking water condition which used in terminals particularly in hot seasons have a special importance (5). According to the Kermanshah city's tourist location and its placement in Rah-Karbala way, annually many passengers travel to this city, tourists travel to a city which has safety and reliability.

Based on the official's statistics from the passenger terminals of Kermanshah in the first four month of the 2011 year, 3729095 passengers traveled to this city. With this statistic, the importance of terminals as a public place with high traffic in the province would reveal. Therefore, existing sufficient passenger terminals, facilities, verification and regular monitoring of these places for satisfying passengers is essential. According to the mentioned subject, the aim of this study is to evaluate the environmental health condition of cargo and passenger terminals of Kermanshah in 2014.

This is a cross-sectional study. For evaluating the environmental health condition of passenger terminals in Kermanshah province, a checklist have regulated based on the law article(number:13) of public places, the food's preparing and distribution center with 86 clauses (3). Then by direct refer to the passenger terminal of province in 2014, the mentioned list had filled out. The total number of the passenger terminal of province is 21 cases and Javanrood, Harsin, Ravansar,

software have used.

Results

The terminals frequency which have direct collection and disposal sewage system and the type of drinking water in their bus are mineral and bottled plump and also confirmed with health officials are 17 case (80.9%) and 5 case (23.8%) respectively. The total sample frequency of the infected water which consumed in terminal are 1 from 11 cases (0.9%) while all samples were consistent with the standard for chemical parameters. During this research in Kermanshah province with 21 passenger terminals, the number and frequency percent of the evaluated items for environmental health condition of these terminals based on the 13 law article of public place, the foods and beverage’s preparing and distribution center are presented in Table1 to Table5. the collection and solid disposal, the public health condition , the praying rooms, W.C and restaurants environmental health condition of cargo and passenger terminals of Kermanshah province presented in table 1-5 respectively.

Table-1: Solid waste disposal and collection condition in cargo and passenger terminals of Kermanshah province.

The related parameters of solid waste disposal and collection in terminals	Frequenc	
	N	P
Terminals which their waste collected totally hygienic	12	57.1
Terminals which their waste temporarily stored hygienic	11	52.3
Terminals which their waste transported to the disposal place totally hygienic	11	52.3
Terminals which their waste disposed totally hygienic	10	47.1
Terminals which their waste managed by municipals	14	66.6
Terminals which their garbage cans are stainless	13	61.9
Terminals which their garbage cans have bungs	8	38
Terminals which their garbage cans are washable	13	61.9
Terminals which their garbage cans are portable	10	47.6
Terminals which their garbage cans have proper volume	13	61.9
Terminals which their garbage cans equipped with garbage bags	1	4.7
Terminals which have enough garbage cans	8	38
The average utility of overall solid waste disposal and collection condition in cargo and passenger terminals of Kermanshah for their the evaluated items consistency with the environmental health standard of terminals	-	49.1

N: Number P: Percent

Table-2: The public health condition of cargo and passenger terminals of Kermanshah province.

The related items to the terminals public health	Frequenc	
	N	P
Terminals which have first aid kits with the necessary materials that installed in right place	7	33.3
Terminals which the charged fire extinguisher installed in right place	9	42.8
Terminals which have a trained person to use fire extinguisher	4	19.0
The average utility of overall public health condition in cargo and passenger terminals of Kermanshah for the evaluated items consistency with the health standards of terminals	-	31.7

Table-3: The praying rooms environmental health condition in cargo and passenger terminals of Kermanshah province.

The related items to the praying rooms environmental health of terminals	Frequency	
	N	P
All the praying rooms	23	100
Terminals which have praying rooms	11	52.3
Terminals which their praying rooms equipped with first aid kit	1	9.09
Terminals which their praying rooms equipped with fire extinguisher	3	27.2
Terminals which their praying rooms have cloths ad Chador	8	38
Terminals which don't allow to take shoes into their praying rooms	7	72.7
Terminals which their floor and curtains are clean	8	38
Terminals which their praying rooms have shoes shelve	4	63.3
The average utility of overall praying rooms environmental health condition of terminals in Kermanshah province for the evaluated items consistency with the terminals environmental health standards	-	36.8

Table-4: The W.C environmental health condition of cargo and passenger terminals in Kermanshah province.

The related items to the W.C environmental health condition in terminals for public used	Frequency	
	N	P
All the W.C in all terminals	73	100
Terminals which have W.C with resistant and washable floor that have slope to the basin and always is clean	16	76
Terminals which have W.C that covered from floor to ceiling with tile, stone, ceramic and marble and are always clean	12	57
Terminals which their W.C have refractory basin , smooth, without fracture, washable and equipped with air gap	13	61.9
Terminals which their W.C have valves that equipped with flexible hoses	10	47.6
Terminals which their W.C have complete ventilation	8	38
Terminals which their W.C prevent the insects entry	4	19
Terminals which their W.C have liquid soap beside its valve	10	47.6

Terminals which their W.C have appropriate doors without cracking, rust-free and are always clean and closure	11	52.3
Terminals which their W.C is equipped with air storage water tank for using at emergency situation	3	14.2
Terminals which have a responsible person for cleaning	5	23.8
The average utility of the overall W.C environmental health condition in cargo and passenger terminals for the evaluated items consistency with the terminals environmental health standards	-	33.6

Table-5: The restaurant’s environmental health condition of cargo and passenger terminal in Kermanshah province.

The related items to the restaurant’s environmental health condition in terminals	Frequency	
	N	P
All the restaurants in all terminals (including sandwiches, deli...)	14	100
Terminals with dining	9	42.8
Terminals which their worker and responsible persons have attended the special public health courses and have valid certificate	3	33.3
Terminals which their workers and responsible persons have valid medical examination card	7	77.7
Terminals which their cooker have light and clean gown	7	77.7
Terminals which their cooker have hats	6	66.6
Terminals which their cookers have gloves	5	55.5
Terminals which their responsible workers for foods prepare and distortion wear light and clean gowns	8	88.8
Terminals which their responsible workers for foods preparing and distribution, prevent the entrance of other people	7	77.7
Terminals which provide a 2.5m ² room for resting of each worker in foods preparing and distribution center	3	33.3
Terminals which their restaurants have first aid kit that installed in right place	6	66.6
terminals which their restaurants have fire extinguisher that installed at right place	8	88.8
Terminals which their restaurant’s worker don’t smoke	9	100
Terminals which their restaurant’s customer don’t smoke	7	77.7
Terminals which their floor is resistant, smooth, without cracking and washable	9	100
Terminals which their restaurants have enough passion floor that equipped with air gap	9	100
Terminals which their restaurants have fine on its passion floor	7	77.7
Terminals which their restaurants have sloe to the passion floor	8	88.8
Terminals which their kitchen walls in the restaurants are smooth light and without cracking	7	77.7
Terminals which their reception hall is covered with at least 120 cm height from floor with ceramic or polished stone and tile. And from 120cm height to ceiling covered with light and washable color	7	77.7

Terminals which their reception halls ceiling is smooth, flat, without cracking and clean	8	88.8
Terminals which their restaurants are resistance, without cracking, corrosion and washable	8	88.8
Terminals which their restaurants have pop-up window which is equipped with proper strainer for preventing the entrance of insects	7	77.7
Terminals which their restaurants have door that overlooking outdoors, have lace and equipped with strainer	4	44.4
Terminals which their restaurant's using water is confirmed with health officials	9	100
Terminals which their restaurants have sanitary sewage collection and disposal system that confirmed with health officials	8	88.8
Terminals which their restaurants have proper hood that equipped with fit ventilator and installed over the oven.	5	55.5
Terminals which their restaurants wash the dishes at the sink that equipped with warm and cold water	7	77.7
Terminals which their restaurant's food-storage ventilated properly and based on the law it is shelving and cleaning	6	66.6
Terminals which their restaurants keep the perishable food in the refrigerator	9	100
Terminals which their reception halls ventilated properly and the air of indoor id healthy, fresh and odor-free	8	88.8
Terminals which their restaurants have tables with smooth, clean, without crack, light and washable surface	7	77.7
Terminals which their restaurants have intact chair and bench	9	100
Terminals which their restaurants don't use non-standard materials such as recycled paper, newspaper and plastic bags for wrapping and packaging the food stuffs	8	88.8
Terminals which their restaurants have refrigerators without unpleasant odor	9	100
Terminals which their restaurants solid waste collected totally hygienic	8	88.8
Terminals which their restaurants have enough garbage cans	8	88.8
Terminals which their restaurants don't have insects and mouse	8	88.8
Terminals which there is no dogs and cats around its kitchen and hall	9	100
Terminals which their utensils are intact and smooth	9	100
Terminals which used refined and ionized salt in their restaurants	9	100
The average utility of overall restaurants environmental health condition in cargo and passenger terminal of Kermanshah for the evaluated items consistency with the environmental health standards of terminals		81

Discussion

The average utility of overall solid waste collection and disposal in cargo and passenger terminals of Kermanshah province for the evaluated items consistency with the environmental health standards is 49.13% which is not a desirable condition (4). from 21 terminals of Kermanshah province, the hygienic collection method have conducted only in 12 terminals, hygienic temporary storing , transportation to the disposal station and final disposal in all terminals have

conducted only in 10 of them and according to the results one of the factors which reduced the proper condition of solid waste collection and disposal in evaluated cargo and passenger terminals is the lack of hygienic garbage cans with proper amount and number or poor hygienic condition of garbage cans. Therefore according to the fact that 66.6% of waste collection and disposal of terminals managed with municipalities, it has been suggested that the transportation organization in coordination with municipalities removed the obstacles and problems which related to the solid waste collection and disposal hygiene in terminals. According to the above results, poor solid waste management condition in terminals and the growth of flies, mice and other rodents in terminals solid waste, could cause the transmission of disease which related to these organisms (6-8). Due to the obtained results, only 5 of 21 cargo and passenger terminals have bottled water in their bus. However, more than 90% of the provinces terminals have consumed water, which is consistent with the standard and only 9% of them have microbial infection. But the efforts in order to distribute bottled water among the buses passenger could prevent contamination and risks (5, 1, 2), because by consuming the tap water in terminals or bus, the probable secondary infection and the risk of the passengers health is possible (9). The average utility of overall public health condition in cargo and passenger terminals of Kermanshah province for evaluated items consistency with the health standards of terminals was 31.72%. Only, 9 of 21 terminals have charged fire extinguisher which installed in right place, and among these, only four terminals have a trained person for using it. Therefore, according to the major risks that exist in the terminals, for fire risks particularly in relation with various types of gasoline cars, the efforts for making fit criterion condition is necessary. In addition to it, based on the results, providing a first aid kit and installing it in right place is in line with this requirement (6). According to many entrance and exit of the passengers in terminals from different cities, existing a praying room in terminals is very necessary. While in Kermanshah's terminal this important fact has been ignored and only 52% of terminals have praying room and the average utility of overall praying rooms environmental health condition for evaluated items consistency with environmental health standards is low and this rate is 36.88%. Therefore, doing some efforts in order to promote this condition by transportation organization, and terminals management and other related organization is necessary (4). there is a concern Due to the low average utility (33.66%) which related to the overall W.C environmental health condition in the campus of cargo and passenger terminals for evaluated items consistency with environmental and public health standards,. Based on the probability of long distance trips (for example travel to the distant city such as Tehran,

Isfahan, Oroomyeh, Tabriz and Ahvaz..) and according to the use of different foods on way, in a case of not observing the individuals health by passengers and not providing facilities, it could cause the emission and prevalence of diseases such as Diarrhea and various types of poisoning. So, the sanitation of the terminals W.C should evaluated seriously (10). The average utility of overall restaurants environmental health condition in cargo and passenger terminals of Kermanshah province for the evaluated items consistency with the terminals environmental health standards in comparison with other evaluated items is proper (81%), but it is still far from the ideal condition. According to the performance of food's preparing and distribution and selling part of public center, terminals have a great importance and directly affected the passenger's health. Therefore paying attention to this fact is very necessary (4).

Conclusion

The observance of hygienic principle in terminals have a great importance due to the fact that passengers terminals is the place of many entrance and exit in the country and the facts such as different origin and destination, entrance and exit of different people and a lot of people in a small place . According to the low utility of the environmental health condition in different parts of the Kermanshah's terminal, the regular monitoring, accurate evaluating and effective intervention of these places should be considered by the related organization such as transportation organization and health officials. And based on the results, this attention and evaluation in order priority W.C, praying room, solid waste managements and restaurants should be related to the terminals public health condition.

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