



**Condition of Management on Hysteresis in The Hospitals
Affiliated to University of Medical Sciences of Iranshahr from
March 2014 to March 2015**

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Abstract:

Background and purpose: Hospital hysteresis are especially concerned because of having dangerous, toxic and pathogenic factors in many countries of the world. Having correct management on hospital hysteresis plays a very important role in controlling the environmental pollutions. The purpose of this research that is about management of hysteresis in the hospitals affiliated to University of medical sciences of Iranshahr, is providing suitable information for a comprehensive and suitable programming and promoting the quality of the future health services.

Methodology: Information and data were obtained by completing the questionnaire, visiting, interviewing and weighing waste of the studied hospitals during 2014-2015.

Findings: There are 432 beds in these four studied hospitals that produce 1104 kg solid waste round the clock and per capita production of waste of each bed is 55/2 kg daily. Also, mean of production rates of overnight and ordinary household hysteresis, infectious and chemical and sharp of each bed are 20/1, 28/1, 062/0 kg respectively.

Discussion and conclusion: It is necessary to hold educational courses according to the volume of industrial waste, specially the hospital hysteresis that are threatening in terms of diseases and infections. Also,

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coordination between responsible systems in the field of needed legislations, education and culturing and allocating the necessary funds are important and influential cases in this issue.

Key words: managing the hospital hysteresis, hospital, beds, Iranshahr.

Introduction:

Hospital hysteresis are all of the infectious hysteresis of hospitals, health centers, medical diagnostic laboratories and other similar centers according to definition of environmental protection agency of Islamic republic of Iran in the act of managing the hysteresis(1).

Hospitals are the health centers that had considerable growth because of overpopulation during the recent years. These changes cause increasing of the number of visitors and diversity of service facilities in the hospitals and increases of industrial waste (2). The high prevalence of infectious diseases and also other diseases in the developing countries cause increasing of hazardous hysteresis of hospitals. It requires the careful and regular management of disposal of these materials. The world health organization classifies the hospital hysteresis as ordinary waste, pathologic, radioactive, chemical and infectious wastes that according to statistics, 75-90 percent of them are industrial hysteresis, ordinary and household hysteresis and waste and the residual 10-25 percent are known as hazardous and infectious hysteresis (3). Also, according to studies and researches, more than half of 630 kinds of chemical materials that were consumed mainly in hospitals, were not very hazardous and 300 of them were hazardous and toxic. Much of it are seen as hysteresis in the hospital waste(4,5).Management of hospital hysteresis has different stages, but generally there are six main stages of separating, packing and tagging, collecting, transporting, reducing the volume of hysteresis , treatment and disposal of the hysteresis(6). Various researches have been done on the field of managing the hospital hysteresis all over the world. We can point to the researches done in the countries of Poland(7), Turkey(8,9), India(10), Portugal(11), Switzerland(12), Bahrain(13), Mongolia(14), Africa(15), South Korea(16) and Nigeria(17). Also, various researches have been done on the cities of Mashhad(18), Sanandaj(19), Yasuj(20), Sabzevar(21), Karaj(22), Arak(23), Tehran(6),Khoram abad(24) , Babol (25), Abbas port (26), Kermanshah (27), Semnan (28), Rasht (29), Shiraz (30) and Gorgan (31) about the per capita industrial hysteresis and quantity and quality characteristics of hospital hysteresis. Management of the hospital hysteresis of the developed countries such as Portugal, Switzerland and South Korea is more complete and coherent than undeveloped countries such as African countries. For example, infectious and non- infectious hysteresis are not separated from each other in most of not developed countries.(11,12,14,15,16,17) In most of the researches that has been done in Iran, although , some of the researches has reported some of the shortcomings in the management of hospital hysteresis, a desired management of hospital hysteresis has been described in almost different cities of Iran.(6,24,25,27,28). In this research, the condition of management of hospital hysteresis of monitored hospitals of Medical science Universities of Iranshahr is studied. Several solutions and practical and executive suggestions are presented in this regard according to the results of the researches for promoting the procedure of management of hysteresis of the studied hospitals.

Methodology:

Iranshahr is one of the cities of the province of Sistan and Baluchistan. Its population is equal to 219,796 according to 2011 census. The center of this city is 321km far from the center of the province. The Medical Science University of Iranshahr was separated from Medical Science University of Zahedan in 2012 and being independence in June of 2013. It covers a population about 750 thousand people and an area of 7000 km of square. This study is a descriptive- cross-sectional study that is done by filling the questionnaire, filling the raw tables, interviews, observation and visit of 4 hospitals sponsored by Medical Science University of Iranshahr. The rate of weight and per capita wastes were determined in addition to determining the condition of waste, separation, storing, collecting, treatment, transporting and disposal of hospital hysteresis. Data were processed in software of Excel. Process of this research was as following: A letter was sent from the honorable vice-chancellor of the university to the educational and health affairs, and then health experts and officials of the hospital infection control gathered the quality and quantity data and information of the hospitals and filled questionnaires. Also, the per capita of infectious, ordinary and sharp wastes was determined and showed in the statistical charts.

Findings:

The total numbers of the beds in these 4 hospitals were 432. These beds produce 1104 kg waste around the clock; so, per capita waste of each bed is 55/2kg around the clock.

Chart1: Rate of waste of the studied hospitals in kilograms around the clock

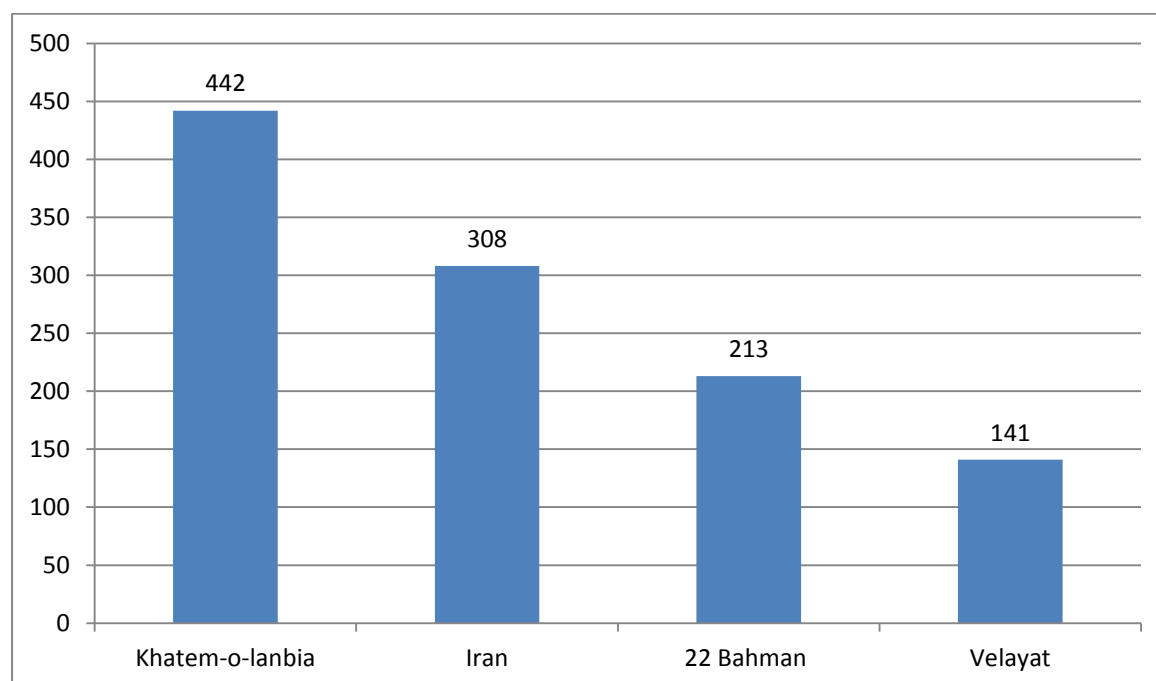


Chart2: Rate of waste of the studied hospitals in kilograms around the clock

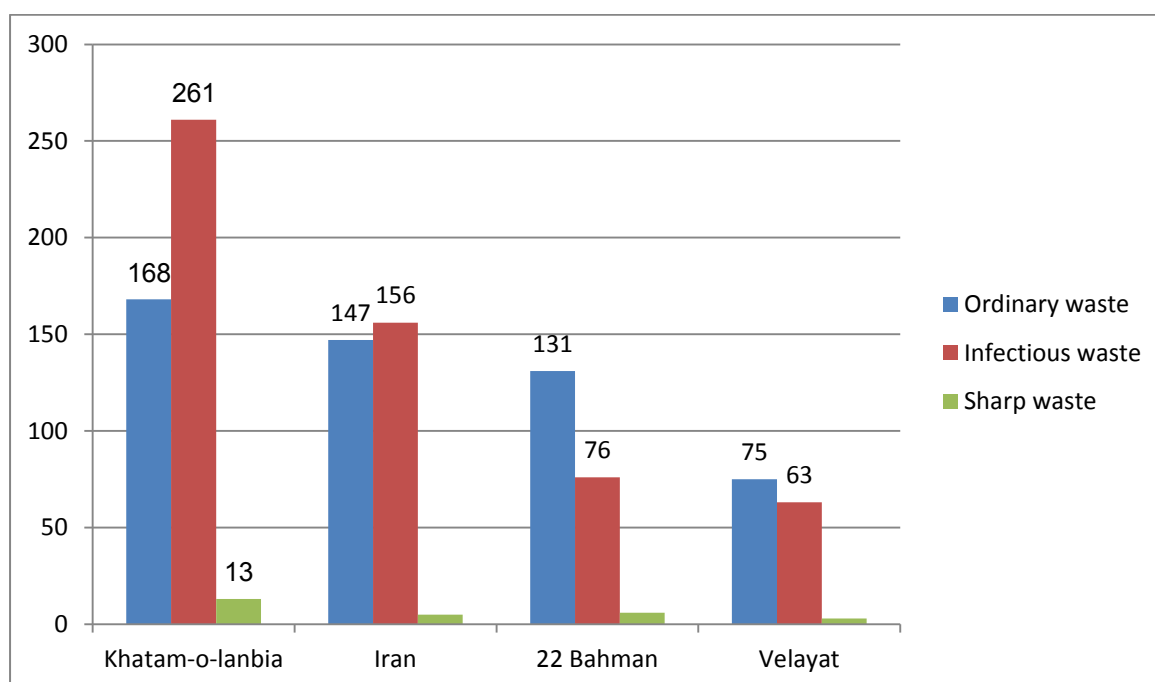
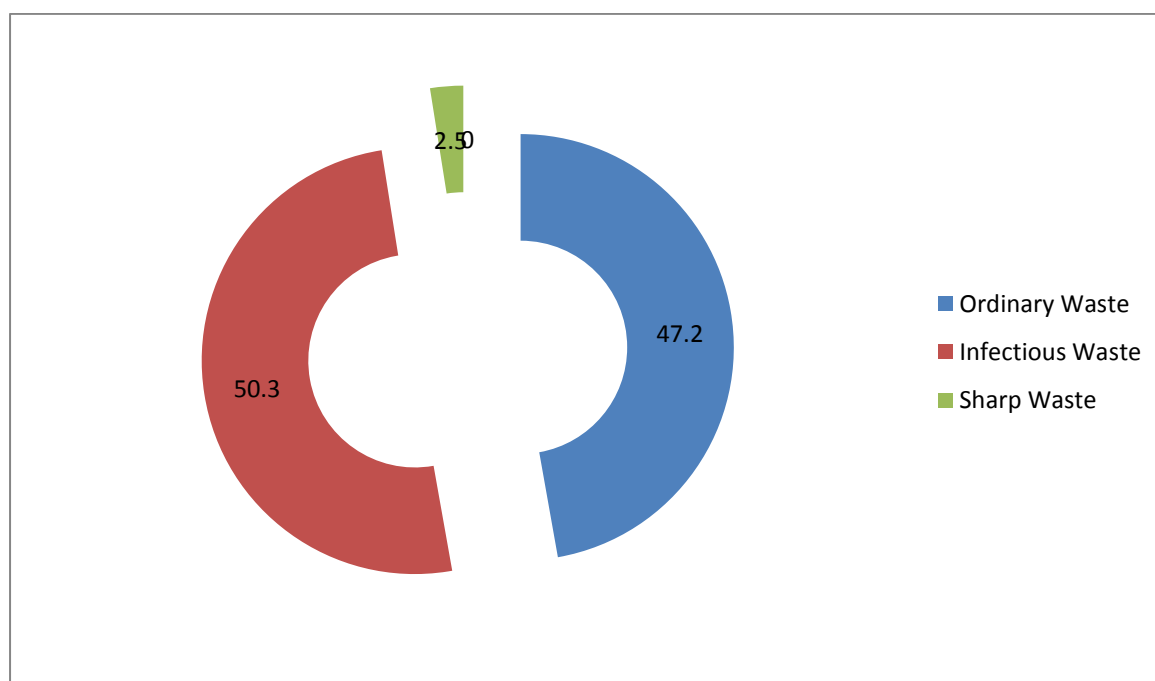


Chart3: Percent of the total rate of producing the kinds of hospital hysteresis



The results of the studies done on these hospitals showed that the staff and personnel of collecting the waste educated properly in 70% of the hospitals. Also, personnel of 80% of hospitals have their own and specific uniforms.

There is a station of temporary storage of waste in each studied four hospitals. The hospital wastes of 75% of the hospitals are stored separately in the temporary station, but only in 75% of these hospitals, yellow tanks (bucket)

are maintained separate from the black tanks (bucket) in the sector of temporary maintenance of the waste. The bags of wastes have tags in 50% of the hospitals.

The infectious, chemical, sharp and ordinary wastes are separated in different parts of all of the hospitals and the yellow bags are used for collecting the infectious – chemical wastes; the black bags are used for collecting the ordinary wastes and also the safety box (specific and resistant box) is used for collecting the sharp wastes. Tanks of hazardous wastes (infectious, chemical, sharp and ordinary) are separated in all of the hospitals and also there are separate suitable color buckets for collecting the hazardous and ordinary wastes. The yellow bags of infectious- chemical wastes are maintained in the yellow tank (bucket). Washing and disinfection of buckets and waste transport tools is done daily in 75% of the hospitals.

Alternation of collecting the waste from different parts of the hospitals is at the time of end of each shift. It is done every eight hours.

About 50% of amputated limbs and organs are almost transported to the cemetery and buried based on its own manner and the residue 50% of them are buried along with the other waste.

Type of waste trucks of 75% of the hospitals is the covered truck of transporting the hospital wastes and the last 25% of the trucks are uncovered ordinary trucks. Several types of wastes are directly transported mixed to the final burial place in 75% of the hospitals. The hazardous wastes (infectious, chemical and sharp) are transported separately to the final burial place in 25% of the hospitals.

Municipal carries the waste of all of the hospitals. No waste of hospital is recovered in the studied hospitals.

The total rates of hospital hysteresis which are studied separately in the 4 so-called studied hospitals are shown in the following table: (The rate of pathologic, amputated organs is not shown because of having less and incomplete information).

Table1: Total rate of various types of hospital hysteresis in the studied hospitals

1104	Total weight of industrial wastes of hospital around the clock in kg
521	Total weight of industrial ordinary and household wastes of hospital around the clock in kg
27	Total weight of industrial sharp wastes of hospital around the clock in kg
556	Total weight of industrial infectious , chemical , pharmaceutical wastes of hospital around the clock in kg

The following table shows per capita rate of several mean hysteresis of each bed in the 4 studied hospitals:

Table2: Per capita rate of several hysteresis of each bed in the 4 studied hospitals

55/2	Mean of the total industrial waste of each bed around the clock in kg
20/1	Mean of the total industrial , ordinary and household waste of each bed around the clock in kg
062/0	Mean of the total industrial and sharp waste of each bed around the clock in kg
28/1	Mean of the total industrial, infectious , chemical and pharmaceutical waste of each bed around the clock in kg

The total and per capita rate of several infectious, chemical-pharmaceutical, ordinary and household, sharp and pathologic hysteresis of each hospital are presented separately:

Table3: Per capita and total hysteresis of each of the hospitals:

Per capita infectious , chemical and pharmaceutical(kg/b/d)	Per capita sharp waste(kg/b/d)	Per capita ordinary and household waste(kg/b/d)	Per capita industrial waste (kg/b/d)	Infectious , pharmaceutical and chemical (kg/b/d)	Sharp (kg/b/d)	Ordinary and household (kg/b/d)	Total of industrial waste(kg/b/d)	bed	Year of establishment	Name of hospital
22/1	06/0	78/0	07/2	261	13	168	442	213	1970	Khatam alania Iranshahr
39/1	04/0	31/1	75/2	156	5	147	308	112	2004	Iran Iranshahr
1/1	08/0	89/1	08/3	76	6	131	213	69	1990	22th of Bahaman Nikshahr
65/1	07/0	97/1	71/3	63	3	75	141	38	2014	Velayat Sarbaz

Discussion and conclusion:

It is shown that according to the results and numbers and information or data of the present research, management of hospital hysteresis has a relatively good and desired condition in the studied hospitals of the Medical Science University of Iranshar, however, there are still shortcomings in different parts of the process of management of hospital hysteresis. These shortcomings are as following: Collecting of wastes is almost without regarding the separation of wastes and the tool used for collecting the wastes from the sectors is not suitable and is insanitary, and sometimes there is some trouble because of the high volume of wastes of buckets. Also, the way of storing the waste is relatively not suitable in the temporary station of most of the hospitals and not timely cleaning and disinfection and presence of insects and animals are other troubles of the temporary stations of wastes.

About 1104kg of hysteresis these four hospitals are collected daily according to this study. 1/50% of them are infectious hysteresis. Maximum allowed rate of the infectious hysteresis are 6-12% of hospital hysteresis that according the world health organization [WHO] need a specific process and programming. Allocating about 1/50% of industrial wastes to infectious wastes shows not completely separation of infectious and household hysteresis. It is necessary to pay more attention to it.

One of the main problems in this regard is sterilizing the chemical wastes from the infectious wastes without separation and in a mixed way and also the method or way of transporting of indiscriminate wastes by municipal machines to the final station of trash disposal and not suitable conditions of the final station are all evidence of defect of the process of management of hospital hysteresis in the so-called hospitals. If it is not managed properly, it can pollute staff in addition to indirect emission of pollution.

The mean per capita of hospital waste of Iran is 7/2 kg each bed daily according to the statics in 2009. The per capita industrial waste of hospital in Iranshahr is more than this rate. It can be realized that the per capita of industrial hysteresis of our country is in the mid-range of the world industrial hysteresis when we comprise per capita industrial hospital hysteresis of Iran with per capita industrial hospital hysteresis of the world.

Results of this research are a warning to the relevant authorities in order to resolve this problem immediately by cooperation and assistance and not so much cost. Surely, the harmful consequences of such a process that are mainly hidden and so far no statistics and figure are prepared for them in the country , are not considered and criticized , is not negligible. When the costs medicines and treatment and ancillary services of the hospital are comparing with each other, it is deduced that the performance of such a main and health function is completely affordable in addition to health actions and conscience and moral duties.

As it is noted, another part of this research is about measuring various kinds of waste and determining their percent that can be used for correct planning and programming of the system of collecting and disposal of infectious wastes by getting information and preparing a comprehensive statistics. So, general policy of required equipment, staffing and costs can be estimated according to this point, and then this process is continuously and comprehensively monitored by an informed and motivated management.

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