Original Research Paper

Volume-10 | Issue-2 | February - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Economics

ENVIRONMENTAL CHALLENGES IN THE BIO-MEDICAL WASTE DISPOSAL : A MICRO LEVEL ANALYSIS IN COIMBATORE

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ABSTRACT Hospitals play a vital role in curing diseases and improving the health of the people. At the same time the improper disposal of bio-medical wastes by hospitals generate more diseases. As the number of patients and hospitals are increasing, the generation of bio-medical waste is also on the increase. This is of serious concern because such wastes cause various diseases like viral hepatitis, Bronchitis, TB and AIDS. In India, the Ministry of Forests and Environment has been taking various steps for proper disposal of hospital wastes. An Act named the Bio-Medical Waste (Management and Handling) Rules 1998, was enacted, and a deadline was fixed (31st December 2002) for the hospitals to take proper action for disposing bio-medical waste. Later bring in a wider and more comprehensive regime for bio waste management. To know the present status of the bio-medical waste management and how far the rules were followed, the present study was undertaken at a micro level, namely Coimbatore City in Tamil Nadu. To bring out the issues related to cleanliness, segregation of bio-medical waste and methods of disposal 36 out of 76 private hospitals were selected to conduct the study. The selected hospitals were personally visited to ascertain the condition of bio-medical waste management and the results are given in this article.

KEYWORDS :

INTRODUCTION

Today India is facing many environmental challenges and one among them is in the health sector. Due to modernization, many changes have taken place in this sector. Like wise, there is also an improvement in the treatment provided by the Indian hospitals. Though these things are considered to be an advantage, there are also some serious outcomes. One among them is the poor health care waste management or bio-medical waste management system in the hospitals. To improve this situation the Indian government has brought out many rules and regulations in order to protect the environment from the indiscriminate dumping of bio-medical waste.

During the last two decades, management and control of waste have become one of the most critical environmental problems facing human kind. The management of Bio-Medical Waste in particular, has become a matter of serious concern in developing countries. In India, the Ministry of Forests and Environment has the responsibility for promulgating practical guidelines and presenting standards to assist health care facilities in the effective management of these wastes. An Act named the Bio-Medical Waste (Management and Handling) Rules 1998, was enacted, and a deadline was fixed (31st December 2002) for the hospitals to take proper action for disposing bio-medical waste.

Threats from Health-care Waste

Hazardous Bio-Medical Wastes, when ineffectively managed, may compromise the quality of patient care. Additionally, these wastes present occupational health risks to those who generate, package, store, transport, treat or dispose of them. Each year, large quantities of hazardous wastes are produced by hospitals and other health care and research facilities in India. The country is seriously constrained by lack of financial resources and trained staff to attend to this problem. Typically, at the local level, only a few individuals or hospital management personnel are familiar with the elements of proper waste management. In many instances waste handling is left to the lowest category of workers who generally operate without any training and with minimum guidance and supervision. Oftentimes, temporary staff handles such waste. Moreover, hospitals and clinics have little government guidance in waste management. Consequently these hazardous wastes are often mixed with municipal solid wastes and deposited untreated in uncontrolled landfills.

Issue

To know the present status of bio-medical waste and how far the prescribed rules are followed, there is a need for a micro level study. That is, it has been reported that even after the deadline by the government and warning by Tamil Nadu Pollution Control Board, many hospitals (both in private and in government) are not following the set standards of bio-medical waste collection, transportation and disposal. Hence, to ascertain the issues of health-care waste at the hospital level, the present study has been taken up.

METHODOLOGY

The study has been conducted in Coimbatore city. The data presented here are collected from the hospitals numbered 36.

Source and Method of Data Collection and Interpretation

The data were collected by personally visiting the hospitals. Thirty-six hospitals were visited as a preliminary step to know the present situation of bio-medical waste management. In some hospitals responses from sweepers were also obtained. In a few hospitals they were not ready to disclose anything to the outsiders. Thus observations were made in those hospitals. The collected data were interpreted under the following heads

Location of the Hospitals

Hitherto secluded hospitals have now found themselves in the midst of busy traffic, revealing themselves to high levels of noise and air pollution. High concentration of hospitals was found in the R.S. Puram, Gandhipuram and Ramanathapuram areas.

Nature of the Hospitals

Hospitals visited included Child Specialist, Maternity homes, orthopedic and Heart Speciality, Kidney Speciality once, among others. Except few hospitals, (below bed strength of 25) almost all the hospitals visited were having facilities like operation theaters, X-rays, Scan, etc., These hospitals also lacked proper security arrangements. It was noticed that (20 out of 36) were had proper parking facilities. Time restrictions for visitors were found in 15 hospitals. Only in 2 hospitals entry was strictly restricted by the securities by enquiries. It was also interesting to know that majority of the hospitals (20) were running educational institutions, like paramedical science. All the hospitals were having pharmacy inside the hospital. There were also boards for doctors, visiting doctors and specialists and sign boards like no smoking, switch off mobile phones, do not spit, use dust bins, silence please etc., Hospitals having bed strength above 50, were having the lift facilities. Canteen facility was made available in majority of the hospitals (22).

Cleanliness of the hospitals

Regarding floor cleanliness, almost all the hospitals were cleaning the floors twice a day, using phenyl and soap oil. Majority of the hospitals visited were very clean. In a few cases, the floors were not clean as the sweepers did sweeping infrequently.

Sweepers

Majority of (25 out of 36) the hospitals provided uniform to the sweepers. Only in few hospitals (10 out of 36) gloves were provided to the sweepers. Though gloves were provided none of the sweepers were neither interested nor insisted to wear the gloves and mask. Only at the time of disposing hazardous waste they wore the gloves and mask. In addition, it was found that the sweepers were also uncomfortable in wearing footwear while they were at work.

Dustbins - Colour Coded Buckets

In almost all the hospitals the dustbins were found in each room, section, ward and outside.

Colour coded buckets like yellow, red, blue / white colours were used

to dispose the bio-medical wastes according to its nature. The sweepers were mainly from poor background and they were also illiterates. It is for this reason (easy identification) that colour coded buckets came into existence. The sweepers can classify the wastes like general waste, food waste, hazardous waste, non-hazardous waste and plastic wastes, put into the appropriate buckets.

All the selected hospitals were using colour-coded buckets with labels for disposing the wastes. Each floor in this hospital colour coded buckets are placed.

Source Segregation of Wastes

It was interesting to know that all the hospitals visited were segregating the waste at the place of its origin. The wastes were classified into plastic wastes, cotton wastes, catheters, syringes, IV sets, hazardous waste and non-hazardous wastes. The segregation of wastes is done at source and they were put into the appropriate buckets.

Past and Present Method of Disposal of Bio-medical Waste

It was observed that the hospitals visited had their own method of disposal of bio-medical waste: disposing bio-medical waste with the help of corporation lorry (10); along with municipal waste, 6 hospitals segregated the wastes and sent it to their own farms; burning the wastes in a nearby place was the past practice.

The Bio-medical Waste (Management & Handling) Rules, 1998, which was again amended in 2000, 2003 and 2011 by Ministry of Forest and Environment (MoEF) and taken further forward by Central and State Pollution Control Board, favouring a common disposal facility a private operator, M/s Tekno Therm Industries, has been established. This firm is operating the facility since 2002 and it became fully functional in 2007. As many as 400 hospitals and health care centres including Coimbatore Medical College Hospital and 32 urban health posts of the city municipal corporation hand over their bio medical waste to this agency.

Later, the Environment ministry released the new Bio-medical Waste Management Rules, 2016 which will bring in a wider and more comprehensive regime for bio waste management. The new bio-medical waste management rules will change the way country used to manage this waste earlier. Under the new regime, the coverage has increased and also provides for pre-treatment of lab waste, blood samples, etc. It mandates bar code system for proper control.

Environment Challenges

Due to improper collection, segregation, transportation and disposal of health-care waste the following sections of peoples were affected: inside the hospital, patients, doctors, nurses and sweepers; outside the hospital, people living nearby the place, where disposing of health-care waste takes place.

The effect of such improper disposal would result in spread of diseases through water and air pollution. The degree of effects is qualified by direct or indirect contact with the wastes.

CONCLUSION

The implementation of Bio-Medical Waste Management (2016), increased the coverage of health-care institutions, simplified categorization and compulsory authorization from the Pollution Control Board. This has been applicable to all hospitals and laboratories. It also mandates bar code system for proper control. Finally, it resulted in disposal of bio-medical waste in a scientific and effective manner without harming the environment. On the basis of understanding both the sides of Bio-medical waste management in Coimbatore hospitals and Common Facilitator, it can be concluded that a well-defined Bio-medical waste management system is in place.

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