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CONCEPTUAL FRAMEWORK ON CORPORATE SOCIAL RESPONSIBILITIES (CSR) ON BIO WASTE MANAGEMENT IN RURAL AREAS – WITH SPECIAL REFERENCE TO NEIGHBOHOOD PERCEPTION ON HOSPITALS IN PONDICHERRY REGION

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***ABSTRACT**--Medical care is vital for our life and health, but the waste produced from medical activities represents a real problem of living nature and human world. Improper management of waste generated in health care Hospitals causes a direct health impact on the community particularly those who are living nearby hospital areas. In addition to that, waste created from hospitals affects the health care workers and on the environment each day, relatively large amount of potentially infectious and hazardous waste is generated in the health care hospitals. Indiscriminate disposal of Bio Medical Waste (BMW) or hospital waste and exposure to such waste possess serious threat to environment and to human health that requires specific treatment and management prior to its final disposal. The present study deals with the basic issues relating to biomedical waste, procedure of handling and disposal method of Biomedical Waste Management. Further, the study is conducted among the neighborhoods of the hospitals in Pondicherry area to get their perception on biomedical waste disposal and handling it. It also proposes to create awareness about safe disposing of Bio Medical Waste among the personnel involved in health care unit.*

***Keywords**-- Bio Medical Waste Management, Chemical process, Hazardous waste, Health care unit, Pharmaceuticals.*

I. INTRODUCTION

All human activities produce waste and such waste may be dangerous and needs safe disposal. The wastes such as Industrial waste, sewage and agricultural waste pollute water, soil and air pollution affects the environment. These wastes are hazardous to human beings and environment. Correspondingly hospitals and other health care facility centers generate lots of waste which can transmit infections, particularly Human Immune Virus (HIV), to the people who handle it or come in contact with it. Most of the countries of the world, especially the developing

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nations, are facing the grim situation arising out of environmental pollution due to pathological waste arising from increasing populations and the consequent rapid growth in the number of health care centers. India is not exclusion to this and it is estimated that there are more than 15,000 small and private hospitals and nursing homes available in the country. This is separately from health centers and pathological labs, which also generate large amounts of medical waste. India produces about three million tons of medical wastes annually and the quantity is supposed to grow at eight per cent per annum. Creating huge dumping grounds and incinerators is the first pace and some progressive states in India such as Maharashtra, Karnataka and Tamil Nadu are constructing efforts even though unfriendliness of the local community. Barring a few large private corporate hospitals in metropolitan cities, none of the other smaller size of the hospitals and nursing homes has any efficient system to securely dispose of their wastes. With never mind or carefulness, these health institutions have been discarding waste in neighboring municipal storage bins or even poorer, out in the open areas. Such a careless discarding has been promoting unlawful and unsafe recycle of medical waste by the rag pickers for some years now. Investigations carried out by different agencies explain that the health care establishments in India are not providing due concentration to their waste management. After the advising of the Bio-Medical Waste Handling and Management Rules, 1998, these establishments are gradually streamlining the progression of waste separation, collection, treatment, and dumping. Many of the larger hospitals have either installed the treatment facilities or are in the practice of doing so.

According to Biomedical Waste Rules, 1998 of India states “Any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities relating thereto or in the creation or testing of biological wastes”. The Government of India specifies that Hospital Waste Management is a part of hospital’s cleanliness and safeguarding actions. This involves management of variety of activities, which are mainly engineering functions, such as collection, transportation, action or treatment of processing systems, and discarding of wastes. Further, bio-medical waste means “any solid and/or liquid waste including its container and any intermediate product, which is generated during the diagnosis, treatment or immunization of human beings or animals”. Biomedical waste poses hazard due to two principal reasons the first is infectivity and other toxicity.

In a World Health Organization (WHO) meeting in Geneva, in June 2007, core principles for achieving safe and sustainable management of health-care waste were generated. It was pressured that through right investment of resources and complete commitment, the destructive consequences of health-care waste to the people and environment can be diminished. All stakeholders associated with financing and supporting health-care activities are morally and lawfully obliged to guarantee the safety of others and therefore should share in the cost of appropriate management of Bio Medical waste. In addition, it is the duty of manufacturer to produce environment-friendly medical devices to ensure its secure disposal. WHO reinforced that government should designate a part of the budget for creation, support, and maintenance of efficient health-care waste management system. These include novel and ingenious methods and devices to reduce the bulkiness and toxicity of health-care waste. Non-governmental Organization should undertake programme and activities that contribute in this incentive.

Classification of Bio-Medical Waste

The Medical Waste Tracking Act of 1988 describes medical waste as "any solid waste that is produced in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biological." Medical waste can be classified as follows:

The World Health Organization (WHO) has classified medical waste into eight categories: (i) General Waste, (ii) Pathological, (iii) Radioactive, (iv) Chemical, (v) Infectious to potentially infectious waste, (vi) Sharps, (vii) Pharmaceuticals, (viii)Pressurized containers.

Sources of biomedical waste

Hospitals produce waste, which is increasing over the years in its quantity and type. The hospital waste, in addition to the risk for patients and personnel who handle them also poses a threat to public health and environment.

Major Sources of Biomedical Waste are

- Govt. hospitals, private hospitals, nursing homes and dispensaries.
- Primary health centers.
- Medical colleges and research centers and paramedic services.
- Veterinary colleges and animal research centers.
- Blood banks, mortuaries and autopsy centers.
- Biotechnology institutions.
- Production units

Minor Sources of Biomedical Waste:

- Physicians and dentists' clinics
- Animal houses and slaughter houses.
- Blood donation camps.
- Vaccination centers.
- Acupuncturists, psychiatric clinics and cosmetic piercing.
- Funeral services.
- Institutions for disabled persons

Requirement of biomedical waste management in hospitals

The reasons due to which there is great need of management of hospitals waste such as:

i. Injuries from sharps leading to infection to all categories of hospital personnel and waste handler and nosocomial infections in patients from poor infection control practices and poor waste management.

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ii. Risk of infection outside hospital for waste handlers and scavengers and at time general public living in the vicinity of hospitals and Risk associated with hazardous chemicals, drugs to persons handling wastes at all levels.

iii. "Disposable" being repacked and sold by unscrupulous elements without even being washed.

iv. Drugs which have been disposed of, being repacked and sold off to unsuspecting buyers. Risk of air, water and soil pollution directly due to waste, or due to defective incineration emissions and ash.

Biomedical Waste Management Process in India

There is a big network of Health Care Institutions in India. The hospital waste like body parts, organs, tissues, blood and body fluids along with soiled linen, cotton, bandage and plaster casts from infected and contaminated areas are very essential to be properly collected, segregated, stored, transported, treated and disposed of in safe manner to prevent nosocomial or hospital acquired infection.

i. Waste collection
ii. Segregation
iii. Transportation and storage
iv. Treatment and Disposal
v. Transport to final disposal site
vi. Final disposal

Biomedical Waste Treatment and Disposal

Health care waste is a heterogeneous mixture, which is very difficult to manage as such. But the problem can be simplified and its dimension reduced considerably if a proper management system is planned.

II. METHODOLOGY OF THE STUDY

The study is conducted with the major objective of identifying the biomedical wastages in hospitals and their disposal management. For this purpose, a survey is conducted to the neighborhoods of the selected hospitals in Pondicherry. Questionnaires are circulated to the 113 neighborhood households near by the hospitals, to get the first hand information through perception related to disposing bio medical waste by the hospitals in Pondicherry area. The collected data are analyzed with the help of statistical tools by using Statistical Package for Social Sciences (SPSS) package.

III. RESULTS AND DISCUSSION

Biomedical waste comprises human and animal anatomical waste, treatment apparatus like needles, syringes and other materials used in health care facilities in the process of treatment and research. This waste is generated

during diagnosis, treatment or immunisation in hospitals, nursing homes, pathological laboratories, blood bank, etc. In Pondicherry, total neighborhood perception about bio medical waste management of hospitals sample size is 113. Perception on different bio medical waste is expressed by the hospital neighborhood respondents.

Table 1: opinion of the respondents with respect to bio medical waste management by hospitals

Variable	Poor	Average	Good	Total	Mean	S.D
Categorizing Bio-Medical waste.	33	22	58	113	2.12	0.78
	29.20	19.47	51.33	100.00		
Using color coding for waste collection bags	40	25	48	113	2.04	0.61
	35.40	22.12	42.48	100.00		
Segregation of Bio Medical waste	25	33	55	113	2.25	0.59
	22.12	29.20	48.68	100.00		
Labeling of waste collection bins as cytotoxic and Biohazard.	38	28	47	113	2.19	0.55
	33.63	24.77	41.60	100.00		
Proper handling of waste in order to avoid injuries and infection to the workers.	55	20	38	113	1.02	0.60
	48.67	17.70	33.63	100.00		
Proper storing of collected waste.	52	19	42	113	1.54	0.72
	46.02	16.81	37.17	100.00		
Transporting in a special vehicle to prevent the direct contact from public.	67	12	34	113	1.98	0.59
	59.29	10.62	30.09	100.00		
Proper personnel safety devices to the waste collectors (gloves, masks, boots, etc..)	49	20	44	113	1.95	0.76
	43.36	17.70	38.94	100.00		

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Using of trolleys & wheel borrows for handling the collected wastes.	60	23	30	113	1.01	0.64
	53.10	20.35	26.55	100.00		
Using of separate lift for taking out the collected waste	62	15	36	113	1.04	0.58
	54.87	13.27	31.86	100.00		

From the table-1, it explains that the neighborhoods of the hospitals in Pondicherry are satisfied with the some of the activities of biomedical waste management and some of the activities are not fully satisfied. The satisfied activities are Categorizing Bio-Medical waste were the number of respondents opted for good is 58 and the mean value is calculated as 2.12. Using color coding for waste collection bags were the number of respondents opted for good is 48 and the mean value is 2.04. Segregation of Bio Medical waste were the number of respondents opined for good is 55 and the mean value is 2.25. Labeling of waste collection bins as cytotoxic and Biohazard were the number for respondents opted for good is 47 and the mean value is 2.19.

The sample respondents are not fully satisfied by the following activities. proper handling of waste in order to avoid injuries and infection to the workers were the number of respondents opted for poor is high 55 and the mean value is 1.02.Proper storing of collected waste were the number of respondents opted for poor is high 52 and the mean value is 1.54.Transporting in a special vehicles to prevent the direct contact from public were the number of respondents opted for poor is high 67 and the mean value is 1.98.Proper personnel safety devices to the waste collectors (gloves, masks, boots, etc..) were the number of respondents opted for poor is high 49 and the mean value is 1.95.Using of trolleys and wheel borrows for handling the collected wastes were the number of respondents opted for poor is high and it is 60 and the mean value is 1.01.Using of separate lift for taking out the collected waste were the number of respondents opted for poor is high 62 and the mean value is 1.04.

IV. CONCLUSION

From the above study, it is clearly understood that, most of the hospitals in India are not strictly following the rules prescribed by the Waste Management Board, and the governments, especially in towns and small cities. This creates harm and become hazards to the general public living around the hospitals. It is required that the governments have to strictly follow the rules and punish by way of collecting fine and penalties from the hospitals which are not following them. It is the duty for all the hospitals for maintaining their Corporate Social Responsibility (CSR) and also ethical needs like safeguarding the neighborhood environment by way of not causing harm to the air, water, soil, birds and animals and also to the general public. And it is also mandatory to frame a separate guideline to all hospitals that the certain amount on their net profit has to be compulsorily used for the CSR activities, as it is prescribed for all companies under Companies Act 2013.

V. SUGGESTIONS

From the study it is suggested that, as provided by bio-medical waste rules, the whole of the waste should be fragmented into colors due to their hazardous nature. Bio-medical waste Management Board (BWMB) can be established in each and every district. Either judicial powers should be given to the management board or special court should be established in the issues of environment pollution for imposing fines and punishment for damages etc. Housekeeping employees should wear defensive devices such as gloves, face masks, gowned, while handling the waste. There is biomedical waste label on waste carry bags and waste carry trolley and also poster have to be put on the wall adjacent to the bins waste giving particulars about the category of waste that has to arrange in the baggage as per biomedical waste management rule. Carry bags also must have the biohazard symbol on them. By following these suggestions on the bio medical waste management by the hospitals their neighborhood environment will be safeguarded.

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