



A Survey on Awareness of the People on Solid Waste Management at Greater Hyderabad Municipal Corporation, Telangana, India

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ABSTRACT

Indiscriminate dumping of solid waste has become a serious environmental problem to society and environment. Waste was an unavoidable by-product of human activities. Economic development, urbanization and improved living standards in cities contribute to increase in the quantity and complexity of generated solid waste. If accumulated, it leads to degradation of urban environment, stresses natural resources and leads to health problems. In this research paper the Survey has been carried out among 370 households of Greater Hyderabad Municipal Corporation.. A questionnaire was designed on various aspects of waste management such as waste generation, segregation, disposal practices of metal and glass, management of plastic waste, disposal of household hazardous waste and so on.. The main aim of the survey is to analyze the opinions of the citizens about Solid Waste Management. In this survey it was found that 73% of the residents revealed that they store the waste in a plastic bucket or dust bin and 25% of the households store in a plastic carry bag and only 2% throw out on road side. Ninety six percent of the respondents store the waste in the premises is twenty four hours, 88% of the people did not segregate the waste, 65% of the people used buckets for waste storage, about 75% of the households handed over the garbage to the waste collector, 92% of the respondents considered that garbage is a serious problem, 99% did not do composting the waste, 96% of the households did not like to practice vermi composting technology.

KEYWORDS : Greater Hyderabad Municipal Corporation, Questionnaire, Waste segregation.

Introduction:

The Municipal Solid Waste (MSW) management significantly contributes to the emissions of green house gases into the atmosphere and therefore management of this waste is vital for a healthy environment (syamala devi et al, 2013). Management of MSW has become a significant environmental problem especially in metropolitan cities (syamala devi et al 2013). Pollution and health risks are created by improper solid waste management that cause major worry to any government, especially in developing countries (syamala devi et al, 2013). Lack of awareness, infrastructure, planning and public awareness is surely the main culprits in this regard. This study analyzes and compares the findings of the study of the characterization and the generation and disposal of domestic solid waste. People always generate solid waste through their daily activities and, they need to be properly managed in a way to minimize the risk to the environment and human health. Therefore, a survey was conducted to understand the present status of domestic solid waste management in Greater Hyderabad Municipal Corporation (GHMC).

Material and Methods

In the GHMC, there were a total of 150 wards. Each ward consisted of approximately 37,000 households. The present study included Dilsukhnagar and Kukatpally areas. The households selected for the administration of questionnaire was about 1-1.5% of the total households in each ward, on a simple random basis adopted from a method recommended by which researcher or Author (Give reference). Eight hundred and 900 questionnaires were distributed in Dilsukhnagar and Kukatpally areas, respectively. Out of which, only 380 and 415 questionnaires could be collected back from the respondents.

The survey was conducted during April to July 2009. Questionnaires were designed based on the literature reviews and were sent to residents. The questions covered various aspects such as waste generation, segregation, disposal practices of metal and glass, management of plastic waste, disposal of household hazardous waste, role of rag pickers and involvement of Municipal Corporation. The main aim of the survey was to analyze the opinions of the citizens or to know the pulse of the citizens about Solid Waste Management. SWM.

Results and discussion

1. Storage of Waste

Every day waste is generated in any house and this whole waste had to be temporarily stored before it is disposed in the next morning. Nearly three fourths 72% of the respondents revealed that they store the waste in a plastic bucket or dust bin and 25% of the households store in a plastic carry bag and only 3% 2% throw out on road side.

2 Time of storage at Home

The duration of storage of domestic waste in the premises was one day in general and 96% of the respondents confirmed this. When the routine collection was done regularly 3% people were ready to keep it two days and only one percent was not ready to dispose it on their own.

3. Segregation of Domestic Waste

In the physical observation, it was found that 88% of the people did not segregate the waste, because they do not have the knowledge of segregation. Only 12% of the people segregated the waste at source itself.

4. Container used for Storage

In the survey it was found that 65% of respondents used buckets because they are easy to handle and have lids while 35% of the households use plastic carry bags because they were less costly, available in plenty and easy to dispose.

5. Disposal Method Followed by Residents

About 75% of the households handed over the garbage to the waste collector; nearly twenty percent of the households disposed the garbage in the municipal bins and 5% discarded on the road side.

6. Opinion whether Waste Disposal is a Serious Problem or Not

It was revealed in the present study that 92% of the respondents considered that garbage disposal as a serious problem, whereas 8% of the households considered it as not a serious problem.

7. Composting at House

The majority of the households (99%) did not do composting and only 1% under took composting.

8. Willingness to undertake Vermicomposting Technology

Ninty six per cent of the householders did not like to practice vermi composting technology due to the lack of know-how and scientific awareness while the rest liked to practice the technology.

9. Number of Newspapers or Periodicals Subscribed

In the survey it was found that 68% of the households subscribed only one newspaper, 19% subscribed two, 8% subscribed 3 while 5% subscribed more than three papers.

10. Ways of selling Waste Paper

In the present survey it was understood that 80% of the respondents sold their waste to rag pickers, 15% to the local shops and 5% gave it to housemaids.

11. Frequency of Selling Waste News Papers

In the physical observation the investigator found that 87% of the households disposed the paper monthly, 8% sold quarterly while 5% half yearly.

12. Disposal Method of Metal, Glass and Plastic

Metal, Glass and Plastic are recyclable wastes. In the present study it was found that majority of the respondents (52%) disposed metal, glass and plastic articles into the storage bins along with the garbage; 38% of the households, selling to the rag pickers; 7% of the households, sold these wastes in local shops while 3% dumped it either at road side or the home premises.

13. Types of plastics Generated as Wastes in the Households

In the investigation, it was revealed that 65% of wastes were packing covers, 28% of packing materials, 3% of plastic bottles while 4% others generated.

14. Purchase of Vegetables / Grocery in the Plastic Package

Majority of the (98%) households purchased vegetables or grocery in plastic packages; whereas 2% used cloth bags or jute bags.

15. Buying Milk in Plastic Sachets

Instead of waiting for milk boy, people depended on milk pockets, because of more availability. Whenever people want, they can go and buy the packets. It was revealed in the study that 86% of respondents depended on milk sachets and 14% depended on others.

16. Plastic Bags used by the Households per Week

In the present survey, it was observed that 45% of households used was less than 20 plastic bags, 35% of the people used 20 - 50 bags, 15% used 50 - 75 bags and only 5% used more than 75 plastic bags per week.

17. Disposal Methods followed for Disposal of Plastic Wastes

During the research, it was found that 65% of the households deposited their waste in the municipal waste bins, 20% of the households gave it free to the housemaids who sold them later, 5% sold at the local shops, 4% sold to the rag pickers, 3% carelessly thrown away while 3% burnt in their own premises.

18. Reuse of Bottles or Carry Bags

Reuse is one of the important steps in the Reduce, Reuse and Recycle (3R's) approach. Major percentage of the respondents (96%) replied that they were in the habit of reusing plastic bottles and carry bags and the rest (4%) replied that they never reused them.

19. Awareness on Air Pollution caused by burning of plastic wastes

In the study it was noted that 55% of the respondents were aware that burning of plastics was harmful and caused health hazards and 45% was not aware of it.

20. a) Opinion on the use of substitutes for plastic bags

In the survey 92% of respondents liked to use other substitutes from

plastic bags, because these plastics cause potential threat to man and the environment.

20. b) Type of Substitutes for Plastic Bags

Majority (88%) of the households in the survey preferred cloth bags, 10% preferred jute bags while 2% preferred paper bags, though the paper bags are eco - friendly material, to make one tonne of paper, it requires approximately 17 numbers of trees and this paper and pulp industry responsible for cause of water pollution.

21. Disposal Method Followed by the Residents for Disposal of Hazardous W

About 88% of the households disposed the waste along with other wastes and only 2% burnt it with other wastes.

22. Visit of Rag pickers for Waste Collection

In the present survey majority of households (85%) replied that rag pickers made visits to their houses for waste collection; 8% responded that rag pickers do not visit their houses or locality while 7% responded that they do know any thing about rag pickers.

23. Frequency in the Homes Visiting

In the survey, majority of the householders (95%) replied that rag pickers were making regular visits and 5% responded that rag pickers were not making regular visits for waste collection.

24. Rag Pickers make Payments for Waste

Rag pickers were doing the services to the householders on payment basis. In this research it was found that majority (85%) answered that they did make payments for waste collected and only 15% answered that they did not make payments for the waste collected.

25. Level of Satisfaction on MSW

Major percentages (65%) of the respondents were dissatisfied with the present solid waste management system of GHMC, whereas 35% reported satisfaction,

26. Knowledge about Door - to - Door Collection of Waste

That the majority of the respondents (65%) are aware of the door - to - door waste collection practiced in other parts of the country and 35% are unaware of it.

27. Opinion that Door - to -Door Collection is a Better Method

The majority (92%) of the households believed that it was a better method of waste collection because it is a way of creating employment to the rag pickers.

Conclusion:

The survey on solid waste management carried out among 370 households of GHMC showed that majority (88%) of them segregated household's wastes at source itself. It indicated that there was generally great awareness among the people on the advantage of segregating and sorting out wastes at the generation stage itself. However, none of them discarded the wastes in the home premises and 25% deposited it in the community bins or roadsides. It was a general feeling among the respondents that the garbage bins were few and situated at unsuitable locations. Location being an important determinant of acceptance or rejection of a facility, it was not surprising that people preferred to throw the garbage at roadsides.

It was in this context that a great majority (92%) of the households considered garbage disposal as a serious problem. They were also not satisfied with the performance of the corporation workers in waste removal. But it was evident from the survey that 4% of people undertook microbial composting by themselves for organic waste disposal. Even though biodegradable waste management using earthworms is an excellent technology, majority (96%) of households did not practice this method due to the lack of technological know - how and non - availability of materials like compost unit and worms required for the process. However, majority (52%) of the respondents disposed metal, glass and plastic articles into the storage bins along with garbage. But 38% of the households, selling to the rag pickers; 7% of the households, sold these wastes in local shops and 3% dumped it either at road side or the home premises.

The survey also showed that the use of plastic sachets or carry bags was higher among the households. Majority (98%) of the households purchased vegetable, grocery or milk in plastic bags and on an average; the consumption was eleven carry bags per week. Since plastics could be recycled, some (4%) of the households in the study area opted to sell plastics to the rag pickers or local shops. But 3% of the households carelessly threw them away or deposited in the municipal dustbin.

Competing Interest: Municipal Solid Waste disposal is a global concern, most especially in developing countries across the world, as poverty growth and high urbanization rates combine with ineffectual and under-funded governments to prevent efficient management of wastes.

Authors Contribution: The survey conducted among the 370 households of GHMC focusing on awareness of people on Solid waste management practices at domestic level.

Acknowledgement:

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Figures:

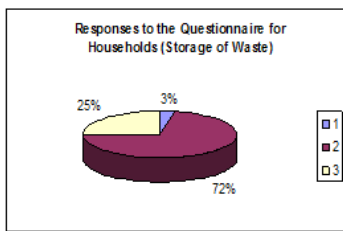


Figure 1. Storage of Waste

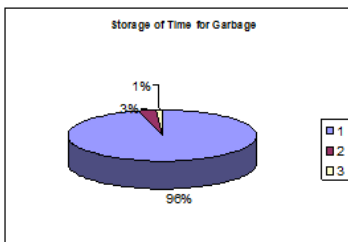


Figure 2. Time of Storage at Home

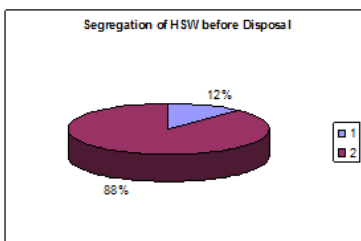


Figure 3. Segregation of Domestic Waste

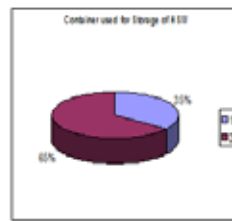


Figure 4. Container Used for Storage

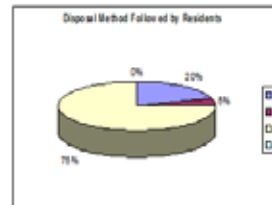


Figure 5. Disposal Method followed by residents



Figure 6. Opinion whether Waste Disposal is a Serious Problem or Not

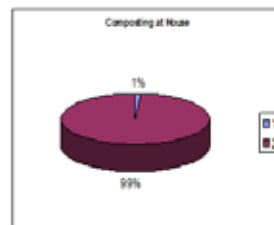


Figure 7. Composting at House

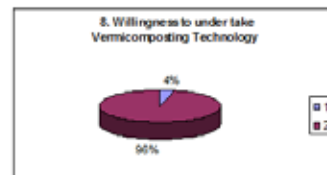


Figure 8. Willingness to under take Vermicomposting Technology

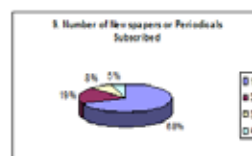


Figure 9. Number of Newspapers or Periodicals Subscribed

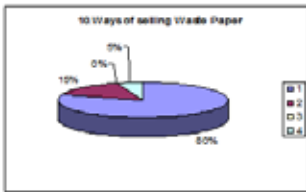


Figure 10. Ways of selling Waste Paper

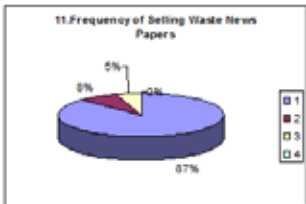


Figure 11. Frequency of Selling Waste News Papers

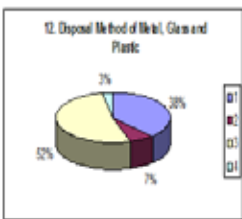


Figure 12. Disposal Method of Metal, Glass and Plastic

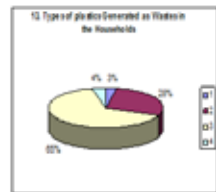


Figure 13. Types of plastics Generated as Wastes in the Households

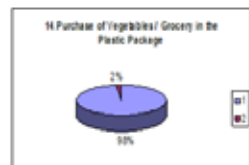


Figure 14. Purchase of Vegetables / Grocery in the Plastic Package

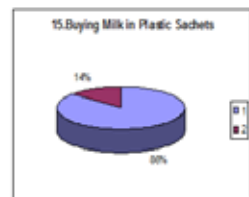


Figure 15. Buying Milk in Plastic Sachets

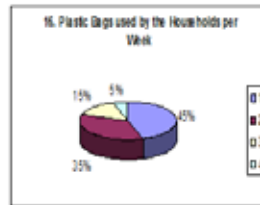


Figure 16. Plastic Bags used by the Households per Week

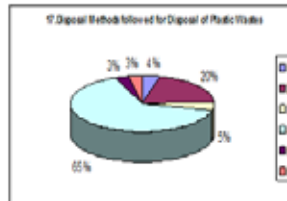


Figure 17. Disposal Methods followed for Disposal of Plastic Wastes



Figure 18. Reuse of Bottles or Carry Bags



Figure 19. Awareness on Air Pollution caused by burning of plastic wastes



Figure 21a). Opinion on the use of substitutes for plastic

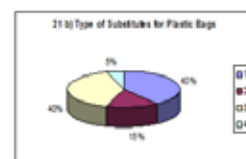


Figure 21b). b) Type of Substitutes for Plastic Bags



Figure 22. Disposal Method Followed by the Residents for Disposal of Hazardous Waste



Figure 26. Level of Satisfaction on MSW

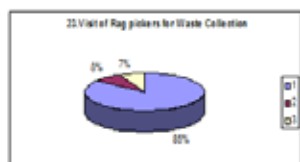


Figure 23. Visit of Rag pickers for Waste Collection

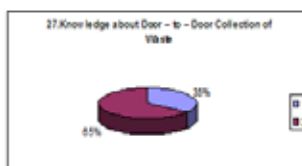


Figure 27. Knowledge about Door - to - Door Collection of Waste

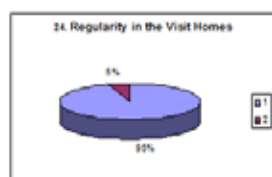


Figure 24. Frequency in the Homes Visiting

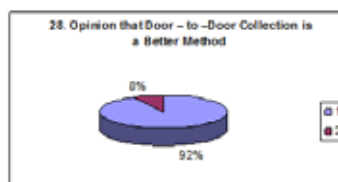


Figure 28. Opinion that Door - to -Door Collection is a Better Method



Figure 25. Rag Pickers make Payments for Waste

Abbreviations: GHMC- Greater Hyderabad Municipal Corporation, MSW- Municipal Solid Waste, SWM- Solid Waste Management

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