

KNOWLEDGE, ATTITUDE AND PRACTICES RELATED TO HOUSEHOLD WASTE MANAGEMENT: A REVIEW

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Abstract: *Abstract: In the current scenario waste management is the matter of concern when talk about sustainable environment and healthy community. Competent management of any waste is necessary. Households are one of the dynamic units of the community and so are the waste generated by them. Households produce substantial amount of waste in the community and it's really important to know that how this waste is managed by people. Management of waste at home is very much dependent on knowledge and attitude of the homemaker and this reflects in their practices related to management of their household waste. The current study was conducted with the aim to synthesise literature in the relevant field of study and to identify research gaps in the related field of household waste management.*

Index Terms: Household waste, Management, Knowledge, Attitude and Practices. -

I. INTRODUCTION

The waste has become a critical issue now a day. It is really sad to see the situation in major part of the India, though in some places the situation is slight better. The growth of population and generation of solid waste has unpredictable trend. The rate of growing population may be varying but the trend of urbanization has played a significant role in the growth of solid waste generation. In 2001 the solid waste generation was 27.8% in India which is expected to reach 41% by 2021. In the year 1995, in some of the Indian cities, the waste generation has been found was 0.64 kg in Kanpur, 0.52 kg in Lucknow, 0.4 kg in Varanasi, 0.59 kg in Ahmedabad and 0.44 kg in Mumbai. Presently it had been found that the annual waste generation by India is 42 million tons approximately. Solid waste generation varies from 200-600 kg/capita/day and collection efficiency for waste ranges from 50-90% (Rajput, Prasad & Chopra, 2009).

India was basically an agricultural country which is now developing into technological country. More than 377 million urban people live in 7,935 towns/cities. India is a vast country and has different geographic and climatic areas and seasons. Subject to the geographic and climatic areas the consumption pattern of the people also differs and on the basis of that the waste is generated.

It had been realized that no concrete steps had been taken for the analysis of regional and geographical waste generation patterns of those cities. The researchers in the related areas depend on the limited data available based on the study conducted by Central Pollution Control Board (CPCB), New Delhi; National Engineering and Environmental Research Institute (NEERI), Nagpur; Central Institute of Plastics Engineering and Technology (CIPET), Chennai; and Federation of Indian Chambers of Commerce and Industry (FICCI, 2009), New Delhi. (Joshi & Ahmed, 2016).

In 2016 Mr. Prakash Javadekar was environment minister at the time, according to him every year by India sixty two million waste has been generated in the country and this may increase up to 165 million by the year 2030. This shows that more land would be required for landfills to dump the waste. Therefore, if the existing scenario of waste management will not be taken care off then soon be it would bury us all in our own muck. (<https://thewire.in/104770/landfill-solid-waste-cpcb/>).

Consumerism has been on a rise, covering around more than 50% of total population since last decade. Due to rise in economic growth the consumption pattern of the people has transformed resulting into increase in waste. In the developed countries it had been found that waste generation is higher.

A report "What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050" by World Bank has mentioned in the report that by 2050 the global waste would be increased by seventy percent if necessary action will not be taken. According to the World Bank, sixteen percent population of high income countries are collectively accountable for generating more than one third waste of the world. Whereas, nearly quarter of the total solid waste is generated by The East Asia and Pacific region. It is predicted that Sub-Saharan Africa would generate waste three times more than the existing levels, while it would be double in South Asia. (<https://www.worldbank.org/.../global-waste-to-grow-by-70-percent-by-2050-unless-u...>)

According to Dhokhikah and Trihadiningrum several developing countries in Asia are facing difficulties in managing their solid waste and the causes are inadequate resources and fragile organizations. In order to have the sustainable solid waste management in these countries, as a social approach the change of people's behavior, reorganized waste management services in addition to modest use of technologies as a technological approach could be supportive. (Dhokhikah & Trihadiningrum, 2012).

As per report of the United Nations University there were notable amount of electronic waste i.e., vacuum cleaners, TV sets, washing machines, fridges and other electronic mechanisms disposed-off in 2014. It was revealed that in 2013 the maximum e-waste were produced by two countries, The United States and China (Niall, 2015)

The Basel convention (UNEP, 2004) has defined that any substance or matter which is disposed or intended to be disposed or needed to be disposed-off as per the "National laws" is considered as waste (<http://www.basel.int/Portals/4/Basel%20Convention/docs/text/BaselConventionText-e.pdf>)

The form of waste may differ but it basically depends on its origin. Solid waste can be classified into diverse categories depending on their source of origin: household waste also known as municipal waste, industrial waste as hazardous waste, biomedical waste as contagious waste, construction waste, agricultural waste and nuclear waste.

II. RATIONALE OF THE CURRENT STUDY

Rationale of the current study: There are numerous definitions of Household Waste and it could be defined as “any waste generated in any independent house, flat or area of habitat is identified as household waste and these wastes could be poisonous and hazardous too”. Day by day the volume of household waste is swelling and it is getting difficult to tackle it. There are several types of waste that is generated in homes like food waste, paper, glass, plastics, metal, garden waste etc. Waste generated in families also contain e-waste and hazardous waste. The categories of household waste are virtually similar though the quantity of waste generated by each household may differ. It's very essential to realize that what people contemplate of their household waste, for that reason it becomes necessary to understand the knowledge, attitude and the practices (KAP) of the households associated with household waste management. In this study an attempt has been made to study the knowledge, attitude and the practices of people from different areas as it influences the way they dispose-off their household waste.

III. PURPOSE OF THE STUDY

This study has been written with the purpose:

1. To synthesize literature in the relevant field of study
2. To identify research gaps in the related field

IV. RESEARCH METHODOLOGY

The current study aims to use secondary data collected by the existing literature of related research studies from published and unpublished sources such as books, journals, publications or reports etc. Several studies had been carried out to apprise the solid waste management in metro cities of India. The selected studies were compiled and analyzed in the field of knowledge, attitude and practices of the people, related to management of their household waste. The study was divided into two parts:

- A. Indian studies of knowledge, attitude and practices (KAP) related to household waste management.
- B. Global studies of knowledge, attitude and practices (KAP) related to household waste management.

V. RESULTS AND DISCUSSION

Segregation and disposal of household waste are significant part of the household waste management. Segregation of waste at source and appropriate disposal of waste is imperative but these are influenced by knowledge and attitude of the households. Good knowledge and positive attitude reflects in the practices of waste management.

The segregation of waste means separating of waste into dry and wet waste. Dry waste includes wood, metals and glass etc. Whereas, wet waste, refers to organic waste that is usually generated by eating establishments. This waste contains lot of moisture in it & for this reason becomes quite substantial in weight too. Waste can also be segregated as biodegradable or non-biodegradable items. (https://en.wikipedia.org/wiki/Waste_sorting)

Disposal of waste has been defined differently by diverse sources. Basically waste disposal is discarding of waste. In various dictionaries disposal has been defined differently. According to free dictionary waste disposal is removing and destroying or storing damaged, used or other unwanted domestic, agricultural or industrial products and substances. It also includes burning, burial at landfill sites or at sea, and recycling. (www.thefreedictionary.com/waste+disposal)

A. Indian Studies

Kumar and Pandit found that in India the attitude towards solid waste management was extremely incompetent. The quite old fashioned and disorganized system and technology for storage collection, processing, treatment and disposal were used. There was no formal organized system of segregation of biodegradable and non-biodegradable solid waste. There was no professional technique for recovery and recycling of waste and many times the highly precarious materials are also sorted by the scavengers and scrap dealers. (Kumar& Pandit'2013)

Kiran has discovered in their study from Kuttar and Manjanadi villages in Karnataka that most of the respondents had good knowledge concerning improper solid waste disposal and its consequences. Many of them had a positive attitude too towards solid waste disposal as they felt that if the waste is disposed improperly then it will have adverse effect on environment. It was good to find that 99% respondents had positive attitude towards household waste reduction. Although, household waste disposal practices were unsatisfactory as two third of the households used to dispose their household wastes just by throwing away outside the house. Approximately 91% households comprehended that they are responsible for their waste and have substantial role in managing solid waste. (Kiran.et al., 2015)

The study of Bangalore city was conflicting with the previous study, showing nearly 85 % of the households were not aware of the waste generation and their disposal. Usually due to busy schedule and lack of time, people just dispose the waste out of the house. Very few of them knew about proper waste disposal and this information they acquired through NGO's, Media, Municipality, friends and neighbors. Maximum numbers of people were not segregating their waste and they used to dispose it directly on the street. Few households were using their waste for mini composting as they were in the contact of NGO's which was working for solid waste management, whereas, 97% households were not practicing composting due to lack of knowledge and understanding of proper waste disposal and also the concept of “Waste to Wealth” (Kumar & Nandini, 2013). In Gandhinagar city it was found that some of the families use to keep dustbins in each room of their house. It was also revealed that in the zones that come under GUDA (Gandhinagar Urban Development Authority), two dustbins were given to each household but people used only one dustbin. Respondents explained that they segregate cooked or stale food from nonfood waste but they threw vegetable waste in paper or plastic. This behavior of the respondents showed their indifferent attitude towards segregation of waste hence, it requires lot of motivation. (Trivedi &Soni, 2015)

Sujaita has reported in her study from Marian town, situated in the district of Jorhat, Assam, that the people there are well aware of need for pertinent waste disposal, but they are not practicing it. They also know the ill effects of using polythene bags and its consequences on environment. It was found that the most common method adopted for household waste disposal was throwing away the waste. Usually the waste was thrown in the compound of their houses or on streets. People residing in low lying areas near river used to dump their household waste in the river due to lack of other facilities like community dustbins. It was interesting to note that few families had initiated the footsteps towards reduction of their household waste (Bhattacharjee Sujaita, 2018).

Chaithra Nayak's study covered the homemakers who have the key role in managing plastic as a household waste. The findings of the study disclosed that 71% of the homemakers possessed inadequate knowledge regarding management of plastic as a waste. It was found that homemakers were sufficiently knowledgeable about ill effects of plastic. Regarding habits of plastic waste management the findings indicated that two third of the homemakers had reasonable healthy habits whereas one fourth of them had poor habits. With this it can be concluded that homemakers did not had adequate knowledge related to plastic management as a household waste subsequently their practices were also not healthy (Nayak, 2015). A study at Kannur district of Kerala state has disclosed that nearly 94% respondents had an average attitude towards managing their household waste. More than three-fourth respondents were housewives. Majority of the respondents articulated their willingness for composting, segregation and recycling of their waste. More than two-third respondents were not satisfied with the work, government is doing in the area of waste management. All the respondent strongly believed that there should be some kind of training to generate cognizance regarding appropriate waste management as they were apprehensive towards inappropriate and illegal storage and disposal of waste (Kaithery NN et. al.2019).

B. Global Studies

It had been discovered from the study of Owerri in Imo state of Nigeria, that homemakers possessed good knowledge about waste management. They knew that proper waste disposal can improve their health and healthy practice of waste management is of great importance. Findings shows that many of them used to collect their waste in containers with covers but at the same time majority of them do not separate their waste before disposal. It was revealed that, though people were aware about the proper waste disposal and its impact, their attitude were also positive but the practices they followed for waste disposal was not healthy. Two-third of the respondents used to dispose of their waste in open whereas, rest used to burn the waste. The most significant findings was that, females were more knowledgeable than males, moreover females displayed better attitude towards managing their waste, than males (Adogu, et al., 2015).

The study in Pakistan reveals that higher income group of people was more aware than others owing to their education. It was also found that people had satisfactory knowledge about waste segregation but higher income group had more positive attitude towards it. It had been observed that income level affects the attitude of the people towards payment for waste collection, higher the income more positive attitude towards payment. The attitude towards the concept of reuse was also affected by income level, as people with higher income were not willing to reuse any item though, the middle and lower income group people had little knowledge of reuse and its benefit (Haider,et al.,2015).

A study at Kampala had discovered that two third of the respondents there, had knowledge about waste segregation and recycling. The respondents thought that segregation of household waste is waste of time and is not possible at home; it should be carried out at the collection points or at landfills, while few of them appreciated the idea of waste segregation at source. More than two-third of the respondents knew about recycling of waste through scrap dealers; also they were using the metal stove made by recycled materials which was cheaper in comparison to new stove. It was found that seventy percent respondents were practicing source separation of their household waste in order to get income out of those waste. Whereas, others indicated many reasons for not separating the waste in their household like: not able to afford separate bins for waste segregation, lack of space, no significance of segregation etc. (Banga, 2011)

In urbanAccra, Ghana, it was revealed that majority of the residents followed appropriate practices for managing their household waste. Moreover they were familiar with the consequences of the inappropriate waste disposal. It was comprehended that proper education and better-quality services by the authorities can support in improving the management of household waste in the town (Yoada et al. 2014).

The results of the study in Thailand, indicated the reasonable knowledge of residents concerning solid waste management whereas the attitude and practice for the same were found to be on the higher level. Hence, the suggestion for the local government was to encourage the awareness and knowledge of the residents in order to achieve effective solid waste management goal (Udomporn, 2015).

The study of kermanshahi women in Iran has revealed that more than three-fourth women had good knowledge and positive attitude towards reducing, recycling and reusing of municipal solid waste but less than one-fourth of them were practicing in reality. The reason reported behind poor practices is lack of facilities. Though the municipality of the area had plans for training related to solid waste management (SWM) but they are unable to encourage people for the training due to lack of quality and quantity (A. Almasi et al., 2019) Jatau's study done in Nigeria found that respondents between 15 – 30 years of age have positive attitudes towards waste management but this is because the Nigerian Government has emphasized the need to cultivate positive attitudes towards waste management to all age groups. The findings also emphasized that those with higher education like B.Ed. or so, have good knowledge of household waste management. Practices of waste management too were influenced by the level of knowledge, showing more positive practices for waste management. Although, the attitude of the respondents towards managing their waste was more positive with their growing age (Jatau, 2013)

A study at Abadan in Iran, disclosed that people there possess low level of knowledge regarding reduction of waste, source separation and recycling of waste, and waste composting. The results also indicated that very few participants used to practice on source separation and recycling where women were reasonably effective compare to men. Not having easy access to the recycling bins, lack of awareness towards recycling of waste, lack of proper municipality services and financial incentives were some of the reasons for absence of participation in source separation and recycling of waste. Also with the increasing age the attitude of the people were found to be more positive for source separation and recycling of waste (Babaei A.A.et al., 2015)

The respondents of Tatlonghari and Jamias's study shows that maximum number of the respondents had knowledge of various concepts linked to environment and waste management like pollution, global warming, 3R's, waste segregation etc. and media was

quite effective in understanding and recalling these concepts. Many of them showed positive attitude and also realized their role is very significant in solid waste management in the village. Besides, they expressed their willingness to participate in the campaign by acquiring and giving knowledge, time and efforts to waste management. When knowledge and practice were linked it was revealed that most of the respondents practice what they knew about waste management, terms like: segregation of waste or 3R's (Tatlonghari & Jamias, 2010)

VI. CONCLUSION:

According to the review of literature conducted, it is clear that knowledge, attitude and practices play vital role in management of waste from any household. It's crucial to change the perception of the people towards waste generated by them. Many studies have found that even though people are very much concern about their health and environment still, not able to practice the appropriate ways of managing waste. Knowledge is an important factor in understanding the need of proper waste management, moreover, it could affect the attitude of the person. It can be concluded that with the help of local government, educational institutions and NGO's some thoughtful training programs should be arranged for the community to create consciousness and seriousness towards efficient waste management. Furthermore, there has to be some motivational drive that would motivate people to come forward and take part in competent waste management for sustainable environment.

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