

A STUDY ON PERCEPTION AND APPROACH OF STUDENTS CONCERNING HOUSEHOLD WASTE MANAGEMENT IN DISTRICT JAMMU OF J&K STATE

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ABSTRACT

The issue of environmental conservation has attained a highest significance in this era globally but the practices of basic concepts of waste management are often ignored. We are born from the earth, we return to the earth and are sustained by the earth. People around the world are conscious of the impact of improper waste disposal practices, but the negative attitude of implementation gives rise to chaotic situations. In large cities, one of the main problem is improper management in the handling of household waste and it has been observed to be one of the major causes of pollution and outbreak of diseases in many parts of the world. In order to examine the perception, approach and practice of students of district Jammu towards household management, a well designed and validated questionnaire was used to collect the information from a sample of 400 students selected randomly from different higher education institutions district Jammu of J&K State. The data collected was analyzed using standard statistical techniques. The results of our study reveal that students understudy are aware about household waste management but lack in practice. In view of growing population in Jammu, daily waste generated is increasing, but authorities are unable to create facilities required for proper management of such waste. Garbage is littered on roads and foot paths but it is not properly managed. As a result, it may become a source of threat to human life. Students informed that shortage of storage bins, absence of waste segregation, inefficient collection and large stray dog population

has sternly damaged the environmental condition of the area. It is concluded from our study that there is an urgent need of giving mass awareness of solid waste and e-waste disposal practices to the people.

Keywords: Household waste, Environment, Waste Management, Perception, Approach, Jammu District.

I. INTRODUCTION

In recent years globally, growing concern with environmental issues and their impact on general awareness is one of the most noticeable phenomena. The environment in which we live is very important and it directly affects our lives. Waste is any discarded or unusable material which is discarded after primary use, or is worthless, defective and of no use e.g., municipal solid waste (household trash/ garbage/ refuse), hazardous waste, wastewater (such as sewage), surface runoff, radioactive waste and others. The Municipal solid waste (MSW) includes household waste, commercial waste, and demolition waste. Household waste, universally known as trash, garbage, rubbish or refuse is a waste consisting of everyday items that are discarded by the public e.g., food waste, plastic waste etc. The Commercial waste consists of waste from premises used mainly for the purposes of a trade or business or for the purpose of sport, recreation, education or entertainment, but excluding household, agricultural or industrial waste. Demolition waste is waste of debris from demolition/destruction of buildings, roads, bridges, or other structures. There is the potential to recycle many elements of demolition waste. It is noticed that the practices of basic concepts waste disposal are often neglected. In view of growing population, daily waste generated is rising, but authorities are unable to create facilities required for proper management of such waste. It is observed that garbage is littered on roads and foot paths but it is not properly managed. As a result, it may become a source of threat to human life living on earth. The proper disposal of Waste entails segregation at source, efficient carriage and scientific disposal in landfills or incinerators. None of this is being done in our state, shockingly. Even, the J&KPCB has been rendered as mere a toothless body. A peculiar situation has arisen in J&K state when the concerned authorities are not creating required infrastructure for scientific disposal of daily waste generated as per MSW rules 2016, despite being reprimanded and made accountable by High Court and the Supreme Court of India. Environmental problem is a global concern and there is a fundamental link between all natural elements and if a man abuses or exhausts one element, the natural world as a whole will suffer. Recently, Bilal et al (2016) discussed attitude of students towards environmental awareness and protection in Kashmir valley and Samira et al (2017) discussed the students awareness and towards household waste management. Around the world; efforts are being made to make people aware about environmental protection. One of the main causes of environmental degradation is improper management in the disposal of solid waste and it is observed as a major cause of pollution and outbreak of diseases in many parts of the world. There is no permanent solution for environmental problems but we can reduce and control waste generation by proper awareness and practice. The proportion of

different constituents of waste varies from season to season and place to place, depending on the lifestyle, food habits, standards of living, the extent of industrial and commercial activities in the area, etc (Katju, 2006). Solid wastes comprise all the wastes arising from human and animal activities that are normally solid, discarded as useless or unwanted. The solid waste generation sources are mainly residential, commercial slaughterhouses, institutions, organization like hospitals, hotels and restaurants, small scale industries, construction and demolition waste (debris) etc. Improper transport and disposal of solid wastes pollutes all the vital components of the living environment (i.e., air, land and water) at local and global levels. The state of Jammu and Kashmir faces major environmental challenges associated with waste generation and inadequate waste collection, transport, treatment and disposal. Current systems in the state cannot cope with the volumes of waste generated by an increasing urban population and these impact the environment and public health. There has been a significant increase in solid waste generation throughout the state of Jammu and Kashmir especially in summer capital Jammu city and winter capital Srinagar in the last few decades. This is largely due to rapid population growth and economic development. Poor collection and inadequate transportation are responsible for the accumulation of solid waste at nearly every nook and corner of the Jammu city or Srinagar city. Nowadays more and more people are taking interest in environmental education /issues, as they have started to experience the ill-effects of ecological issues. At present, we notice the environmental problems like disposal of e-waste (MF, 2009). Most of the Bulk consumers, viz., Hospitals, Banks, Educational institutions and other Govt. Offices in Jammu are not aware of the disposal of e-waste. Our household waste reusable or non-reusable accounts for major amount of solid rubbish and in case household waste are not properly disposed off, the consequences are dangerous (Yadav & Mishra, 2004). A study conducted by Ravinder *et al.* (2005) concluded that the Municipal Solid Waste,



dumping in low lying areas had an impact on ground water quality due to leaching. Leachate on the low lying area consequences could be very serious in terms of damage to natural resources (in water, soil). Our state is not a

rich state and studies like Bhide and Sundaresan (2004) showed that difference in collection and disposal practices, geographical situation of the area, status of the country, seasonal variation in waste production and characteristics including standard of living and economic conditions affect the waste characteristics. Sharholly *et al.* (2008) reviewed the Municipal Solid Waste Management in Major Indian cities and provided a comprehensive review of characteristics, generation, collection and transportation, disposal and treatment technologies of Municipal Solid Waste practiced in India. The study had been carried out to evaluate the current status and identify the major problems associated with the current disposal practices. There is an urgent need to streamline and sensitize young minds to the environmental problems and concerns. Hence, present study was an attempt to know how far the students of Jammu are aware and practicing proper waste management.

II. MATERIAL AND METHODS

In the present study a well designed validated questionnaire was used to collect the information from 400 students (200 boys and 200 girls) selected randomly from different higher educational institutions of district Jammu, J&K state. The questionnaire was designed to assess students' knowledge, attitude and practice on waste management at home. Purpose and method of the study undertaken was explained to the students to get their consent. The questionnaire besides basic information included ten questions related to awareness, five questions each regarding practice and attitude in waste management. The data collected from our study was tabulated and analyzed using standard statistical tools. The statistical package SPSS (version 20) was used for data analysis.

III. RESULTS AND DISCUSSION

The data presented in Table 1, reveals that statistically there is a non-significant association in awareness of household waste management issues and gender in all the statements ($p > 0.05$). The majority of the respondents both male as well as female never attended any awareness programme conducted by local authority or any institute regarding household waste management, were not aware of principle of waste management and do not know the complications of improper waste management, do not know how to dispose the e-waste. Further, majority of the respondents male as well as female accepted that local authorities have a role to play in the management of household waste, know the effective mechanism for household waste management, know the complications of improper waste management, were not aware of disposal of e-waste, agreed to have environmental topics in curriculum and were eager to know about environmental problems. Here, it is essential to note that we have examined students irrespective of their subject. It is reported that e-waste is the fastest growing segment of the solid wastes in India (0.01-1%), the rate is growing at an alarming pace and a high percentage of electronics are ending up in the waste stream releasing dangerous toxins into the environment. It is the need of

the time to review this serious situation. There is no difference in students' practice about household waste management based on type of family they belong. The studies show that the growing trend of negative attitude to social commitment was existing since long back families. In our study, we observe that there is a serious lack of awareness among students about e-wastes and its management. In this era of cybernetics, young generation is being influenced by cyberphilia as a result; worldwide e-wastes are generated uncontrolled and unchecked.

Table 1. Awareness of students understudy towards household waste management

S.No.	Question Asked	Male		Female		X ²	P-value
		Yes (%)	No (%)	Yes (%)	No (%)		
1.	.Did you ever attend any awareness programme conducted by local authority/ Institute regarding house hold waste management?	11 (5.5)	189 (94.5)	7 (3.5)	193 (96.5)	0.931	>0.05
2.	.Do you know the principle of waste minimization?	25 (12.5)	175 (87.5)	21 (10.5)	179 (89.5)	0.393	>0.05
3.	Do you think that local authorities have a role to play in the management of house hold waste ?	186 (93.0)	14 (7.0)	191 (95.5)	09 (4.5)	1.153	>0.05
4.	Do you know about segregation of waste?	37 (18.5)	163 (81.5)	42 (21.0)	138 (69.0)	1.344	>0.05
5.	Do you know the effective mechanism for house hold waste management?	83 (41.5)	117 (58.5)	96 (48.0)	104 (52.0)	1.709	>0.05
6.	Do you know the complications of improper waste management?	43 (21.5)	157 (78.5)	37 (18.5)	163 (81.5)	0.563	>0.05
7.	Are you aware of e-waste?	49 (24.5)	151 (75.5)	43 (21.5)	167 (83.5)	0.953	>0.05
8.	Do you know how to dispose the e-waste?	11 (5.5)	189 (94.5)	08 (4.0)	192 (96.0)	0.497	>0.05

9.	Do you have environmental topics in your curriculum?	127 (63.5)	73 (36.5)	131 (65.5)	69 (34.5)	0.175	>0.05
10.	Are you eager to know about environmental problems?	183 (91.5)	19 (9.5)	177 (88.5)	23 (11.5)	0.471	>0.05

P>0.05 means Non-significant at 5% level of significance

The data presented in Table 2, reveals that statistically there is a non-significant association in attitude of students towards minimizing household waste and gender in items (i), (ii), (iii), (iv) and (v) ($p>0.05$). Both groups male as well as female are committed to minimize the wastes, segregate household waste and to avoid throwing the wastes outside their premises. Regarding practice of proper waste management, students male as well as female do not have proper ideas and practice of waste segregation, conversion of waste to kitchen compost ($p>0.05$). A large amount of solid wastes are generated from homes and its major source is Household waste. The quantity of solid waste grows faster than population and our results obtained in this study are in agreement with the earlier studies (Vinod & Venugopal, 2010). Solid waste disposal has been identified as a major cause of pollution and environmental threat globally and very specially to Kashmir valley, globally known as Paradise on earth. In spite of the higher literacy rate and well developed educational systems and status in the valley, there is lack of practicing proper waste management among people of the valley, whether young or old. The findings of our study have made it clear that students are well aware of the importance of waste management. But they are lacking in the practice of proper waste management. This study findings support the studies conducted by Ifegbesan (2008). Another significant finding of our study is that 93% (male) and 87.5% (female) participants responded that they are seeing garbage on roadside while coming to College from their residence, which proves the filthiest condition of the roads and the severity of improper waste management in the district.

Table 2. Attitude of study population towards minimizing the household waste

S.No.	Question Asked	Male		Female		X ²	P-value
		Yes (%)	No (%)	Yes (%)	No (%)		
1.	Are you committed to minimize the waste?	163 (81.5)	37 (18.5)	171 (85.5)	29 (14.5)	1.161	>0.05
2.	Do you segregate house hold wastes?	109 (54.5)	91 (45.5)	96 (48.0)	104 (52.0)	1.691	>0.05
3.	Do you use kitchen waste as compost?	17 (8.5)	183 (91.5)	14 (7.0)	186 (93.0)	0.315	>0.05
4.	Do you throw your household waste outside your home?	77 (38.5)	123 (58.5)	89 (45.5)	111 (54.5)	1.483	>0.05
5.	Do you see garbage on roadside while coming to college/University?	147 (73.5)	53 (26.5)	152 (76.0)	48 (24.0)	0.331	>0.05

P>0.05 means Non-significant at 5% level of significance

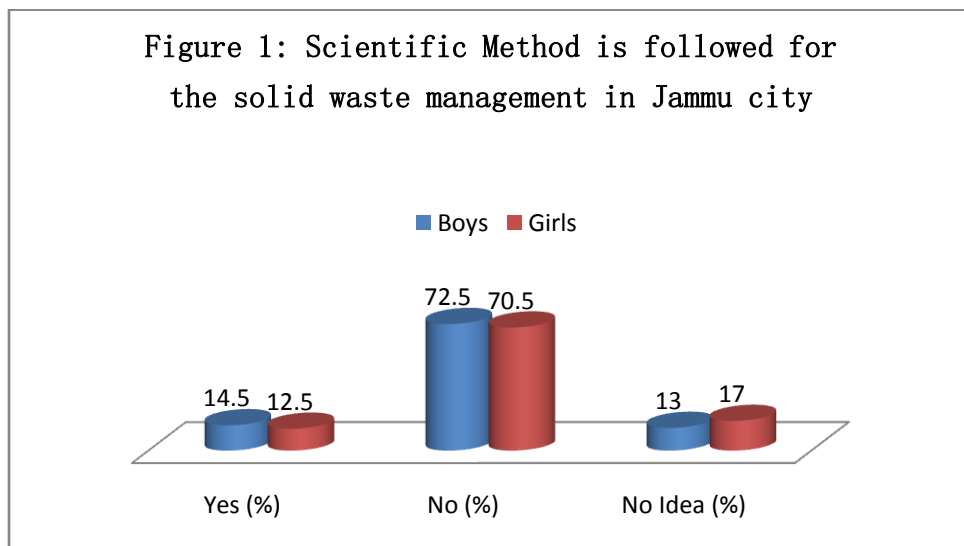
The data presented in Table 3, reveals that statistically there is a non-significant association in attitude of students towards practice regarding minimizing household waste and gender in all statements ($p>0.05$). It is observed that a large amount of solid wastes are generated from homes in Jammu. Household waste is a major source of solid waste in the state of J&K. >The study showed that the quantity of solid waste grows faster than population (Vinod & Venugopal, 2010). We found from our study that there are serious drawbacks in the practicing of proper waste management among students of Jammu irrespective of gender. It is essential that everyone understand that he/she has to play an important role in minimizing household waste.

Table 3. Attitude of students towards practice of minimizing household waste

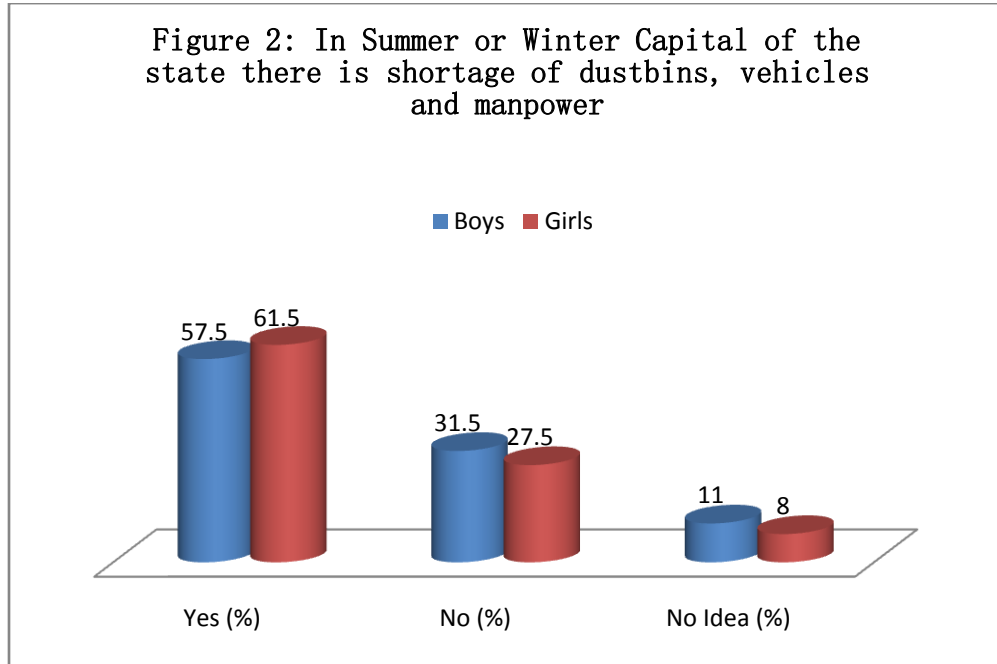
S.No.	Question Asked	Male		Female		X ²	P-value
		Yes (%)	No (%)	Yes (%)	No (%)		
1.	Improper waste disposal is a threat to environment.	191 (95.5)	09 (4.5)	194 (97.0)	06 (3.0)	0.623	>0.05
2.	Household waste management is the sole responsibility of my parents.	132 (66.0)	68 (34.0)	147 (73.5)	53 (26.5)	2.667	>0.05
3.	Household waste disposal is the sole responsibility of the local authorities.	181 (90.5)	19 (9.5)	169 (84.5)	31 (15.5)	3.291	>0.05
4.	I am also responsible for the generation of house hold waste.	179 (89.5)	21 (10.5)	167 (83.5)	33 (16.5)	3.081	>0.05
5.	I also have a role to minimize the house hold waste.	181 (90.5)	19 (9.5)	184 (92.0)	16 (8.0)	0.282	>0.05

P>0.05 means Non-significant at 5% level of significance

The data presented in Figure 1, shows that majority of the respondents (Boys=72.5% and Girls=70.5%) believe scientific procedure is not followed for management of solid wastes in Jammu city.



The data presented in Figure 2, reveals that majority of the respondents (Boys=57.5% and Girls=61.5%) told that there is a shortage of dustbins, vehicles and manpower in summer and winter capital of the state. It clearly means, we are not using scientific and latest methods for management of solid wastes. The pictures given below shows in both cities old method of waste collection is followed.



The picture 1-2 shown above reveal that the status of Solid Waste Management is very poor in the state in general and Capital cities i.e., Srinagar and Jammu in particular.



Picture 3: Household waste, e-waste around roads and water bodies Tawi and Dal Lake. J&K

The picture 3 shown above reveal that the people of the Capital cities i.e., Srinagar and Jammu of the state are not aware about the ill effects of throwing household wastes and e-wastes around water bodies and on roads. It is well known that these types of waste usually surrounded by dogs etc have the potential to cause disease as when people consume polluted water, they get sick. Contaminated water causes viral diseases like cholera, dysentery and typhoid fever. It can cause skin conditions like scabies and Trachoma (a preventable eye disease in which the eyelashes eventually invert, leading to blindness). The significance of Proper Waste Disposal is that certain types of wastes like e-wastes can be hazardous and can contaminate the environment if not handled properly.

IV. CONCLUSION

The Swatch Bharat Mission (Urban) has a particular mention about preparation of Detailed Project Reports (DPRs) for management of solid waste across cities and towns of India. According to a survey done in the recent past, except Srinagar Municipal Corporation (SMC) and Jammu Municipal Corporation (JMC) most of the local bodies that include Municipal Councils and Municipal Committees/Town Area Committees (TAC) have not prepared proper DPR's as per Solid Waste Management Rules 2016. This has added to the problems of managing solid waste in towns across J&K state. In almost all the towns of J&K state, local municipalities have failed to scientifically treat the waste and the waste is either thrown into water-bodies, hill-sides or forest areas. The NGT report few years back had given 31st rank to J&K State with regard to Solid Waste Management policy. The states Goa, Kerala and Tamil Nadu have been ranked as 1, 2 and 3 respectively keeping in view the scientific management of solid waste. This study conducted in Jammu district of J&K state tries to look at the crucial aspect

of household waste management awareness among students. In conclusion giving social duty awareness along with waste management awareness may improve the practice of waste management. Awareness program of waste management is greatly needed for students as well as parents which can be given in the schools/colleges during parent teacher meetings or in community based programs. Whether students are male or female, there is no significant difference in their awareness, practice and attitude ($p>0.05$). The findings of the present study have made it abundantly clear that household waste management is a serious environmental problem, and students are aware of it. It is clear that throwing household waste outside home is a selfish attitude and an environmental abuse which need to be corrected. With combined efforts from the part of government, educational institutions and NGOs, proper guidance can be given in this neglected area of waste management. The present study throws a light on the existing knowledge, attitude and practice of the students in District Jammu. All this means that we have to look at our household waste management holistically and draw up an integrated plan for sustainable waste management of our city, popularly known as city of temples. The most important returns of household waste management are; improvement in health, promotion of hygiene, contribution to conservation of resources. It may require the foundation of a board-based interagency committee included authorities to establish a mechanism for consensus on waste management issue. The students of Jammu understudy expressed their annoyance over non seriousness of Housing Urban Dev & Local bodies Department in creating infrastructural facilities for solid waste management in Jammu, J&K state as per 2016 MSW rules, despite regular monitoring by the state High Court and the Supreme Court of India. This study indicates that there is an urgent need to train the people in general regarding the same. The world belongs to all of us. We must co-operate and work together for a better world, a better future, and a better environment. Chief Seattle, the great American ecologist has once said, "We do not inherit the earth from our parents; we borrow it from our children."

RECOMMENDATIONS:

It has been noticed that there has been lack of civic sense among the people of Jammu and also lack of determination on the part of Municipality and Government in respect of Solid Waste Management. Therefore, there is a vital need to organize mass awareness campaign in this regard.

- (a) Municipality of Jammu district should pay due attention towards Solid Waste Management in the area, otherwise problem is likely to become acute with the present rate of increase in Solid Waste generation. The number of storage bins should be increased to avoid over-spilling and dumping in open areas.
- (b) The Solid Waste from hospitals in Jammu should be disposed off separately, preferably by incineration and specialized land-filling. The Government workers or people should not be allowed to burn the Solid Waste

because of health hazards arising from burning.

- (c) Municipality should provide covered vehicles for transport of waste. Municipality should start sanitary land-filling system and install compost treatment plant for the Management of Solid Waste.
- (d) Rag pickers in Jammu should not be permitted to throw any leftovers on the roads rather they should be directed to put left over in dustbins. Further, services of rag pickers should be utilized by Municipality for collection of household waste from door to door and segregation of waste into recyclable and non-recyclable waste.
- (e) Municipal employees should keep a check on the public for proper disposal of household waste into the dustbins or collection site and one who offends the laws should be given penalty.
- (f) Interactive participation of NGO's and local residents with the waste management body should be encouraged to create mass awareness.
- (g) Manpower development should be in proportion to the waste generation in respective wards. Segregation into two separate bins for biodegradable and non-biodegradable Solid Waste should be promoted through mass awareness programmes.
- (h) It is observed that around twelve nullahas carrying bad and stinky effluents of Jammu city are draining directly in sacred Tawi river from Nagrota to Bhagwati Nagar. A sewerage treatment plant is required immediately to be built up to pass first charge of these nullahs through the treatment plant.
- (i) The students understudy makes an appeal to Governor of the state for his intervention in this serious issue affecting general health of the people.

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