Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2320-7051.2996

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. **5 (3):** 553-558 (2017)

Research Article

International Journal of Pure & Applied Bioscience

OPEN ACCESS

Waste Disposal Methods followed by the Residents of Dharwad City

Yogita V. Masur[1*] and Renuka S. Salunke[2]

[1*]Ph.D Scholar, Department of Family Resource Management, College of Rural Home Science, University of Agricultural Sciences Dharwad 580005, Karnataka

[2]Professor and Sr.Scientist, AICRP-FRM,MARS, University of Agricultural Sciences Dharwad-580005, Karnataka

*Corresponding Author E-mail: yogitavm7@gmail.com

Received: 19.05.2017 | Revised: 30.05.2017 | Accepted: 2.06.2017

ABSTRACT

Solid waste management is one of the important and crucial issue of urban management. It is an issue of day to day life and involves each and every citizen in the whole process which covers all functional elements from waste generation to final disposal. In management of solid waste, disposal practices of residents play an important role to maintain the hygiene and update the cleanliness of an environment. Hence, the present study was taken to collect the primary data on waste disposal practices by residents of various types of dwellings. All the zones from Dharwad city were selected under the study. Based on purposive sampling technique four types of dwelling namely independent, apartment, urban slum and quarters were considered. the total sample for the study comprised 390 households. Structured interview schedule was used to collect the data from the selected households. Irrespective of types of dwellings most of the respondents (35.13%) belonged to 36-44 yrs and nearly 51 per cent of the respondents belonged to upper caste., more than 85 per cent of the respondents were married,majority of the respondents themselves (24.10%) disposed the waste into community bins.Irrespective of types of dwellings majority of respondents disposed the wet waste followed by reused the plastic waste and recycled/sold the paper waste. The waste is segregated into wet and dry at household level and every household should follow 3 R's (recycle, reuse, refuse) then the quantity of waste generation could be reduced to larger extent and which will have positive effect on solid waste management.

Key words: *Solid Waste Management, Waste Disposal, Types of Dwellings.*

INTRODUCTION

Solid waste management is one of the important and crucial issue of urban management. It is an issue of day to day life and involves each and every citizen in the whole process which covers all functional elements from waste generation to final disposal. Quantity of municipal solid waste is ever increasing due to increase in population, urbanization, developmental activities, changes in life style, food habits and socio-economic activities but collection efficiency and infrastructure is not increasing proportionally[3].

Cite this article: Masur, Y.V. and Salunke, R.S., Waste Disposal Methods followed by the Residents of Dharwad City, *Int. J. Pure App. Biosci.* **5(3):** 553-558 (2017). doi: http://dx.doi.org/10.18782/2320-7051.2996

Solid waste is the most visible environmental problem among many in urban areas. Increased solid waste generation creates more environmental problems as many cities are not able to manage it due to institutional, regulatory, financial, technical, and public participation[5]. In management of solid waste, disposal practices of residents plays an important role to maintain the hygiene and update the cleanliness of an environment. Hence, the present study was taken to collect the primary data on waste disposal practices by residents of various types of dwellings.

MATERIAL AND METHODS

All the zones from Dharwad city were selected under the study. Based on purposive sampling technique four types of dwelling namely independent, apartment, urban slum and quarters were considered. Under each dwelling 60, 210, 60, 60 households respectively were selected randomly. Thus the total sample for the study comprised 390 households. Structured interview schedule was used to collect the data from the selected households. Data were computed and represented in frequency and percentages.

RESULTS AND DISCUSSION

The socio-demographic characteristics of selected respondents is depicted in **table 1.** It can be observed that majority of the respondents (43.33%) belonged to more than 45 yrs among the selected respondents of apartment followed by 36-44 yrs. Whereas, similar trend was observed in independent houses. While majority (43.33%) of respondents belonged 36-44 yrs. More than 50 per cent of the respondents belonged to (<35 yrs) in slum. Irrespective of types of dwellings most of the respondents (35.13%) belonged to 36-44 yrs. With respect to caste 71.67 per cent of respondents belonged to upper caste in apartment followed by dalits (25%). Whereas, Similar trend was followed in independent houses. Equal per cent of the respondents belonged to dalits and OBC i.e 21 per cent in quarters. In slum 70 per cent of respondents belonged to dalits. Irrespective of types of dwellings nearly 51 per cent of the respondents belonged to upper caste. Regarding education majority of the respondents (46.67%) had completed their graduation in apartment followed by high school (18.33%). Similarly, in independent houses maximum number of respondents (33.33%) had completed their graduation followed by high school (22. 38%).In quarters 25 per cent of the respondents had completed their post-graduation while in slum area majority respondents were illiterate. Irrespective of types of dwellings more than 85 per cent of the respondents were married. About 37 per cent of the respondents belonged to high income group(>Rs.4,44,048) in apartment followed by 33.33 per cent of respondents belonged to medium income group (Rs. 2,26,655 to 4,44,048). In independent houses nearly 39 per cent of the respondents belonged to low income group followed by medium income group. Where as in quarters majority of the respondents belonged to high income group (38.33%). Cent per cent of the respondents belonged to low income group in slum. Irrespective of types of dwellings about 45 per cent of the respondents belonged to low income group. These results are in line with findings of study conducted by Madhu[4] i.e. 35.9 percent of the homemakers were in the age group of 26- 35 years while 26 percent of them were in the age group of 36-45 years and around twenty percent of the respondents belongs to 16-25 years of age group. Kumar and Nandini[2] revealed that 38 percent of the respondents belonged to hindu category ,34 percent of the respondents belonged to OBC category and 28 percent of the respondents belonged to SC/ST category.

It can be observed from the **table 2.** In apartment the waste was disposed by giving to door to door collector by themselves (33.33%), followed by in 28 per cent of the houses the waste was disposed into community bins by servants. Similarly, in independent houses the respondents themselves (19.05) were disposed the waste into community bins followed by in 14 per cent of the houses waste was disposed by servants. In quarters 63.33 per cent of the respondents themselves were disposed the waste into community bins. With respect to slum about 28 per cent of respondents themselves disposed the waste on open site near houses. It can be observed from the table that irrespective to types of dwellings majority of the respondents themselves (24.10%) disposed the waste into community bins. The findings were on par with the results of Kiran *et al*[1]., that majority of the respondents

disposed the waste into community bins followed by giving to door to door collector.

Disposal methods followed for wet and dry waste by the selected respondents depicted in **table 3.** Majority of the respondents (90%) from apartment disposed the wet waste without any segregation. Whereas (93.33%) of respondents reused plastic waste followed by about 87 per cent of the respondents recycled/sold the paper waste and 65 per cent of respondents were reused the glass waste. While the majority of the respondents from independent houses majority of them (90.48%) disposed the wet waste without any segregation. Regarding plastic waste, most of them reused the plastic waste (85.71%) followed by 92.38 per cent of the respondents recycled/sold the paper waste. More than 50 per cent of the respondents disposed the glass waste, metal/tin and other waste. With respect to practices followed by respondents from quarters 53.33 per cent of respondents disposed the wet waste whereas 63.33 per cent of respondents reused plastic waste. With regard to the practices followed by respondents from slum houses it was interesting to see that majority (66.67%) of them fed the wet waste to animals and Cent per cent of respondents reused the plastic and paper waste. Eighty per cent of them reused the glass waste. Thus, irrespective of types of dwellings majority of respondents disposed the wet waste followed by reused the plastic waste and recycled/sold the paper waste. The results are in conclusion with the observation made by Sonu and Veena[6] that above 60 per cent of the households simply throw away solid waste outside the house. About 40 percent of the households reduce, reuse and recycle waste materials.

Food habits of selected households in Dharwad is shown in **fig.1**. It can be observed from the fig, that in apartment 60 per cent of the households were vegetarians. Whereas, similar trend was found in independent houses. In quarters most of the respondents were non-vegetarian and similar trend was found in slum. Irrespective of types of dwellings majority of the respondents were non-vegetarian.

Table 1: Socio-demographic characteristics of selected respondents from different types of dwellings

N=390

Variables	Category	Types of dwelling								Grand Total (N=390)	
		Apartment (n=60)		Independent (n=210)		Quarters (n=60)		Slum Area(n=60)			
		F	%	F	%	F	%	F	%	F	%
Age (years)	<35 yrs	13	21.67	71	33.81	17	28.33	32	53.33	133	34.10
	36-44 yrs	21	35.00	66	31.43	26	43.33	24	40.00	137	35.13
	>45 yrs	26	43.33	73	34.76	17	28.33	4	6.67	120	30.77
Caste	Upper caste	43	71.67	131	62.38	18	30.00	7	11.67	199	51.03
	Dalits	15	25.00	60	28.57	21	35.00	42	70.00	138	35.38
	OBC	2	3.33	19	9.05	21	35.00	11	18.33	53	13.59
Education	Illiterate	0	0.00	9	4.29	5	8.33	21	35.00	35	8.97
	primary	7	11.67	23	10.95	11	18.33	19	31.67	60	15.38
	middle school	0	0.00	10	4.76	6	10.00	10	16.67	26	6.67
	high school	11	18.33	47	22.38	8	13.33	7	11.67	73	18.72
	Intermidiate	10	16.67	42	20.00	3	5.00	3	5.00	58	14.87
	graduation	28	46.67	70	33.33	12	20.00	0	0.00	110	28.21
	post graduation	4	6.67	9	4.29	15	25.00	0	0.00	28	7.18
Marital status	married	54	90.00	191	90.95	54	90.00	51	85.00	350	89.74
	un-married	1	1.67	1	0.48	2	3.33	0	0.00	4	1.03
	divorce/widow	5	8.33	18	8.57	4	6.67	9	15.00	36	9.23
Income (yearly)	Low (<Rs.2,26,654)	18	30.00	82	39.05	15	25.00	60	100.00	175	44.87
	Medium (Rs 2,26,655-4,44,047)	20	33.33	69	32.86	22	36.67	0	0.00	111	28.46
	High (>Rs4,44,048)	22	36.67	59	28.10	23	38.33	0	0.00	104	26.67

Table 2: Place and person responsible for waste disposal by selected respondents

N=390

Place of disposal	Apartment houses (n=60)					Independent houses (n=210)					Quarters houses (n=60)							Slum houses (n=60)			Total (N=390)				
	Person responsible for Disposal					Person responsible for Disposal					Person responsible for Disposal							Person responsible for Disposal			Person responsible for Disposal				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Community bins	13 (21.67)	0 (0.00)	0 (0.00)	17 (28.33)	0 (0.00)	40 (19.05)	8 (3.81)	0 (0.00)	20 (9.52)	15 (7.14)	38 (63.33)	2 (3.33)	0 (0.00)	18 (30.00)	0 (0.00)	3 (5.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	94 (24.10)	10 (2.56)	0 (0.00)	4 (1.03)	5 (1.28)
Open site near houses	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	19 (9.05)	2 (0.95)	0 (0.00)	30 (14.29)	25 (11.90)	0 (0.00)	0 (0.00)	0 (0.00)	2 (3.33)	0 (0.00)	17 (28.33)	5 (8.33)	0 (0.00)	0 (0.00)	10 (16.67)	36 (9.23)	7 (1.79)	0 (0.00)	32 (8.21)	35 (8.97)
giving door-to door collector	20 (33.33)	2 (3.33)	0 (0.00)	8 (13.33)	0 (0.00)	7 (3.33)	0 (0.00)	0 (0.00)	30 (14.29)	6 (2.86)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	33 (8.46)	2 (0.51)	0 (0.00)	38 (9.74)	0 (0.00)
Throwing roadside/gutter	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	8 (3.81)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	10 (16.67)	5 (8.33)	0 (0.00)	0 (0.00)	10 (16.67)	10 (2.56)	5 (1.28)	0 (0.00)	8 (2.05)	10 (2.56)

Note : Figures in parenthesis indicate perecentage

Note : 1-Self ,2- Husband/ father/ father-in-law,3- Mother/ mother-in-law,4- Maid/ servant,5-Children

Table 3: Disposal methods followed for wet and dry waste by the selected respondents

N=390

Types of waste	Types of dwelling																				Total (N=390)				
	Apartment houses (n=60)					Independent houses (n=210)					Quarters houses (n=60)					Slum houses (n=60)									
	Method used for disposal					Method used for disposal					Method used for disposal					Method used for disposal					Method used for disposal				
	R1	R2	R3	F	D	R1	R2	R3	F	D	R1	R2	R3	F	D	R1	R2	R3	F	D	R1	R2	R3	F	D
Wet waste																									
Cut vegetables, spoiled food, left out food, fruits waste etc)	0 (0.00)	0 (0.00)	0 (0.00)	6 (10.00)	54 (90.00)	0 (0.00)	0 (0.00)	0 (0.00)	20 (9.54)	190 (90.48)	0 (0.00)	0 (0.00)	0 (0.00)	28 (46.67)	32 (53.33)	0 (0.00)	0 (0.00)	0 (0.00)	40 (66.67)	20 (33.33)	0 (0.00)	0 (0.00)	0 (0.00)	94 (24.10)	296 (75.90)
Dry waste																									
Plastic (bags/pouches/containers/covers)	0 (0.00)	56 (93.33)	0 (0.00)	0 (0.00)	4 (6.67)	0 (0.00)	180 (85.71)	10 (4.76)	0 (0.00)	20 (9.54)	6 (10.00)	41 (68.33)	0 (0.00)	0 (0.00)	13 (21.67)	0 (0.00)	60 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	6 (1.54)	337 (86.41)	10 (2.56)	0 (0.00)	37 (9.49)
Paper (newspaper/ cardboard/books/magzines, invitation etc)	52 (86.67)	6 (10.00)	0 (0.00)	0 (0.00)	2 (3.33)	194 (92.38)	10 (4.76)	0 (0.00)	0 (0.00)	6 (2.86)	46(76.67)	14 (23.33)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	60 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	292 (74.87)	90 (23.07)	0 (0.00)	0 (0.00)	8 (2.05)
Glass (bottles, containers/broken glass etc)	5 (8.34)	39 (65.00)	0 (0.00)	0 (0.00)	16 (26.67)	7 (3.33)	90 (42.86)	0 (0.00)	0 (0.00)	113 (53.81)	0(0.00)	43 (71.67)	0 (0.00)	0 (0.00)	17 (28.33)	12 (20.00)	48 (80.00)	0 (0.00)	0 (0.00)	0 (0.00)	24 (6.15)	220 (56.42)	0 (0.00)	0 (0.00)	146 (37.43)
metal/tin (containers /folis/beverages tinetc)	5 (8.34)	0 (0.00)	0 (0.00)	0 (0.00)	55 (91.66)	60 (28.57)	40 (19.04)	0 (0.00)	0 (0.00)	110 (52.39)	10(16.67)	20 (33.33)	0 (0.00)	0 (0.00)	30 (50.00)	28 (46.67)	0 (0.00)	0 (0.00)	0 (0.00)	32 (53.33)	103 (26.42)	60 (15.38)	0 (0.00)	0 (0.00)	227 (58.20)
Others (leather/textile/crockery/garden trimmings/dust particles, demolition waste	23 (38.33)	0 (0.00)	0 (0.00)	0 (0.00)	37 (61.67)	20 (9.52)	60 (28.57)	0 (0.00)	0 (0.00)	130 (61.91)	13(21.67)	0 (0.00)	0 (0.00)	0 (0.00)	47 (78.33)	0 (0.00)	34 (56.67)	0 (0.00)	0 (0.00)	26 (43.33)	56 (14.36)	94 (24.10)	0 (0.00)	0 (0.00)	240 (61.54)

Note : Figures in parenthesis indicate perecentage
Note :R1=recycle/sale, R2= reuse, R3= refuse, F= feeding to animals, D=dispose on open site

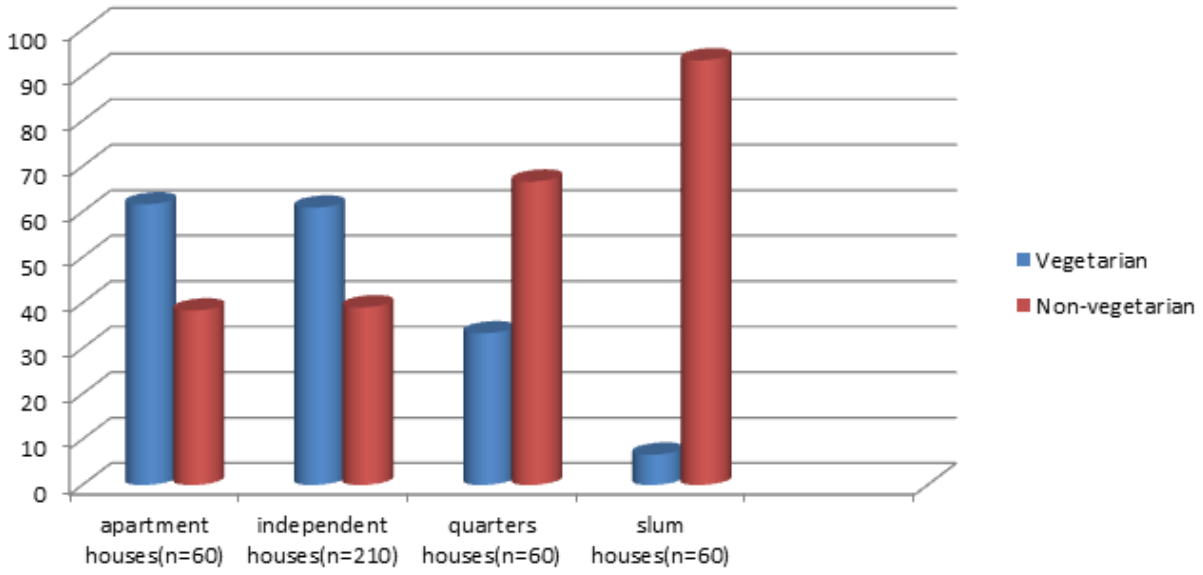

Fig. 1: Food habits of residents at Dharwad city

CONCLUSION

It can be concluded that the people are in practice of disposing the waste in open site and throwing the waste at roadside. As the proper disposal practices plays an important role in solid waste management. The waste is segregated into wet and dry at household level and every household should follow 3 R's (recycle, reuse, refuse) then the quantity of waste generation could be reduced to larger extent and which will have positive effect on solid waste management.

REFERENCES

1. Kiran, K.G., Kini, S., Ravi, K., Santosh, N.P. and Udaya Kiran, KAP study of solid waste disposal of households in kuttar, NITTE, **5(3):** 29-35 (2015).
2. Kumar, M. and Nandini, N., Community attitude,perception and willingness towards solid waste management in Bangalore city, Karnataka, IJES. **4(1):** 87-95 (2013).
3. Lakshmi, G., Municipal Solid Waste Disposal:A case study in Guwahati city. Journal of Humanities and Social Science, **9(3):** 55-60 (2013).
4. Madhu, Solid Waste Management in Mangalore city. *Journal of Env. Sci*., pp1-30 (2012).
5. Sadia Afroz Mukti, Solid waste management in Dhaka city: Problems and prospects, *International journal of Innovative Research & Development*, **2(11):** 33-37 (2013).
6. Sonu Karwarsra,Veena Sangwan, A study on mode of garbage disposal by urban families, JHE, **18(3):** 203-205 (2005).