

Study The Kitchen Waste Management Practices In Rural Household.

Abstract

The problem of waste is a universal one as waste exists in every society. India is now the world's 3rd largest garbage generator. Now a day waste is becoming more complex as a variety of materials are discarded as waste together. So the research was conducted to study the wastes management practices in the rural household of Koraput district, Odisha, India, with a sample of 110 female respondents. Investigations were carried out on SWM practices. The respondents were selected using multistage purposive random and proportionate sampling method. A pre-tested interview schedule cum observation sheet was used to collect the data. The findings of the study clearly revealed that biodegradable and non-biodegradable waste (3.63%) separation was not ready in practice. The main reason for not separating was lack of awareness (13.6%) followed by lack of discipline in home (4.54%) and laziness (3.63%). Improper waste disposal methods such as dumping in open(80.9%) and gutter (60.9%), burning (90.0%) were practised more readily in comparison to environmentally friendly methods like composting (4.5%) for kitchen waste.

Introduction

Since the beginning, human kind has been generating waste. Any unwanted or unusable materials or any substance which is discarded after primary use or it is worthless, defective and of no use is known as waste. The problem of waste is a universal one as waste exists in every society. Business for Social Responsibility, **BSR (2010)** carried out a study on "The New Frontier in Sustainability" concluded most businesses define waste as "anything that does not create value". Increasing population level, urbanization, consumerism, industrialization and increasing living standards have enhanced the waste generation in developing countries. Waste management problems only appear more serious in developing economies because of the poor management framework. India is now the world's 3rd largest garbage generator. Around 45 million tonnes or 3 million trucks of untreated garbage are disposed in an unhygienic manner every day (**India spend**). According to Union Ministry of

32 State for Environment, Forest and Climate Change, 62 million tonnes of waste is generated
33 annually in the country at present. Out of these waste, 5.6 million tonnes is plastic waste, 0.17
34 million tonnes is biomedical waste, hazardous waste generation is 7.90 million tonnes per
35 annum and 15 lakh tonnes is e-waste. Further added that only about 75-80 percent of the
36 municipal waste gets collected and only 22-28 percent of this waste is processed and treated
37 (**down to earth**). According to forest and environment ministry in Odisha 43 million tonnes
38 waste was generated in 2014-15.

39 Now a day waste is becoming more complex as a variety of materials is discarded as
40 waste together. It is very important to understand the wastes, their nature, problems
41 associated with them, and how to dispose them off hygienically. **Indhira et al. (2015)**
42 conducted a study on Awareness and attitudes of people perception towards to household
43 solid waste disposal: Kumbakonam Town, Tamilnadu, India concluded that they were
44 disposing three and six kilograms of biodegradable and non-biodegradable waste /week. The
45 type of household solid waste disposal items were food items, vegetables, dry leaves, plastics,
46 garden waste, batteries, electronic goods, clothes, rubbers and glasses. Waste can be divided
47 into 3 types, i.e. municipal waste, commercial and industrial waste, construction or
48 demolition waste. Kitchen waste forms a significant constituent of municipal waste. It can be
49 biodegradable like food waste, green waste, vegetable peels, paper or non-biodegradable like
50 glass, bottles, cans, metals, certain plastics etc. The biodegradable waste decomposes easily
51 while the non-biodegradable contents can be of serious concern as they stay for long in the
52 environment and hard to decompose.

53 Present day kitchen wastes are collected in mixed scale and disposed in places, which are
54 environmentally very sensitive. A study on People's perception of household solid waste
55 management in Ojo local Government area in Nigeria revealed that most of the respondents
56 did not separate their waste; out of the 364 households, only 63 (17.3%) separated their waste
57 when storing it, while the remaining 301 (82.7%) did not do any kind of solid waste
58 separation, which is a reflection of what happens in most African cities by **Longe et al.**
59 **(2009)**. Disorganized and inappropriate kitchen waste disposal creates severe environmental
60 issues such as air pollution, water pollution, reduction of aesthetic value of the environment
61 etc. that have direct impact on the society and the country's development. So there is a need
62 to "Study The Kitchen Waste Management Practices In Rural Household" to understand the
63 extent of different management practices.

64

65 MATERIAL AND METHODS

66 A systematic methodology is an important step to a research because it directly
67 influences the validity of the research findings. The exploratory research design was adopted
68 to gain familiarities and to acquire a new insight into the existing aspects of various issues
69 related to kitchen waste management practices. Multi-stage purposive random and
70 proportionate sampling method was used to select the respondents for the study. The locale
71 for this present study was Similiguda and Nandapur block of Koraput district, in the state of
72 Odisha. Further, from a total of 37 Gram panchayats from the above two blocks, Khurji and
73 Subai Gram panchayat were selected purposively as the researcher could easily reach the
74 respondent. Two villages from each gram panchayat such as Muliaput, Khatalaput,
75 Dalaiguda, Luhaba were selected randomly out of which 110 female respondents were
76 selected proportionately. An interview schedule cum observation sheet was used to elicited
77 data from the respondents at their residence through direct interview cum observation
78 method. The data collection tools were pretested in 10 houses to check its practicability. The
79 data collected was further analysed using various statistical tools like frequency and
80 percentage.

81 RESULT AND DISCUSSION

82 The findings of the present study as well as relevant discussion have been presented under the
83 following head

84 **Table 1 : Profile of the respondents**

85 **n=110**

Variables	Categories	Frequency	Percentage
Age	young (<30)	43	39
	middle age (31-45)	43	39
	old (>45)	24	21.8
Education	Illiterate	41	37.2
	Primary school	35	31.8
	High school	22	20
	Intermediate and above	12	10.9
Type of family	Nuclear	87	79.0
	Joint	23	20.9

Occupation of respondent	Housewife	19	17.2
	Labourer	87	79
	Service	4	3.6
	Skilled worker	-	-
Total income of the family from per month(Rs.)	<10,000/-	33	30
	10,001/- to 15,000/-	55	50
	15,001/- to 20,000/-	22	20
Type of housing	Katcha	5	4.5
	Semi Pucca	83	75.4
	Pucca	22	20.0

86

87 The Table 1 revealed that 30.0 percent of the sample belonged to the age group below
88 30 years, 31 to 45 years each and remaining 21.8 percent were in the age group of above 45
89 years. According to the study 37.2 percent respondents were illiterate and 62.8 percent were
90 literate. Among the literate respondents it was found that 31.8 percent completed primary
91 school education and only 10.9 percent had educational qualification of intermediate and
92 above.

93 It was found that all of the respondents under study were married and most of them
94 belonged to the nuclear family (79.0 %), which showed that joint family system is gradually
95 disintegrating from the society. It was evident that 17.2 percent of the total samples were
96 housewives and only 3.6 percent were employed. Majority of them, i.e. 79.0 percent were
97 labourers by occupation and worked in agricultural field. The table also showed that 50.0
98 percent of the sample belonged to the income range Rs 10,000/- to 15,000/- followed by 20.0
99 percent belonged to income range Rs 15,001/- to Rs20,000/- and 30.0 percent belonged to the
100 income range below Rs10,000/- per month. Majority of respondents had semi pucca house
101 (75.4%) followed by 20% had pucca house, rest of the 4.5% respondents (4.5%) lived in
102 katcha house.

103 An observable number of illiteracy was found. Very few respondents had higher
104 education. It may be due to the absence of college and school in the nearby area as well as
105 poor transportation facility in that area. Majority of the respondents belonged to the nuclear
106 family, which showed that joint family system is gradually disintegrating from the society.

107 **Table 2 : Handling of kitchen waste prior to disposal by the respondents**

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n=110

Variables	Categories	Frequency	Percentage
Separation of waste	Solid and liquid waste	82	74.54
	Biodegradable and non biodegradable waste	4	3.63
	Do not separate	24	21.8
Feeling about separation	Like it very much	24	21.8
	In a habit to do so	62	56.3
Reasons for not separation	Laziness	4	3.63
	Not aware	15	13.6
	Lack of discipline in home	5	4.54
Responsibility of cleaning	Respondent	90	81.8
	Any other member	20	18.1
Method of collection	polythene bags	27	24.5
	Covered dustbins	10	9.09
	Uncovered dustbin	61	55.45
	Any other	12	10.9
Transportation of waste from home to final point	Respondent	90	81.8
	Any other member	20	18.1
Method of transportation	Hand carrying to the Community disposal point	110	100

109 Table 2 depicted the waste handling practices used by the households. Out of the 110
 110 respondents, 74.54% separated the solid and liquid waste and only 3.63% separated
 111 biodegradable and non-biodegradable waste prior to disposal. The rest of the respondents
 112 didn't bother to separate the waste. The results of the study were in agreement with the
 113 findings of **Warunasinghe and Yapa (2016)**.

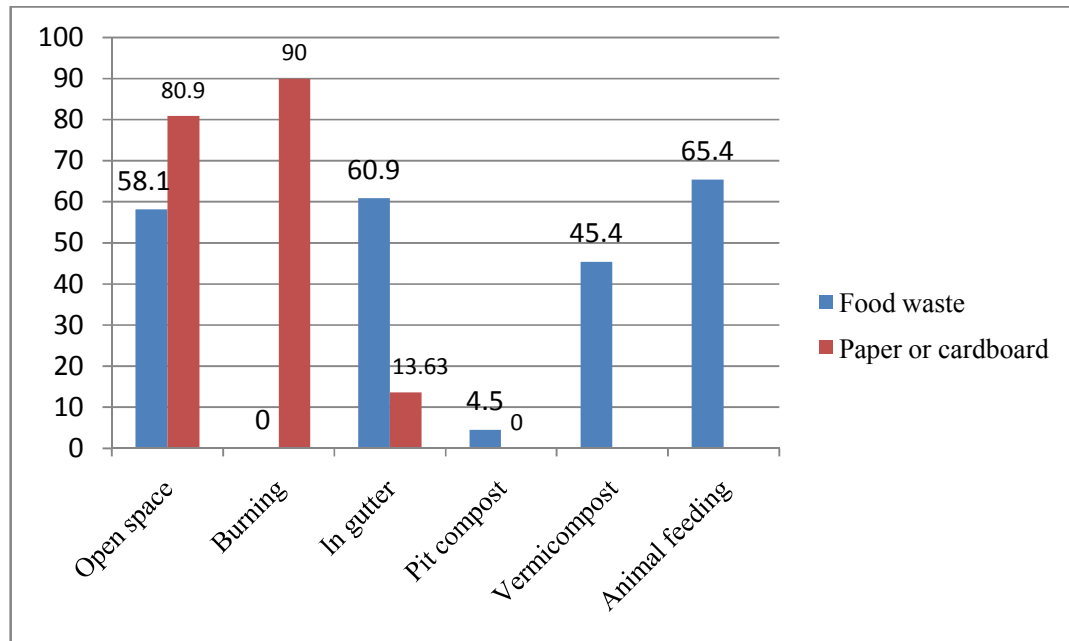
114 While questioning the respondents about the reason of waste separation, 56.3%
 115 replied that they were in a habit of doing so. Reason for non-separation of waste was due to
 116 unawareness (13.6%), laziness (3.63%) and lack of discipline in home (4.54%).

117 The findings of research conducted by **Adogu *et al.* (2015)** and **Yoda *et al.* (2014)**
118 was in agreement with the findings of the researcher that majority of respondents don't
119 separate waste prior to disposal.

120 According to the data majority of the respondents (81.8%) preferred to clean their
121 house themselves as well as transport waste from home to final disposal point. Around 18.1%
122 respondents revealed that both cleanings of house and disposal of waste were performed by
123 other members of the family like daughter-in-law or daughter etc. Uncovered dustbins were
124 preferred for waste collection by 55.45% of respondents while 9.09% of respondents used
125 covered dustbins for waste collection. Around 24.5% respondent stated that they used
126 polythene bags to store waste products and 10.9% respondents used to throw in open space
127 directly as soon as the waste was generated.

128 As there was no community waste disposal facility or any other waste disposal facility
129 available in the study area, waste was carried by hands and thrown at disposal point. It is also
130 observed that none of the male members was involved in kitchen waste management
131 practices like cleaning, collection and transportation of waste from household to final point.
132 Only female members were responsible for such activities.

133 The findings of the research were disintegrating with the findings of the research of
134 **Adogu *et al.* (2015)** and **Yoda *et al.* (2014)** which revealed that wheeled borrower or paid
135 collector was more effective method of waste transport and covered dustbin was primary
136 choice to store waste.



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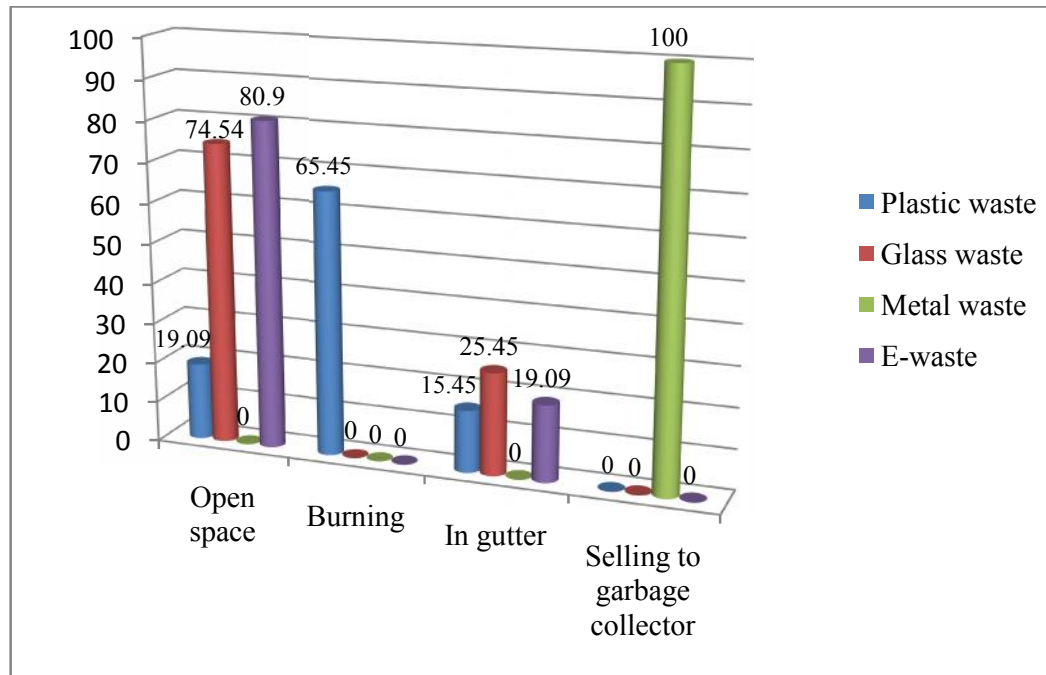
138 **Fig. 1 : Waste disposal practices for biodegradable kitchen waste products**

139 ❖ Multiple response.

140 Waste management or waste disposal is all the activities and actions required to
 141 manage waste from its inception to its final disposal. There is various kind of disposal
 142 practices are in action, some are good some are not. Figure 1 revealed the waste disposal
 143 practices by the respondents for biodegradable kitchen waste product.

144 Biodegradable kitchen waste in study area included food waste generated before
 145 (vegetable waste) and after cooking, paper and cardboard. It was observed that many of them
 146 practised improper waste disposal method such as dumping the food waste in open space
 147 (58.1%) and in gutter (60.9%). Though composting was one of the environmentally friendly
 148 ways to manage the biodegradable waste, only 45.4% of the respondents prepare
 149 vermicompost and 4.5% prepare pit compost domestically. Very fewer amounts of paper and
 150 cardboard waste were generated which they either threw in open space (80.9%) and gutter
 151 (13.63%) or burnt it (90.0%).

152 Multiple responses were observed in this table because of the type of biodegradable
 153 waste such as veg - nonveg, solid-semisolid waste etc. The finding of researcher was not in
 154 line with the findings of **Warunasinghe and Yapa (2016)** that majority of respondents
 155 dispose the waste in garbage tractors followed by burning.



156

157 **Fig. 2 : Waste disposal practices for non-biodegradable kitchen waste product**

158 Non-biodegradable waste should be handled separately like plastic bags, glass bottles
 159 etc. which cannot be decomposed, their disposal poses a big problem. Waste disposal
 160 practices by the respondents for non-biodegradable kitchen waste product is described in
 161 figure 2.

162 Non-biodegradable kitchen waste includes plastic, glass, metal and E-waste, which
 163 most of the respondents were in a practice of throwing it in an open space. There was an
 164 increased use of plastics due to changes in lifestyle and industrialisation in which plastic
 165 packages replace other forms of packaging. It was estimated that over 65.45% of households
 166 burn plastic waste, a non-biodegradable component of their domestic waste which add toxic
 167 gaseous emissions in the atmosphere. Burning plastic pollutes the air and destroys the ozone
 168 layer, thereby increasing the risk of health hazards, including cancers.

169 The findings of the researcher were in line with the findings of **Yoada et al. (2014)**
 170 that burning plastic was practise more which is harmful to both health and environment.

171 Glass waste and E-waste were thrown in gutter by 25.45% and 19.09% respondents
 172 respectively. Different type of metal waste was generated which was either sold to garbage
 173 collector or purchased new one with exchange offer.

174 It is felt that there is a need for effective disposal facilities for biodegradable and non-
175 biodegradable waste. The respondents suggested that there should be the proper and adequate
176 placement of municipality waste bins or door to door collection regularly by Municipal
177 Corporation to enable effective management of waste at community level.

178 The findings of the researcher were not in line with the findings of **Warunasinghe**
179 and **Yapa (2016)** that majority of respondents disposed the waste in garbage tractors
180 followed by burning.

181 **Conclusion**

182 The result of the study revealed that solid and liquid waste separation was quite in practice
183 and awareness must be created among other respondents about practise of biodegradable and
184 non-biodegradable waste to separate prior to disposal. The main reason for not separating was
185 lack of awareness followed by laziness and lack of discipline in home. Improper waste
186 disposal methods such as dumping in open and gutter, burning were practised more readily in
187 comparison to environmental friendly methods like composting for biodegradable kitchen
188 waste due to laziness and lack of discipline. As per food waste was concern majority of the
189 respondents used the waste as animal feeding. The common disposal practices for non-
190 biodegradable kitchen waste was dumping at any place followed by burning, resulting due to
191 lack of awareness about the effect of such action on human life as well as environment. Due
192 to available facilities metal waste was the only waste which was either sold or exchanged
193 rather than throwing.

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