A Study to assess the Knowledge and Practice on Disposal of Household Waste among Women in Selected Community Area

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Abstract:
Objectives/Aim: A global review of household waste management, estimated that cities currently generate roughly 1.3 billion tone of household waste per year, due to current urbanization trends, this gruel will grow to 2.2 billion tons per year by 2025 i.e., an increase of 70 percent. The aim of the study was to assess the knowledge and practice on disposal of household waste among women in selected community area. The objective of the study was to assess the knowledge and practice regarding household waste disposal among women, to correlate the knowledge and practice regarding household waste disposal among women, to find out the association between the women's knowledge on household waste disposal and demographic variables, to find out the association between the women's practice on household waste disposal and demographic variable. Materials and Methods: Descriptive research design was used for the study. 94 women from selected community area were selected by purposive sampling technique. Self-structured questionnaire was used to collect data. The data was analyzed and tabulated. Results: Majority (52.1%) of subjects had moderate knowledge,(33%) had inadequate knowledge and least (14.9%) had adequate knowledge, Majority (53.2%)had adequate practice and (36.2%) had moderate practice and only 10.6% had inadequate practice. There was a positive correlation between knowledge and practice. There was no significant association between knowledge and practice with selected demographic variables. Conclusion: Disposal of waste is an important procedure to be followed by every individual in the community. Therefore, proper disposal is necessary to promote and maintain a healthy environment.
Keywords: Household waste, disposal, women, community

Introduction:
Waste is defined as unwanted remains, residues and discarded material or by products which are no longer required by the initial user. These materials are by-products of human activities such as process of preparation, manufacture, packing, repacking, unpacking, construction, renovation of structures and mining operations. Household waste means any solid or liquid material normally generated by the family in a residence in the course of ordinary day-to-day living, including but not limited to garbage, paper products, rags, leaves and garden trash.

In India we produce 300 to 400 grams of solid waste per person per day in town of Normal size but exceptionally about 500 to 800gms of solid waste is generated per capita per day in metro cities like Delhi and Bombay. According to The Energy Research Institute (TERI). "Our limited analysis suggests that unclean air and water may be taking a toll in terms of over eight lakh deaths in the country each year and morbidity costs amounting to 3.6% of GDP," the report said.

Waste management and water sanitation are major driving forces for community health in India. But the basic practices of waste disposal are often neglected. People around the globe are aware of the impact of improper waste disposal practices, but the negative attitude of implementation gives rise to confusing situations. Improper waste management deteriorates public health, degrades quality of life, and pollutes local air, water and land resources.

In less industrialized times and even today in many developing countries, households and industries disposed of unwanted materials in bodies of water or in land dumps. However, this practice creates undesirable effects such as health hazards and foul odours. Open dumps serve as breeding grounds for disease-carrying organisms such as rats and insects. As the first world became more alert to environmental hazards, methods for waste disposal were studied and improved. Today, however, governments, policymakers, and individuals still wrestle with the problem of how to improve methods of waste disposal, storage, and recycling.

The SwachhBharath mission led by the Government of India aims to make India a clean country. This campaign was launched officially to achieve the goal of cleanliness and sanitation. A clean environment, open defecation free areas, personal hygiene practices among the individuals, proper solid and liquid waste management, and availability of adequate safe drinking water determine the health of individuals as well as the community .As per the reports both urban and rural environment polluted and bring danger to health of the individual and community.

The impact of improper disposal of waste materials like toxic if consumed by man or animals can be very dangerous to life. Some waste such as plastic containers act as breeding grounds for mosquitoes. Mosquitoes are responsible for spread of malaria and dengue fever. In addition houseflies spread germs responsible for stomach upsets and other illnesses.

Even after the felt needs proper waste management people do not have adequate knowledge about disposal of household wastes. The only thing is ordinary people can do in order to let the world know the importance of waste disposal is by teaching the households and the forth coming citizens .

Relevant previous study:

Mrs. Rinu David, Mrs. Shaly Joseph Pullan (2021) A study to assess knowledge, attitude and practice regarding household waste disposal among women in Chittattukara. It was done using descriptive survey design.100 women in Thrissur were chosen by convenient sampling and data were collected using self structured questionnaire. The results shows that 21% had excellent knowledge, 67% had good knowledge, 6% had average knowledge, 5% had proper practice,57% had average practice,38% had improper practice.

Abin Baby and Shycil Mathew (2020)conducted A correlative study was conducted to assess the knowledge and practice of household waste management among housewives in selected rural community at Mangalore with a view to provide information pamphlets. A total of 60 housewives from area were selected for the study by using purposive sampling method. A structured questionnaire and practice checklist was distributed to collect the data. The study result reveals that most of the subjects (70%) have average knowledge and 33.3% of subjects had good knowledge on household waste management. This shows that majority of the subjects (60%) had inadequate knowledge and only 35 % of the subjects have adequate knowledge on household waste. most of the subjects (80%) have average practice and the rest (20%) of subjects had good practice on waste management. The study concluded that most of the subjects had average knowledge on household waste management. Majority of the subjects had moderate practice score on household waste management .

Sangita Singh in 2020 conducted a descriptive study to assess knowledge and attitude of household waste management in urban population of Patna. Structured questionnaire was given to 150 women to collect data. The results showed 64% had adequate knowledge.

Haiku Eshete, AsnakeDesalegn, FitsumTigu (2023) conducted study to assess knowledge, attitudes and practice on household solid waste management of associated factors at Gelemso town, Ethiopia in 2023.A

community-based cross-sectional study design was used to assess the households' KAP of SWM in Gelemso town. A systematic random sampling technique was used to recruit 390 households from Gelemso town and data was collected using a structured questionnaire. From 390 households included in the study, 61.3% of them were females. Generally, most households had correct knowledge and positive attitudes towards SWM but poor practice was observed in the study area.

Madhushree (2018) conducted study to assess the knowledge and practice regarding the domestic waste management among the households of selected rural community, Mangalore. It shows that highest percentage (75%) belongs to nuclear family, (43.8%) are homemakers and (81.3%) had previous knowledge regarding waste disposal. It also revealed that 52.5% of the sample had moderate knowledge regarding domestic waste management

RenukaSandhu (2020) conducted study to assess Knowledge Regarding Domestic Waste Management among Women. A community based descriptive study was conducted to assess the knowledge regarding domestic waste management among women at village NangalShahidan of district Hoshiarpur, Punjab. Non- Probability purposive sampling technique was used to obtain a sample of 50 women for the research study. The sample characteristics shows that majority of women belongs to age group 31-40 with 44%, 50% women done their secondary education, 76% are housewives, 74% belong Hindu religion, 58% women have open disposal of waste, 40% have monthly income between Rs 4,000-Rs 6,000 and 78% of women use television as source of information. The overall knowledge score sampling showed that 4% had an excellent knowledge whereas 50% had fair knowledge regarding domestic waste management.

SanasamGomathiChanu, Hemeswari Bhutan, AnupamaDutta(2021) conducted study to assess the Knowledge and Practices on Household Waste Management among the Slum Dwellers of Kamrup Metro, Assam. A quantitative descriptive survey design was adopted for the study. A total of 98 slum dwellers were selected by multistage sampling techniques, samples were drawn proportionately from 6 slums under Kamrup Metro, Assam. Data was collected using self-administered structured questionnaire and checklist. The study found that majority 69(70.4%) of the respondents had average knowledge and maximum number of respondents 52(53.1%) had average level of practices on household waste management. The correlation between the knowledge and practices was found to be r= 0.132. Significant association was found between knowledge of slum dwellers with their gender ($\chi 2$=6.497, df=2, p=0.039) and occupation ($\chi 2$=16.125, df=6, p=0.013). The association of practices on household waste management was found significant with religion ($\chi 2$=10.284, df 4, p=0.036) and income ($\chi 2$=17.045, df =8, p=0.030)

Objectives of the study:

To assess the level of knowledge and practice regarding household waste disposal among women.

To correlate the knowledge and practice regarding household waste disposal among women

To find out the association between the women's knowledge on household waste disposal and selected demographic variables.

To find out the association between the women's practice on household waste disposal and demographic variables.

Methodology:

This was a descriptive study under quantitative approach conducted among women at poonjeri community area. It is a small village in Chengalpattu district in state of Tamilnadu.

Purposive Sampling technique was used to choose samples. We obtained the authorization of the Institutional Human Ethics Committee for student research, Chettinad academy of research and education and obtained written consent from the participants. Data were collected using a self structured questionnaire which included demographic data, questions on knowledge, and practice on disposal of household waste. The procedure consisted of, firstly, an explanation of the study purpose, then we obtained the written consent of women who

agreed to participate. Thereafter, they were given the self-structured questionnaire by going door to door. Filling the questionnaire required 20 to 30 min, and they were collected by the investigators once completed.
To assess the knowledge of participants, we asked questions about definition, methods, types and effects of household waste disposal. To assess the practice, we asked whether the participants separated dry and wet waste, whether separated biodegradable and non biodegradable waste, separated plastics from other waste, whether used food waste for composting, whether carried cloth bags for shopping, whether recycled papers, whether used closed bins to store waste, whether threw waste on roadside.
Two levels of marks were considered. For single question of knowledge, each was marked as one point when the answer was correct and zero marks if it was wrong. For single question of practice, each was marked as one point when the answer was yes and zero if it was no.

The software SPSS was used for data analysis. Frequencies, percentage, mean and standard deviation was found for demographic variables. Frequency and percentage of level of knowledge and level of practice was found.chi square was used to find association between level of knowledge and level of practice with selected demographic variables. Correlation coefficient was used to find correlation between knowledge and practice.

Description of tool:

The tool was prepared by the investigator after reviewing the literature and consultation with the experts. It consists of three sections
Section 1: Demographic variables
This section includes assessing the demographic data such as age in years, education, occupation, type of family, family monthly income, previous knowledge, source of information and method of waste storage.
Section 2: Knowledge questionnaire
This section includes assessing the knowledge of the households with a structured questionnaire. The entire questions in this section were multiple choice questions with 3 distracters and among only one correct answer.
Section 3: Practice dichotomous checklist
This section includes 10 statements with dichotomous checklist list.

Results:

Section 1 Distribution of demographic variable among women

Table 1: Distribution of demographic variable among women

S.No	Demographic variable	Frequency	Percentage	Mean	Standard deviation
1	**Age**			1.78	0.690
	15-30 years	35	37.2		
	31-45 years	45	47.9		
	46-60 years	14	14.9		
2	**Educational qualification**			1.23	0.450
	Graduate	31	33.0		
	Diploma	12	12.8		
	High school	21	22.3		
	Middle school	11	11.7		
	Primary school	13	13.8		
	Illiterate	6	6.4		
3	**Family type**			2.80	1.637

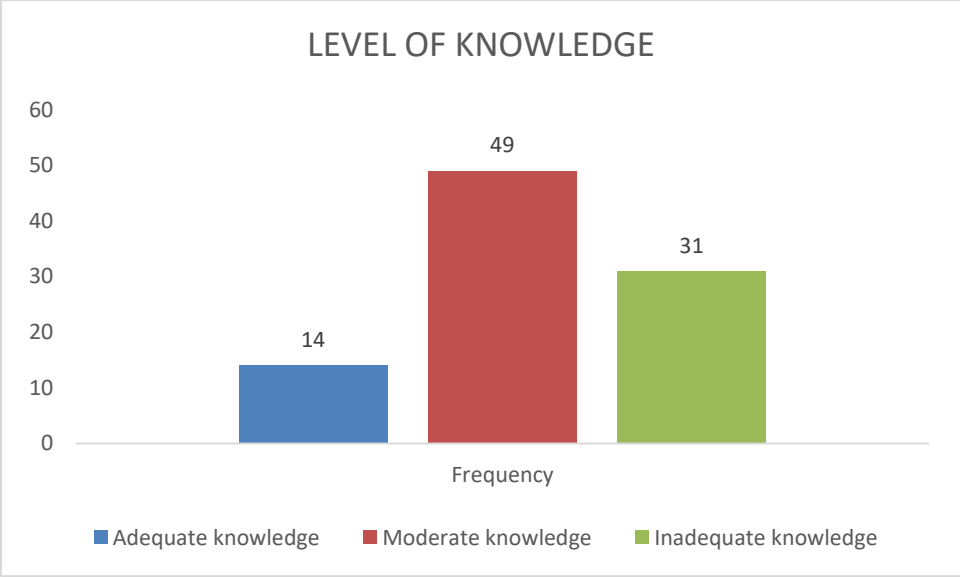
	Nuclear family	73	77.7		
	Joint family	20	21.3		
	Extended family	1	2		
4	**Occupation**	62	66.0	1.66	1.083
	Homemaker				
	Private employee	16	17.0		
	Government employee	2	2.1		
	Self employee	14	14.9		
5	**Monthly income**			2.28	1.130
	<rs 5000	31	33.0		
	Rs 5001 – rs 10000	25	26.6		
	Rs 10001- rs 15000	19	20.2		
	>rs 15000	19	20.2		
6	**Previous knowledge**			1.20	0.404
	Yes	78	83		
	No	16	17		
7	**Medium for previous knowledge**			2.32	1.608
	Radio	9	9.6		
	Television	35	37.2		
	Public meeting	13	13.8		
	Wall poster	5	5.3		
	Others	16	17.0		
	Not known	16	17		
8	**Collection method**			2.46	1.104
	Plastic bag	27	28.7		
	Cardboard box	15	16.0		
	Bin/drum	34	36.2		
	No storage- direct disposal	18	19.1		

The study revealed that majority 47.9% belonged to 31-45 years of age, 33% were graduates, 77.7 % belonged to nuclear family, 66% were homemakers, 33%had monthly income of more than 5000, 83%had previous knowledge, 37.2% had previous knowledge from television and 36.2% collected waste in bin or drum

The findings are comparable to study conducted by Madhushree in 2018 to assess the knowledge and practice regarding the domestic waste management among the households of selected rural community, Mangalore. It shows that highest percentage (75%) belongs to nuclear family, (43.8%) are homemakers and (81.3%) had previous knowledge regarding waste disposal.

Section 2 Level of knowledge among women

Figure 1

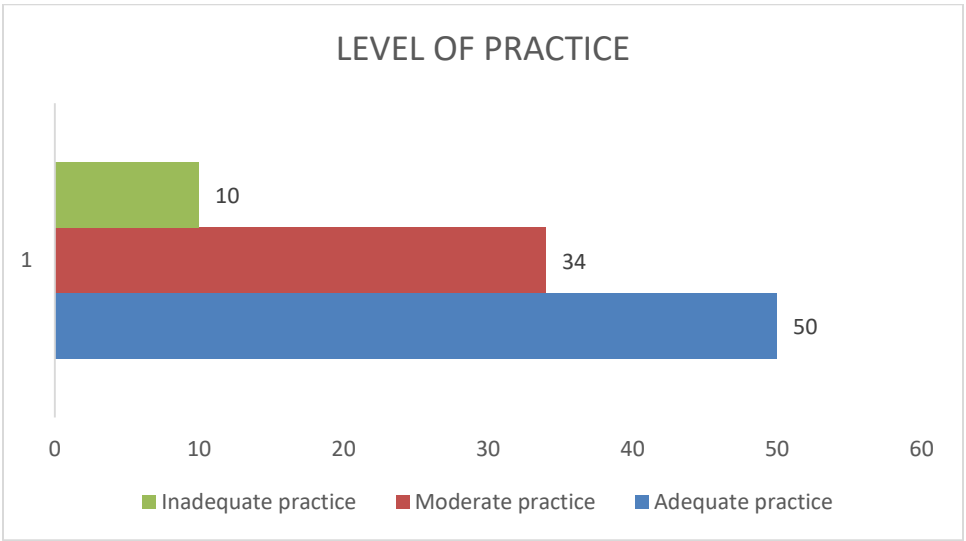


The findings revealed that majority 52% had moderate knowledge, 33% had inadequate knowledge and only 15% had adequate knowledge.

The present study is supported by study to assess the knowledge regarding domestic waste management and its effect on health among homemakers from selected area of Pune city conducted by Sandeepchouhan and Anita Nawale in 2018. The study revealed that 60% had average knowledge, followed by 34%had poor knowledge and only 6% had good knowledge.

Section 3 Level of practice among women

Figure 2



The findings showed that majority 53% had adequate practice,36% had moderate practice and only 11% had inadequate practice. Results obtained from this study contradict to the results reported in another study

conducted by Mrs. Rinu David and Mrs. Shaly Joseph Pullan in 2021 to assess knowledge, attitude and practice regarding household waste disposal among women at chittattukara. The study showed that only 5% had proper practice, 57% had average practice and least 38% had improper practice.

Section 4 Association between demographic variables and level of knowledge

Table 2: Association between demographic variables and level of knowledge

S.No	Demographic variable	Category	Level of knowledge			X^2	P value
			Adequate knowledge	Moderate knowledge	Inadequate knowledge		
1	Age	15-30 years	4	17	14	3.764 (df=4)	0.439 (NS)
		32-45 years	9	25	11		
		46-60 years	1	7	6		
2	education	Graduate	4	17	10	11.020 (df=10)	0.356 (NS)
		Diploma	3	5	4		
		High school	6	11	4		
		Middle school	1	6	4		
		Private school	0	8	5		
		Illiterate	0	2	4		
3	Family type	Nuclear family	11	36	26	3.956 (df=4)	0.412 (NS)
		Joint family	3	13	4		
		Extended family	0	0	1		
4	occupation	Homemaker	7	34	21	7.048 (df=6)	0.316 (NS)
		Private employee	4	9	3		
		Government employee	1	1	0		
		Self-employee	2	5	7		
5	Family income	<Rs 5000	2	20	9	5.338 (df=6)	0.501 (NS)
		Rs 5001-rs 10000	4	12	9		
		Rs 10001-rs 15000	3	10	6		
		>Rs 15000	5	7	7		
6	Previous knowledge	Yes	12	42	24	1.010 (df=2)	0.604 (NS)
		No	2	7	7		
7	Medium for previous knowledge	Radio	2	3	4	3.330 (df=10)	0.973 (NS)
		Television	5	19	11		
		Public meeting	2	7	4		
		Wall poster	1	3	1		
		Others	2	10	4		
		Not	2	7	7		
8	Collection method	Plastic bag	3	14	10	4.689 (df=6)	0.584 (NS)
		Cardboard box	2	6	7		
		Bin/drum	7	20	7		
		No storage-direct disposal	2	9	7		

There is no significant association between demographic variables and level of knowledge ($p>0.05$)

The findings of this study contradict with the study conducted by Mrs. Sangita Singh in 2019 to assess the knowledge and attitude of women regarding household waste management in urban population of Patna. Its findings showed that demographic variables like type of family, occupation and family monthly income was significant to level of knowledge.

Section 5 Association between demographic variables and level of practice

Table 3:Association between demographic variables and level of practice

S.No	Demographic variable	Category	Level of knowledge			X^2	P value
			Adequate practice	Moderate practice	Inadequate practice		
1	Age	15-30 years	21	10	4	4.372 (df=4)	0.358 (NS)
		32-45 years	20	21	4		
		46-60 years	9	3	2		
2	education	Graduate	16	12	3	10.230 (df=10)	0.421 (NS)
		Diploma	9	3	0		
		High school	8	8	5		
		Middle school	5	5	1		
		Private school	8	5	0		
		Illiterate	4	1	1		
3	Family type	Nuclear family	39	25	9	2.727 (df=4)	0.604 (NS)
		Joint family	11	8	1		
		Extended family	0	1	0		
4	occupation	Homemaker	34	22	6	5.117 (df=6)	0.529 (NS)
		Private employee	10	4	2		
		Government employee	0	2	0		
		Self-employee	6	6	2		
5	Family income	<Rs 5000	17	10	4	5.392 (df=6)	0.495 (NS)
		Rs 5001-rs 10000	15	7	3		
		Rs 10001-rs 15000	11	8	0		
		>Rs 15000	7	9	3		
6	Ever knew	Yes	42	29	7	1.376 (df=2)	0.503 (NS)
		No	8	5	3		
7	medium	Radio	5	4	0	4.947 (df=10)	0.895 (NS)
		Television	20	13	2		
		Public meeting	7	4	2		
		Wall poster	3	1	1		
		Others	7	7	2		
		Not	8	5	3		
8	Collection method	Plastic bag	15	9	3	7.449 (df=6)	0.281 (NS)
		Cardboard box	11	3	1		
		Bin/drum	18	14	2		
		No storage-direct disposal	6	8	4		

There is no significant association between demographic variables and level of practice (p>0.05)
The above findings can be compared with the study conducted to assess the practice among housewives regarding waste management in rural Manitoba community. It showed that there was no significant association with the practice and selected demographic variables.
Section 6 Correlation between level of knowledge and level of practice
There was a positive correlation between the two variables, r= 0.100, n=94, however the relationship was not significant (p=.339)
In a correlative study to assess the knowledge and practice of housewives regarding household waste management in selected rural community at Mangalore with a view to provide an information pamphlet by Abin Baby and Shycil Mathew there was significant relationship between knowledge score and practice score of subjects on waste management(r=0.346, df=59.000,p<0.05)

Recommendations:

A similar study can be replicated on a large sample to generalize the findings.
A study can be done to assess the efficiency of various teaching strategies like self-instruction module, pamphlets, leaflets and computer assisted instruction on proper disposal of waste.
Educational programs on household waste management should be expanded through various media to keep the methods alive in the minds of the general people. This program might focus heavily on the benefit of health.
The government should conduct IEC activities to aware the public all the measures, services and penalties related to waste management.

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