

# A Study to Assess the Knowledge and Attitude Regarding Household Waste Management among Housewives in Selected Urban Slum Area, Agartala, Tripura West in a View to Develop Pamphlet

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## Abstract

The objectives of the study is to assess the knowledge regarding household waste management, to identify attitude regarding household waste management among the housewives in selected urban slum areas, Agartala, Tripura West and also to find out the association between knowledge score regarding household waste management among the housewives with their selected demographic variables. The Conceptual Framework based on Modified Pender's Health Promotion Model is used. In this study housewives of urban slum area were selected as a sample 100 (hundred) samples were selected for the study by non-probability purposive sampling technique. Knowledge level and attitude of the housewives assessed using standardized questionnaire and attitude scale which is modified by 9 (nine) experts of various nursing and medical department as well as by the statistician. Reliability of the tools is 0.70 and 0.84 (r) that was checked using Cronbach's Alpha correlation coefficient method. Statistical analysis was done by chi square test and frequency distribution table to assess the knowledge and attitude regarding household waste management among housewives in selected urban slum area. The finding of the study revealed that in regarding the household waste and its management among 100 number of housewives (in the age of 18 and its above), 23% of housewives are having adequate knowledge 35% of housewives is having moderate knowledge and 42% of housewives having inadequate knowledge and 20% of housewives is having positive attitude, 33% housewives having average attitude and 47% housewives having negative attitude. There is significant association between the knowledge of the housewives regarding household waste and its management and their selected demographic variable that is educational status and no association between knowledge of the housewives regarding household waste and its management and their selected demographic variable that is age, religion, and size of the family, source of information and income of the family.

**Keywords:** Waste management; Housewives; Agartala; Tripura

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## Introduction

Waste is defined as unwanted remains, residues discarded and 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. Almost any substance that is discarded is designated as waste, but it may be considered as a potential resource. Virtually everything also in the "waste stream" has residual value

for someone or some business in the community. Waste can serve as valuable resources as ground cover to reduce erosion, fertilizer to nourish the crops and the source of energy etc., [1]. The management of waste should focus on how to find the value and redirect it back to the community. But unfortunately, our collecting and dumping process mix and crush everything together and make separation an expensive and sometimes impossible task to properly manage wastes. The proper management of solid wastes generated from individual house, institutions such as hospitals, health centres; from public eating and drinking establishments (hotels, restaurants etc.) from business and working places is a very important part of environmental health service in a community. If these wastes are not disposed in a proper way, they create breeding places for insects such as flies, mosquitoes etc., they provide food and beverages for rats. These insects and rats are health risk in that they are potential disease transmitters in addition to health [2].

### Background of the study

Ward wise average waste generated per capita per day is 350 to 750 gram. In an attempt to make Agartala a "Zero garbage discharge" city, the Agartala Municipal Corporation (AMC) implemented rules for all societies in the city to construct their own compost pit. AMC has given two small garbage bins white for wet and green for dry waste at free of cost for better waste management. The output of daily waste depends upon the dietary habits, life styles, living standards and the degree of urbanization and industrialization [3,4]. There is a correlation between improper disposal of solid wastes and incidence of vector-borne diseases. In all civilized countries, there is an efficient system for its periodic collection, removal and final disposal without risk to health [5]. Women play an important role in household waste management in the family; if she has adequate knowledge on it, she can educate her children, family members and neighbour [6]. 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 800 grams of solid waste is generated per capita per day in metro cities like Delhi and Bombay [7]. 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 Wen C [6].

### Aim of the study

To assess the knowledge and attitude regarding household waste management among the housewives.

### Specific objectives

- To assess the knowledge regarding household waste management among the housewives in selected urban slum areas, Agartala, Tripura West.
- To identify attitude regarding household waste management among the housewives in selected urban slum areas, Agartala, Tripura West.
- To find out the association between knowledge score regarding household waste management among the housewives with their selected demographic variables.

- To develop and validate pamphlet regarding household waste management.

### Assumptions

- Housewives may have the basic knowledge regarding household waste management.
- The knowledge of the housewives regarding the household waste management may influence their attitude.
- Pamphlet may help to improve their knowledge and attitude regarding household waste management.

### Hypothesis

H1: There is a significant association between knowledge score regarding household waste management among housewives with their selected demographic variables at 0.05 level of significant.

### Operational definition

**Knowledge:** In this study knowledge refers to the information, understanding and skill regarding household waste management that they have gained through their learning or experiences as measured by structured knowledge questionnaire [8].

**Attitude:** Attitude refers to the behaviour of housewives to use their knowledge and understanding of household waste management such as dumping, burning, burying etc., as measured by structured attitude scale [9,10].

**Housewives:** Housewives refer to married women who do not have a paid job but instead looks after her home and children [11].

**Household waste:** Household waste refers to the domestic or residential disposable material or waste which is generated by household.

**Household waste management:** Household waste management refers to the actions and activities of housewives to manage their household waste.

**Pamphlet:** Pamphlet refers to a small booklet or leaflet containing information and arguments about household waste and its management.

### Conceptual framework

A conceptual framework is an analogous to the frame of a house, just as the foundation supports a house. A theoretical framework provides a rationale for predictions about the relationships among variables of a research study [12,13]. Conceptualization refers to the process of refining general or abstract ideas, which are formulated by generalizing from particular manifestations of certain behaviour or characteristics. These abstracts are referred as concepts. Conceptual framework facilitates communication and provides for the systematic approach to nursing research, education, administration and practice. The conceptual framework for the present study is based on Pender's Health Promotion Model [14-16]. The model focuses on cognitive, perceptual and modifying factors and participation in health promotion behaviour. The model also identifies factors that influence the health promotion activities.

In the present study the concepts from Pender's health promotion model is utilized where the housewives with their knowledge and attitude about proper disposal of refuse and sewage act as agents for improving the methods of waste management ultimately bringing up the environmental development. The focus of the model is to explain factors that influence the knowledge and attitude of housewives regarding household waste management. Health promotion behaviour of a housewife i.e., air borne, water borne and vector borne diseases through improper disposal of refuse and sewage, efficient use of resources, promote healthy practices of refuse and sewage disposal etc. are influenced by many factors such as housewives age, religion, educational status, size of the family, family income and source of information. If the housewife has adequate knowledge and attitude proper methods of household waste management (cognitive perceptual factors), she is likely to engage in health promotional activity. If the housewife has inadequate knowledge and attitude improper methods of refuse and management of household waste (cognitive perceptual factors), she is likely to create interruption in health promotional activity according to this model, the housewives knowledge and practices are modified by the factors like age, religion, educational status, size of the family, family income and source of information. These factors influence the housewives to engage in health promoting behaviours/activities like:

- Prevention of air borne, water borne and vector borne diseases through improper disposal of refuse and sewage
- Efficient use of resources
- Promote healthy practices in disposing the refuse and sewage
- Early identification of ailments resulting from improper disposal of refuse and sewage
- Regular and frequent cleaning of drainage and refuse disposal area.
- Maintain good environmental hygiene the findings of the study is aimed at the Identification of housewives' knowledge and attitude regarding household waste management with a view to develop booklet.

## Delimitations

The study is delimited to housewives who are residing in selected urban slum area, Srilankavasti Agartala, Tripura West.

## Research Methodology

### Research approach

The selection of research approach is the basic procedure for the conduction of research enquiry. A research approach tells us so as to what data to collect and how to analyse it [17]. A quantitative non-experimental survey research approach was used in this study for providing answer to the research question about knowledge and attitude.

### Research design

A quantitative survey design is used as a research design in this

study as there is a need to conduct generalized assessment of the knowledge and attitude of housewives.

### Variables under the study

**Research variables:** In this study the research variable is "knowledge and attitude regarding household waste and its management.

**Demographic variables:** The demographic variables are age, religion, educational qualification, size of the family, income of the family and source of information.

### Research setting

The setting for the present study was Srilankavasti Urban slum area, Agartala Tripura West. The criterion for selecting this setting was the feasibility for conducting the study.

### Population

In the present study the population are housewives residing in urban slum area.

### Sample

The samples of the study were housewives residing in Srilankavasti urban slum area.

### Sampling technique

In this present study non-probability purposive sampling technique was adopted to select the sample.

### Sample size

Sample size of the study was 100 housewives.

### Criteria for selection of sample

**Inclusion criteria:** Housewives residing in Srilankavasti Urban slum area, Agartala.

- Housewives who are above 18 years.
- Housewives who are present at the time of data collection.
- Housewives who can read and write in Bengali.

### Selection and development of research tool

**Selection of tool:** Tool is the instrument used by the researcher to collect the data. A structured knowledge questionnaire and standard attitude scale was selected based on the objective of the study as it was considered the best instrument to elicit the responses from the participants.

**Development of the tool:** The demographic performance, structured knowledge questionnaire and attitude scale were developed by an extensive review of research and non-research literature regarding household waste and its management. Individual discussion with guide, peer groups, and own experiences also helped in the development of the tools [18-20]. Expert opinion was taken for ascertaining the clarity and appropriateness of the item.

### Description of tools

**Section A:** Socio demographic performance consisted of 6 items which includes age, religion, and education, size of the family, income and source of information.

**Section B:** Structured knowledge questionnaire of multiple choices on 30 item regarding household waste and its management. A score of “1” was given to all correct answer while a score of “0” given to all wrong answer to find out the household waste and its management among the housewives.

**Section C:** 5 point liker attitude scale consisting of 20 items to find out the attitude of housewives regarding household waste management.

**Data collection tools and techniques:** It is described in **Table 1**.

**Validity of the tool:** Content validity refers to the degree to which an instrument measures what it is intended to measure. The prepared instrument along with the objectives, blue print and criteria check list was submitted to 11 experts from the field of Community Health Nursing, Community Medicine and Language expert for establishing the content validity. The letter requesting to tool validation and certification were obtained by mail and provided suggestions regarding each item in the tool using a rating scale describing them as either very relevant, relevant, need modification and not relevant. Taking into consideration that was put forwarded the investigator meet necessary modification of the tool. Later the tool was translated into the local language, Bengali without changing the meaning of the tool [21,22].

- **Reliability of the tool:** The reliability of the tool was computed by Cronbach’s Alpha method. The reliability of co-efficient on knowledge questionnaire was  $r=0.70$  and the reliability co-efficient attitude scale was  $r=0.84$  revealing that the tool was feasible for administration for the main study. Since the knowledge and attitude reliability co-efficient is  $r >$ . Hence the tool was found to be reliable and feasible for the main study.
- **Try-out:** Try-out of the tool was done on 10 numbers of housewives. The main purpose of pretesting or try-out was to identify the clarity of items and to check any other difficulty felt by investigator or expressed by respondents related to tool. It was found that most of the items were clear to the respondents.
- **Ethical clearance:** Formal and administrative permission was taken from the following authorities
  - Institute Ethical committee, Agartala Hospital and Research Centre pvt. Ltd.
  - Principal, Institute Of Nursing Science.
  - In charge of Dhaleswar sub centre, Agartala, Tripura West
  - Secretary of Srilankavasti, Agartala, Tripura West.
  - Informed consent has been taken from each participant before data collection.

**Item analysis:** The item analysis of each item in the structured

knowledge questionnaire is done to check the item difficulty of each item in the structured knowledge questionnaire. Out of the 30 item 23 item are good that is discriminative index found to be within 50- 60% and remaining 7 item has difficulty index of 40-45% which indicated that the items were satisfactory.

### Pilot study

The Pilot study was conducted at Dhaleswar urban slum area, road no 4 and 5 after obtaining formal permission from the in charge of Dhaleswar sub centre, Agartala. The Pilot study was conducted on 35 (thirty-five) housewives, the samples were selected by using non- probability purposive sampling technique,  $n=35$ . The data was collected from 31-08-2020 to 02-09-2020 using socio demographic performance, structured knowledge questionnaire and attitude scale. The result of the pilot study demonstrated that the study was feasible to carry out the main study.

**Procedure for data collection:** Formal permission was obtained from ethical clearance, committee and principal. The main study was conducted from 31-08-2020 to 02-09-2020. The steps used for data collection were:

- Formal permission was obtained from secretary of srilankavasti, Agartala, Tripura West.
- Investigator introduces herself to the subjects and explains about the study.
- Selection of the 100 subject who meet the inclusion criteria and written consent were obtained from them.
- Socio demographic data obtained from the socio demographic performance through paper and pencil technique.
- Knowledge related data were collected through structured knowledge questionnaire and attitude was measured by attitude scale.
- Data collected was tabulated to analyse by using descriptive and inferential statistics.

**Plan for data analysis:** The data obtained was analysed in terms of objectives of the study using descriptive and inferential statistics.

- Organized the collected data in master sheet.
- Demographic data will be analyzing by using frequencies and percentage.
- Knowledge score and attitude level will be analyzing by computing frequency percentage, mean and standard deviation of answered question.
- Chi-square test will be used to determine the association

**Table 1** Data collection tools and techniques.

S. No	Variables To Be Measured	Tools	Techniques	Validity
1	Background information	Demographic performance	Paper and pencil	Content validity was done by 9 experts
2	Assessment of knowledge	Structured questionnaire	Paper and pencil	Content validity was done by 9 experts
3	Assessment of attitude	5 point likert attitude scale	Paper and pencil	Content validity was done by 9 experts

between knowledge scores and selected demographic variables.

- The findings were presented in table and graphs.

## Results

The data was presented under the following headings:

### Section A - Description of demographic variables of housewives

Data in the **Table 2** show that among the 100 housewives, 42% belonged to 18-23 years age group, 28% belonged to 24-29 years age group and 30% is belongs to 30 and above age group and 95% are Hindu and 5% are Muslim, Religion. 33% are belongs from Primary education, 42% are belonged to secondary education, 25% belonged to higher secondary and above, 61% have less than equal to 4 members in their home, 34% have 5-8 members in their home and 5% have 9-12 members in their home.65% have information from Mass media, 30% have information from Family and 5% have information from others, 35% belongs to less than equal to 5000 Rs/month family income, 45% belongs to 5001-10,000 Rs/month family income and 20% belongs to 10,001 and above Rs/month family income.

### Section B - Findings of knowledge regarding household waste and its management

Data in the **Table 3** shows that among the 100 housewives 23% of housewives have adequate knowledge, 34% have moderate knowledge and 43% have inadequate knowledge regarding household waste management (**Figure 1**).

### Section C - Findings related to attitude level of the housewives regarding household waste and its management

The **Table 4** indicates that among 100 housewives, 20% housewives have adequate level of attitude, 33% have moderate level of attitude and 47% have inadequate level of attitude (**Figure 2**).

### Section D - Findings related to association between the knowledge score of housewives with their selected demographic variables

**Table 5** revealed that calculated chi square value of the demographic variables such as age, religion, size of family, source of information and family income are less than tabulated chi square value at 0.05 level of significance, whereas the calculated chi square value of demographic variables that education is more than tabulated chi square value that is  $X^2_{Cal} (8.86) > X^2_{Tab} (3.84)$ . Therefore, there is association between the knowledge and demographic variable education at 0.05 level of significance. Hence  $H_1$  is accepted.

## Discussion

This chapter deals with the major findings of the study, discussion in relation to other studies, conclusion, implications in the field of nursing education, nursing administration, nursing practice, nursing research, limitations of the study and recommendation for future research. Major findings related to the objectives of

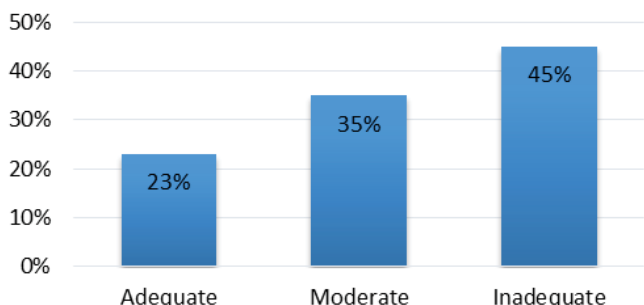
**Table 2** Frequency and percentage distribution of housewives according to socio demographic variables (n=100).

S. No	Demographic Variables	Categories	Frequency	Percentage (%)
1	Age	18-23 years	42	42%
		24-29 years	28	28%
		30 and above	30	30%
2	Religion	Hindu	95	95%
		Muslim	5	5%
		Others	-	0%
3	Education	Primary education	33	33%
		Secondary education	42	42%
		Higher secondary and above	25	25%
4	Size of family	Less than equal to 4 members	61	61%
		5-8 members	34	34%
		9-12 members	5	5%
5	Source of information Do they have any knowledge, if yes than	Mass media	65	65%
		Family	30	30%
		Others	5	5%
6	Family income	Less than equal to 5000 Rs/month	35	35%
		5001-10000 Rs/ month	45	45%
		10,001 and its above	20	20%

**Table 3** Depict knowledge score of housewives regarding household waste and its management.

Knowledge	Frequency	Percentage
Adequate (> 75%)	23	23%
Moderate (51-75%)	35	35%
Inadequate (< 50%)	42	42%

### KNOWLEDGE LEVEL

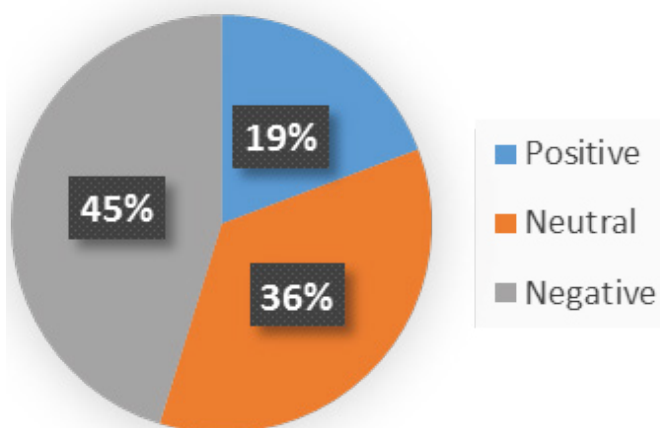


**Figure 1** Percentage distribution of housewives knowledge level regarding household waste and its management.

**Table 4** Depict attitude level of the housewives regarding household waste and its management.

Attitude	Frequency	Percentage
Positive (> 75%)	20	20%
Neutral (51-75%)	33	33%
Negative (< 50%)	47	47%

### ATTITUDE



**Figure 2** Percentage distribution of housewives attitude level regarding household waste and its management.

the study include:

#### Objective I: To assess the knowledge regarding household waste management among housewives in selected urban slum area, Agartala, Tripura West

With regards of knowledge level, among 100 housewives

23% housewives have adequate knowledge, 34% housewives have moderate knowledge, 43% housewives have inadequate knowledge. A similar study also conducted to assess the knowledge and practice regarding proper household waste management among the housewives. Findings of the study reveals that out of 60 housewives, 47 (78.4%) housewives had practiced below average disposal practices, 13 (28.6%) had practiced average practices on household waste management and 33% housewives had adequate knowledge, 45% had moderate knowledge and 22% had inadequate knowledge.

#### Objective II: To identify attitude regarding household waste management among the housewives in selected urban slum area, Agartala, Tripura West

With regards of attitude level, among 100 housewives 20% housewives have positive attitude level, 33% housewives have neutral attitude, 47% housewives have negative attitude. A similar study was conducted to assess the attitude of household waste management among housewives in a rural area of Northern Kerala. In the study, 93.8% of the study population had above average attitude and 6.2% had below average attitude. Almost 70% had the belief that government is not doing anything to fix the garbage problem. About 97%, 88.6% and 92% were willing to do composting, segregation and recycling of waste respectively.

#### Objective III: To find out the association between knowledge score regarding household waste management among housewives with their selected demographic variables

With regards to age of the housewives, the calculated value is 1.12 which is less than the table value 3.84 with df 1. Hence the knowledge score among the housewives is not significant at 0.05 level, religion of the housewives, the calculated value is 0.70 which is less than the table value 3.84 with df 1. Hence the knowledge score among the housewives is not significant at 0.05 level, education of the housewives, the calculated value is 8.86 which is greater than the table value 3.84 with df 1. Hence the knowledge score among the housewives is significant at 0.05 level, size of family of the housewives, the calculated value is 0.12 which is less than the table value 3.84 with df 1. Hence the knowledge score among the housewives is not significant at 0.05 level, source of information of the housewives, the calculated value is 1.46 which is less than the table value 3.84 with df 1. Hence the knowledge score among the housewives is not significant at 0.05 level, family income of the housewives, the calculated value is 0.50 which is less than the table value 3.84 with df 1. Hence the knowledge score among the housewives is not significant at 0.05 level. A similar study conducted by Avinir F [8] to assess the knowledge and attitude of housewives regarding household waste management in selected rural community at Mangalore with a view to provide an information pamphlet. Findings of the study reveals that majority of the subjects (65%) were having only average knowledge. There was a significant relationship between knowledge score and attitude score of the subjects on waste management ( $r=0.346$ ,  $df=59.000$ ,  $p < 0.05$ ). The findings of this study suggest that there is a need for educating the mothers regarding the proper household waste management.

**Table 5** Chi square values of the demographic variables such as age, religion, size of family, source of information and family income.

S. No	Demographic Variables	Categories	Knowledge Score			Tabulated Value	X <sup>2</sup> Value	Df
			Adequate	Moderate	Inadequate			
1	Age	18-23 years	12	15	15	3.84	1.12	1
		24-29 years	6	10	12			
		30 and above	5	10	15			
2	Religion	Hindu	22	34	39	3.84	0.7	1
		Muslim	1	1	3			
		Others	-	-	-			
3	Education	Primary education	10	15	8	3.84	8.86*	1
		Secondary education	5	14	23			
		Higher secondary and above	8	6	11			
4	Size of family	Less than equal to 4 members	15	20	26	3.84	0.12	1
		5-8 members	6	10	18			
		9-12 members	2	3	-			
5	Source of information Do they have any knowledge, if yes than	Mass media	15	20	30	3.84	1.46	1
		Family	6	12	12			
		Others	2	3	-			
6	Family income	Less than equal to 5000 Rs/month	-	12	15	3.84	0.5	1
		5001-10000 Rs/ month	-	16	20			
		10,001 and above	-	7	7			

Women take a key role in housekeeping and disposing domestic waste. So the Government and frontline health workers need to take special initiatives to curb this public issue.

**Objective-IV: To develop and validate pamphlet regarding household waste and management**

Assessment of knowledge score showed that the housewives were having poor knowledge regarding household waste management; therefor pamphlet regarding household waste management has been distributed to the housewives to improve their knowledge and attitude. Avidrik Hain conducted a descriptive study to assess the knowledge and practice of housewives regarding household waste management in a selected community Karnataka with a view to provide an information booklet. Among them 35% were having average knowledge, 25% were having adequate knowledge and 40% were having inadequate knowledge. Findings under study suggest that there is a need for educating the housewives regarding proper household waste management with the help of information booklet.

**Limitations**

The limitations of the study findings are:

- Non probability purposive sampling technique is used, so the scope for generalization is less.
- Limited sample size (100) restricts the findings to be generalized.
- The study was limited to housewife of only one area.

**Conclusion**

From the study it can be concluded that regarding the household waste and its management among 100 number of housewives (in the age of 18 and its above), 23% of housewives were having adequate knowledge, 35% of were having moderate knowledge and 42% of were having inadequate knowledge and 20% of housewives is having positive attitude, 33% housewives having average attitude and 47% housewives having negative attitude. There is significant association between the knowledge of the housewives regarding household waste and its management and their selected demographic variable that is educational status and no association between knowledge of the housewives regarding household waste and its management and their selected demographic variable that is age, religion, and size of the family, source of information and income of the family.

**Recommendations**

On the basis of findings, the following recommendations have been made

- A similar study can be conducted in different setting.
- A similar study can be conducted on biomedical waste management.
- A similar study can be conducted with a large sample size for generalization of the study findings.
- The similar study can be carried out by giving educational intervention to give awareness regarding household waste and its management.

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