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A CROSS-SECTIONAL STUDY TO ASSESS KNOWLEDGE AND PRACTICES REGARDING DOMESTIC WASTE MANAGEMENT AMONG HOUSEWIVES…

Community Health Nursing

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ABSTRACT

Background: Domestic waste management is a growing public health and environmental concern, especially in urban communities. Housewives play a crucial role in managing household waste, and their knowledge and practices significantly influence effective waste disposal and environmental sustainability.**Objectives:** To assess the knowledge and practices regarding domestic waste management among housewives and to determine their association with selected socio-demographic variables. **Methods:** A descriptive cross-sectional study was conducted among 290 housewives residing in an urban community. Participants were selected using a convenience sampling technique. Data were collected using a self-structured questionnaire comprising socio-demographic variables, knowledge (15 items), and practice (10 items on a 3-point Likert scale). Descriptive and inferential statistics were used for analysis.**Results:** The majority of participants (49.66%) had average knowledge, while 27.59% had good knowledge and 22.76% had poor knowledge regarding domestic waste management. Regarding practices, 55.17% demonstrated average practice, 39.66% good practice, and 5.17% poor practice. A moderate to strong positive correlation was observed between knowledge and practice ($r = 0.55$, $p < 0.0001$). Significant associations were found between knowledge and variables such as family income, diet, and prior information, while practice was significantly associated with religion, income, and prior knowledge. **Conclusion:** The study concludes that although housewives possess moderate knowledge and practices regarding domestic waste management, there is a need for improvement. Targeted educational interventions, including information booklets and community-based awareness programs, are essential to enhance knowledge and promote better waste management practices.

KEYWORDS

Domestic Waste Management, Knowledge, Practice, Housewives, Urban Community, Public Health

INTRODUCTION:

Domestic waste management has become a significant public health and environmental concern, particularly in developing countries experiencing rapid urbanization and population growth (1). According to World Health Organization, improper handling and disposal of household waste contribute to environmental pollution and increase the risk of vector-borne and communicable diseases (2).

Central Pollution Control Board reported that a major proportion of municipal solid waste originates from households, emphasizing the need for effective management at the source level (3).

Among household members, housewives are often primarily responsible for domestic activities, including waste management. Their knowledge and practices directly influence the effectiveness of waste management systems at the household level (4). Adequate knowledge regarding waste segregation, recycling, and composting can significantly reduce environmental burden and promote sustainable practices (5).

However, despite various governmental initiatives and awareness programs, gaps persist between knowledge and actual practices of waste management at the household level (6). Socio-demographic factors such as education, income, and type of residence have been reported to influence both knowledge and practices (7).

According to a report by the World Bank, global waste generation is expected to rise significantly in the coming decades if sustainable practices are not adopted (8). Improper waste disposal has been linked to environmental degradation and adverse health outcomes (9).

A study by Gupta and Yadav reported that a majority of participants had basic awareness of waste disposal; however, detailed knowledge regarding segregation and recycling was limited (10).

Similarly, Kumar et al. found that educational status significantly influenced knowledge levels, with higher education being associated with better awareness (11).

Another study by Singh et al. highlighted that although participants were aware of waste management concepts, misconceptions regarding practical implementation were common (12).

Guerrero et al. reported that improper segregation and mixed waste disposal remain common practices at the household level and is one of the alarming concern (13).

In a study conducted by Reddy and Kumar, it was found that convenience and lack of infrastructure were major barriers to proper waste management practices (14).

Furthermore, Sharma et al. reported that even when knowledge levels were adequate, proper practices were not consistently followed (15).

MATERIALS AND METHODS

Study Design and Setting

A descriptive cross-sectional study was conducted to assess the knowledge and practices regarding domestic waste management among housewives residing in an urban community.

Sample Size Calculation

The sample size was calculated based on a study conducted by Sandeep Chouhan and Anita Nawale (2018) in Pune city, which assessed knowledge regarding domestic waste management among homemakers (23).

The sample size was determined using the formula:

$$n = \frac{(Z_\alpha + Z_\beta)^2 \times p \times q}{E^2}$$

Where:

- n = required sample size
- $Z\alpha = 1.96$ (95% confidence interval)
- $Z\beta = 1.282$ (90% power)
- p = estimated proportion from previous study
- $q = 1 - p$
- E = absolute precision (6%)

Based on the above formula, the calculated sample size was 286. Considering feasibility and rounding off, the final sample size was taken as **290 participants**.

Study Population

The study population comprised housewives aged 18–50 years residing in the selected urban community.

Inclusion Criteria

- Housewives aged between 18–50 years
- Housewives present at home during the period of data collection
- Housewives who were able to read and write Hindi, English, or Marathi

Exclusion Criteria
- Housewives with physical or mental disabilities
- Housewives who had participated in a similar study within the past 6 months

Sampling Technique
A **convenience sampling technique** was used to select the study participants. All housewives who met the inclusion criteria and were available during the data collection period were included until the desired sample size was achieved.

Home visits were conducted in the selected urban community, and eligible participants were recruited based on accessibility and willingness to participate.

Data Collection Tool
Data were collected using a **self-structured, self-administered questionnaire**, developed to assess knowledge and practices regarding domestic waste management.

The tool consisted of three sections:

Section A: Socio-demographic Variables
This section included 8 items related to: Age, Religion, Education, Number of family members, Family income, Dietary pattern, Previous knowledge regarding waste management

Section B: Knowledge Assessment
This section consisted of **15 structured questions** to assess knowledge regarding domestic waste management. Each correct response was awarded **1 mark**. Total score ranged from **0 to 15**

Knowledge levels were categorized as:
- Poor: 0–5
- Average: 6–10
- Good: 11–15

Section C: Practice Assessment: This section included **10 items** measured on a **3-point Likert scale**:
- Always (2 marks)
- Sometimes (1 mark)
- Never (0 mark)

The total score ranged from **0 to 20**.
Practice levels were categorized as:
- Poor: 0–6
- Average: 7–13
- Good: 14–20

Validity and Reliability of the Tool
The tool was validated by experts in the field, and reliability was established prior to data collection.

RESULTS
This section presents the analysis and interpretation of data collected from the study participants. The results are based on data obtained from a total of 290 housewives and include their socio-demographic profile along with findings related to knowledge and practices of domestic waste management.

The majority of participants, **126 (43.4%)**, belonged to the **21–30 years** age group, whereas only **13 (4.5%)** were aged less than 20 years. Regarding religion, more than half of the participants, **151 (52.1%)**, were Muslims, followed by **125 (43.1%)** Hindus, **10 (3.4%)** Christians, and **4 (1.4%)** Sikhs.

In terms of educational status, **134 (46.2%)** participants had completed higher secondary education, followed by **79 (27.2%)** with secondary education. Only **13 (4.5%)** participants had primary-level education, while **64 (22.1%)** were graduates and above whereas with respect to dietary pattern, the majority (**160; 55.2%**) followed a mixed diet, whereas **74 (25.5%)** were non-vegetarian and **56 (19.3%)** were vegetarian as shown in Table 1.

Table 1: Frequency distribution of study participants as per socio demographic variables (n=290)

Socio-demographic variable	Parameters	Frequency(f)	Percentage (%)
Age	<20	13	4.5
	21-30	126	43.4
	31-40	107	36.9
	41-50	44	15.2
Religion	Hindu	125	43.1
	Muslim	151	52.1
	Sikh	10	3.4
	Christian	4	1.4
Education	Primary	13	4.5
	Secondary	79	27.2
	Higher Secondary	134	46.2
	Graduate and above	64	22.1
Diet	Vegetarian	56	19.3
	Non vegetarian	74	25.5
	Mixed	160	55.2

Regarding family size, **142 (49.0%)** participants had **2–4 family members**, followed by **132 (45.5%)** with **5–7 members**. A small proportion had larger families, with **9 (3.1%)** having 8–10 members and **7 (2.4%)** having more than 10 members.

More than half of the participants, **168 (57.9%)**, reported **no previous knowledge** regarding domestic waste management, whereas **122 (42.1%)** had prior knowledge.

Among those with prior knowledge, the major source of information was **school education (42.62%)**, followed by the **internet (36.07%)**, and other sources such as siblings, neighbors, posters, and television (24.49%).

Regarding monthly family income, the largest proportion (**55; 19%**) had an income of less than 6174, followed by **52 (17.95%)** in the 6175–18496 category. Other income groups were distributed across higher ranges, indicating variability in socio-economic status among participants a shown in table 2.

Table 2: Frequency distribution of study participants as per socio demographic variables (n=290)

Socio-demographic variable	Parameters	Frequency (f)	Percentage (%)
No of family members	2-4	142	49.0
	5-7	132	45.5
	8-11	9	3.1
	11 & above	7	2.4
Total Income of family (Rs)	6174	55	19.0
	6175-18496	52	17.9
	18497-30830	39	13.4
	30831-46128	37	12.8
	46129-61662	38	13.1
	61663-123321	26	9.0
	123322 & above	43	14.8
Any previous information about domestic waste management (n=122)	Yes	122	42.1
	No	168	57.9
Source	Internet	44	36.07
	School	52	42.62
	Others	25	20.49

Knowledge and Practice Levels
Nearly half of the participants (**49.66%**) demonstrated **average knowledge** regarding domestic waste management. About **27.59%** had **good knowledge**, whereas **22.76%** had **poor knowledge**.

In terms of practices, the majority (**55.17%**) exhibited **average**

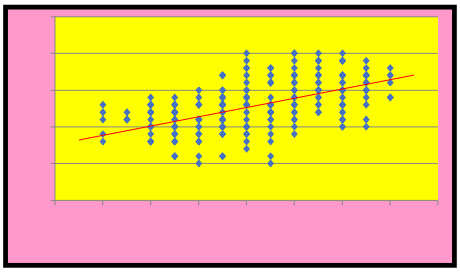
practice, followed by **39.66%** with **good practice**, and only **5.17%** with **poor practice** as shown in table 3.

Table 3: Description of the knowledge score and Practice score regarding domestic waste management among housewives in study group

Knowledge score	No of cases	Percentage
0 – 5 (Poor)	66	22.76
6 – 10 (Average)	144	49.66
11 – 15 (Good)	80	27.59
Total	290	100
Practice Score	No of cases	Percentage
0-6 (poor)	15	5.17
7-13 (average)	160	55.17
14-20 (Good)	115	39.66
Total	290	100

A **positive correlation** was observed between knowledge and practice scores. The correlation coefficient (**r = +0.55**) indicated a **moderate to strong positive relationship**, which was found to be **statistically significant (p < 0.0001)**. This suggests that higher knowledge levels were associated with better waste management practices among participants a depicted in figure 1.

Figure 1: Scatter Plot showing correlation between knowledge and practice score



The association between age and knowledge regarding domestic waste management revealed that the mean knowledge score was highest among participants in the 21–30 years age group (8.75 ± 3.155), followed by those aged 31–40 years (7.91 ± 2.995), less than 20 years (7.77 ± 2.891), and 41–50 years (7.66 ± 2.893). However, the association between age and knowledge score was not found to be statistically significant (F = 2.22, p = 0.086).

Similarly, the association between educational status and knowledge regarding domestic waste management showed that the mean knowledge score was highest among participants who were graduates and above (9.09 ± 2.915), followed by those with higher secondary (8.04 ± 3.007), secondary (8.00 ± 3.195), and primary education (7.31 ± 3.093). However, the association between education and knowledge score was not found to be statistically significant (F = 2.45, p = 0.064).
The association between dietary pattern and knowledge regarding domestic waste management revealed that the mean knowledge score was highest among vegetarians (8.89 ± 3.345), followed by participants consuming a mixed diet (8.29 ± 3.025) and non-vegetarians (7.58 ± 2.834). A statistically significant association was observed between diet and knowledge score (F = 3.04, p = 0.049) which is indicated below in table 4

Table No 4: Association of knowledge score according to diet in study group

Diet	Knowledge score			F Value	P Value
	n	Mean	SD		
Vegetarian	56	8.89	3.345	3.04	0.049
Non-vegetarian	74	7.58	2.843		
Mixed	160	8.29	3.025		

The association between family income and knowledge regarding domestic waste management indicated that the mean knowledge score increased with rising income levels, with the highest mean score observed among participants with a monthly income of 61663–123321 (9.65 ± 2.481). The association between family income and knowledge score was found to be statistically significant (F = 3.84, p = 0.001). as depicted in table 5.

Table No 5: Association of Practice score according to total income of family in study group

Total income of family (Rs)		Knowledge score		F Value	P Value
	n	Mean	SD	3.84	0.001
<6174	55	7.04	2.835		
6175 – 18496	52	7.73	2.787		
18497 – 30830	39	7.92	2.823		
30831 – 46128	37	8.73	3.015		
46129 – 61662	38	9.34	3.224		
61663 – 123321	26	9.65	2.481		
123322 & above	43	8.35	3.498		

Similarly, participants with prior knowledge had a higher mean knowledge score (**9.01 ± 3.205**) compared to those without prior knowledge (**7.66 ± 2.839**). This association was found to be **highly statistically significant** (Z = 3.71, p < 0.0001 as shown in Table 6

Table No 6: Association of knowledge score according to any previous information about domestic waste management in study group

Any previous information	Knowledge score			MW test Z Value	P
	n	Mean	SD		
Yes	122	9.01	3.205	3.71	<0.0001
No	168	7.66	2.839		

DISCUSSION:

The present study assessed the knowledge and practices regarding domestic waste management among housewives and explored their association with selected socio-demographic variables.
In the present study, the majority of participants belonged to the 21–30 years age group, with very few participants below 20 years of age. These findings are consistent with the study conducted by Anit V John et al., which also reported a lower proportion of participants in the younger age group and a higher concentration in the 21–40 years category (16). However, contrasting findings were reported by Madhuri Shelke, where a higher proportion of participants were below 20 years of age (17).
With respect to religion, the present study reported a higher proportion of Muslim participants, followed by Hindus. In contrast, Sanasam Gomati Chanu et al. reported a predominance of Hindu participants in their study (6).
The educational status of participants in the present study showed that the majority had completed higher secondary education. Similar findings were reported by Widad Fadhullah et al., where most participants had secondary and higher secondary education (18). However, contradictory findings were observed in the study by Sanasam Gomati Chanu et al., where a larger proportion had only primary education (6).
The present study found that most participants followed a mixed diet. This finding differs from the study conducted by Madhuri Shelke, where the majority were non-vegetarians (17). These differences again highlight the influence of regional and cultural factors.
Regarding knowledge levels, the present study are in agreement with studies conducted by R Padma Hepsiba and Sandeep Chouhan and Anita Nawale, which also reported that most participants had moderate knowledge levels (19).
The findings of the present study indicated that most participants had average practice regarding domestic waste management, followed by good practice, with very few exhibiting poor practices.
A statistically significant positive correlation was observed between knowledge and practice in the present study. Similar findings were reported by Madhuri Shelke indicating that increased knowledge is associated with better practices (17). However, Sanasam Gomati Chanu et al. reported a non-significant correlation despite a positive trend (6).
The present study found significant associations between knowledge and certain socio-demographic variables such as family income, diet, and prior information. These findings are partially supported by Anit V John et al., who also reported no association between knowledge and age or education (16).
Overall, the findings of the present study suggest that although housewives possess moderate knowledge and practices regarding domestic waste management, there is still considerable scope for improvement. The observed association between knowledge and practice emphasizes the need for targeted educational interventions.

Strengthening awareness programs and ensuring their effective implementation may help bridge the gap between knowledge and practice at the household level.

CONCLUSION:

The present study concludes that the majority of housewives possessed **average knowledge and practices** regarding domestic waste management. Although a considerable proportion demonstrated good knowledge and practices, a notable gap still exists, particularly among those with poor scores.

A **statistically significant positive correlation** between knowledge and practice indicates that improvement in knowledge can lead to better waste management practices at the household level. However, knowledge alone may not be sufficient, as practices are also influenced by socio-demographic factors.

The study further identified that variables such as **family income, diet, and prior information** were significantly associated with knowledge, while **religion, income, and prior knowledge** showed significant association with practices. No significant association was observed with variables like age and education in most cases.

These findings highlight the need for **targeted educational interventions** to enhance both knowledge and practices among housewives. The development and use of **information booklets and community-based awareness programs** can serve as effective tools in improving domestic waste management at the grassroots level.

Overall, strengthening awareness, improving accessibility to waste management resources, and promoting behavioral change are essential for achieving sustainable domestic waste management practices.

REFERENCES:

1. United Nations [Internet]. Available https://www.un.org/en/observances/environment-day/message 3. from:
2. World Bank. *What a Waste 2.0: A Global Snapshot of Solid Waste Management*. 2018.
3. CPCB. *Annual Report on Municipal Solid Waste Management in India*. Latest available (2019/2020)
4. Laor P, Suma Y, Keawdounglek V, Hongtong A, Apidechkul T, Pasukphun N. Knowledge, attitude and practice of municipal solid waste management among highland residents in Northern Thailand. J Heal Res. 141 2018;32(2):123–31.
5. Suthar S, Singh P. Household solid waste generation and composition in different family size and socio-economic groups: A case study. Sustain Cities Soc. 2015 Feb 1;14(1):56–63.
6. Chanu SG, Bhuyan H, Dutta A. A study to assess the Knowledge and Practices on Household Waste Management among the Slum Dwellers of Kamrup Metro ,. 2021;10(4):1–9
7. Shelke M. A study to assess the knowledge and practices of household waste management among housewives in selected urban areas of Pune city with a view to develop an information booklet. 2019;5(1):110–4
8. World Bank. *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*. Washington, DC; 2018
9. Ferronato N, Torretta V. Waste mismanagement in developing countries: A review of global issues. *Int J Environ Res Public Health*. 2019.
10. Gupta N, Yadav KK, Kumar V. A review on current status of municipal solid waste management in India. J Environ Sci (China). 2015;37:206 17.
11. Kumar S, Smith SR, Fowler G, Velis C, Kumar SJ, Arya S, et al. Challenges and opportunities associated with waste management in India. R Soc Open Sci. 2017;4(3).
12. Suthar S, Singh P. Household solid waste generation and composition in different family size and socio-economic groups: A case study. Sustain Cities Soc. 2015 Feb 1;14(1):56–63
13. Guerrero LA, Maas G, Hogland W. Solid waste management challenges for cities in developing countries. *Waste Management*. 2013.
14. Reddy VR, Galab S. *An analysis of urban solid waste management in India: A case study of Hyderabad.* Hyderabad: Centre for Economic and Social Studies; 2006.
15. Sharma SK. *Nursing Research and Statistics.* 3rd ed. New Delhi: Elsevier; 2018.
16. Anit V John, Monali Chaskar, Durga Das, Tejasvi Davne, Srikant Gadhave KK. assess knowlegde and practice about waste management in people. community public Heal Nurs. 2017;02(aug):30693–5.
17. Shelke M. A study to assess the knowledge and practices of household waste management among housewives in selected urban areas of Pune city with a view to develop an information booklet. 2019;5(1):110–4.
18. Fadhullah W, Imran NIN, Ismail SNS, Jaafar MH, Abdullah H. Household solid waste management practices and perceptions among residents in the East Coast of Malaysia. BMC Public Health [Internet]. 2022;22(1):1–20. Available from: https://doi.org/10.1186/s12889-021 12274-7
19. Hepsiba RP, Nair P, Krishna A, Jose CR, Chauhan K, Thomas N, et al. A Descriptive Study to Assess the Knwoledge and Pratice Regarding Domestic Waste Management among Households in a Selected Urban Community. J Nurs Pract Res. 2022;2(1):44–6.
20. Kaithery NN, Karunakaran U. Study on attitude of household waste management in a rural area of Northern Kerala. Int J Community Med Public Heal. 2019;6(5):2095.
21. Afroz R, Hanaki K, Hasegawa-Kurisu K. Willingness to pay for improved solid waste management in Dhaka city, Bangladesh. *J Environ Manage*. 2009;90(1):492–503.
22. Nawale SC and A. to assess the knowledge regarding domestic waste management and its effect on health among home makers. Int J Recent 138 Sci Res. 2018;09(June).