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ASSESSMENT OF MOTHERS KNOWLEDGE AND PRACTICES RELATED TO DOMESTIC WASTE MANAGEMENT IN A SELECTED COMMUNITY OF AIZAWL, MIZORAM.

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ABSTRACT

Domestic waste management plays an important role in protecting both the environment and public health, especially at the household level where most waste is generated and handled daily. Mothers are often the primary caregivers in families and play a key role in managing household waste. The present study assessment of mothers knowledge and practices related to domestic waste management in a selected community of Aizawl, Mizoram was conducted to assess their knowledge and practices related to domestic waste management and to find out whether these were associated with selected demographic variables. A quantitative approach with a descriptive research design was used for the study. It was conducted in Chaltlang Lily Veng, Aizawl, among 20 mothers selected through purposive sampling. Data were collected using a structured questionnaire that included socio-demographic details along with tools to assess knowledge and practices related to domestic waste management. The data were analyzed using descriptive and inferential statistics with SPSS version 20. The findings showed that most of the mothers were in the age group of 51–60 years and the majority belonged to nuclear families. In terms of knowledge, most mothers (90%) had adequate knowledge, while a small proportion (10%) had moderate knowledge. None of them had inadequate knowledge. Regarding practice, 65% of the mothers had adequate practice and 35% had moderate practice. Statistical analysis showed that there was no significant association between knowledge and practice scores and the selected demographic variables. Therefore, the study found that most mothers had adequate knowledge and adequate practices related to domestic waste management. However, a few still needed improvement. Since no strong link was found between demographic factors and their knowledge or practices, it suggests that awareness may be influenced more by general exposure and community-level factors. The study highlights the importance of continuing education and awareness programmes to further strengthen safe and effective household waste management.

Keywords: Mothers, knowledge, practice, domestic waste management, community.

INTRODUCTION

Waste is anything that is not used by its owner and is thrown away or discarded. The collection, transportation, management, monitoring, processing and disposal of different waste materials are all considered aspects of waste management. Effective waste management entails focusing on environmental sustainability rather than just disposing of collected waste in landfills or junk yards.^[1]

Our family's health depends on the cleanliness and hygienic conditions of our home. The first place to start waste management is at home. However, basic disposal of waste practices are frequently overlooked.^[2] Globally, the population is growing, particularly in developing nations. In the same way, this expanding population is producing more household waste. Globally, there are very few facilities for handling this waste, particularly in developing nations.^[3]

Significant increases in waste production brought about by rapid urbanization present difficulties for waste collection, sorting, and final disposal, particularly in developing countries like India.^[4] Poor waste disposal techniques contribute to pollution, which impacts the quality of the soil, water, and air, and improper household waste management has detrimental effects on the environment. Inadequate waste management can increase the growth of pathogens and pests, which can lead to health problems like infections, gastrointestinal disorders, and respiratory disorders. This may have a significant impact on biodiversity and ecosystems. On the other hand, waste can be utilized for a variety of purposes, such as producing fertilizers, biogas, manures, etc., and it can prevent social annoyance if it is properly treated.^[5]

India's fast urbanization, population expansion, and shifting consumption habits have made waste management a major concern. The country currently produces 62–72 million tonnes of municipal solid waste annually; however, due to rapid urbanization, economic growth, and shifting consumption patterns, it is predicted that this amount could sharply rise to 125–165 million tonnes by 2031–2030.^[6]

Proper domestic waste management is essential for maintaining environmental cleanliness and protecting public health. Mothers play a key role in household waste handling and disposal practices, making them important contributors to effective waste management at the family level. However, limited evidence is available regarding the knowledge and practices of mothers related to domestic waste management in Mizoram. This lack of local data highlights the need for further investigation. Therefore, the present study was conducted to assess the mothers knowledge and practices related to domestic waste management in a selected community of Aizawl, Mizoram. The findings may help identify existing gaps and support the development of appropriate educational and community-based interventions.

OBJECTIVES OF THE STUDY

1. To determine the mothers knowledge related to domestic waste management in a selected community.
2. To determine the practices of mothers related to domestic waste management in a selected community.
3. To examine the association between knowledge related to domestic waste management and selected demographic variables among mothers in a selected community.
4. To examine the association between domestic waste management practices and selected demographic variables among mothers in a selected community

MATERIAL AND METHODS

The present study employed a quantitative research approach with a descriptive research design to assess mothers' knowledge and practices related to domestic waste management in Chaltlang Lily Veng, Aizawl. The study population comprised mothers residing in the selected community, and a sample of 20 mothers was selected using a purposive sampling technique. Data were collected using a socio-demographic proforma and a self-structured questionnaire to assess knowledge and practices related to domestic waste management among mothers. The reliability of the tool was assessed using Cronbach's alpha. The knowledge section obtained a reliability coefficient of 0.740, while the practice section obtained 0.761. Since both values exceeded 0.70, the tool was considered reliable and showed good internal consistency.

Prior to data collection, formal permission was obtained from the Chairman of the Local Council, Chaltlang Lily Veng, Aizawl. Participants who met the sampling criteria were approached and selected for the study. The purpose and objectives of the study were explained to each participant, and written informed consent was obtained before data collection. Participants were assured that their participation was voluntary and that all information provided would be kept confidential and used solely for research purposes. The questionnaires were administered to the participants, and the researcher remained available to provide clarification and assistance whenever necessary. Each participant required approximately 15–20 minutes to complete the questionnaire. After the completion of data collection, the responses were checked for completeness and systematically entered for analysis. The data were analyzed using IBM SPSS Statistics version 20. Descriptive statistics, including frequency and percentage were used to present the socio-demographic profile of the mothers and their levels of knowledge and practices related to domestic waste management. Inferential statistics was employed to examine the relationship between selected socio-demographic variables and the knowledge and practice scores of the participants. Statistical significance was determined at a p-value of less than 0.05.

RESULTS AND DISCUSSION

Table 1 : Frequency and Percentage distribution of demographic variables

n = 20

Variables	Frequency (f)	Percentage (%)
Age		
21 – 30	5	25
31 – 40	3	15
41 – 50	5	25
51 – 60	7	35
Educational Qualification		
Primary school	0	0
Middle school	0	0
High school	7	35
Higher secondary	6	30
Graduate and above	7	35
Occupation		
Government service	4	20
Private service	3	15
Self employed	4	20
Retired	1	5
Homemaker	8	40
Types of family		
Nuclear family	19	95
Joint family	1	5
Extended family	0	0
Socio – Economic Class		
Upper Class	0	0
Upper middle Class	16	80
Lower Middle Class	4	20
Upper Lower Class	0	0
Lower Class	0	0

The above table 1 shows that most of the mothers (35%) were aged 51–60 years. Equal numbers of mothers (25% each) were in the 21–30 years and 41–50 years age groups, while 15% were 31–40 years old. Regarding education, 7 mothers (35%) had studied up to high school, 6 (30%) had completed higher secondary, and 7 (35%) were graduates or above. None had only primary or middle school education. In terms of occupation, 8 mothers (40%) were homemakers, 4 (20%) worked in government jobs, 4 (20%) were self-employed, 3 (15%) worked in private jobs, and 1 (5%) was retired. Most mothers (19; 95%) lived in nuclear families, while 1 mother (5%) lived in a joint family. None lived in extended families. With respect to socio-economic status, 16 mothers (80%) were from the upper middle class, and 4 (20%) were from the lower middle class, with no mothers in the upper, upper-lower, or lower classes.

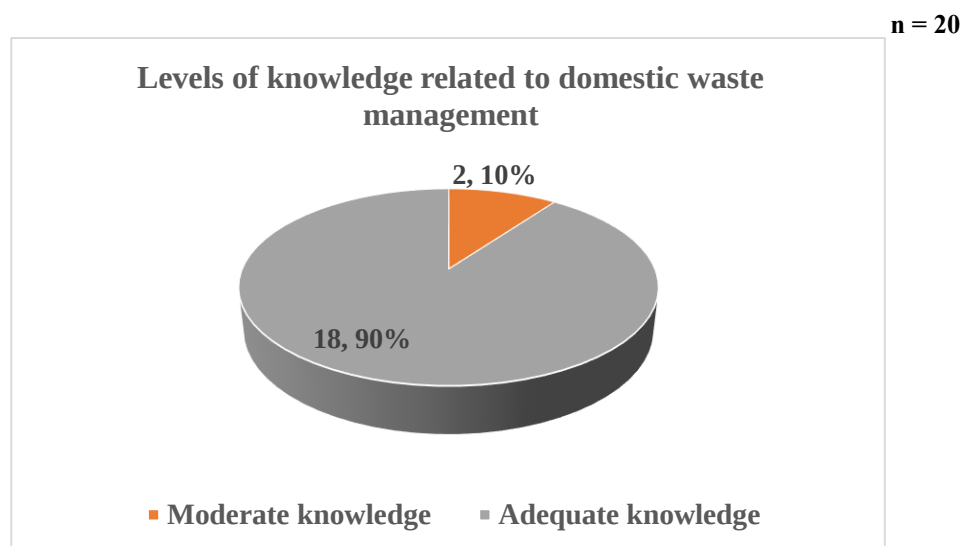


Figure 1 : Pie chart showing frequency and percentage distribution of levels of knowledge related to domestic waste management.

The Fig.1 shows the level of knowledge regarding domestic waste management among mothers in the selected community. Out of 20 mothers, the majority (18, 90%) had adequate knowledge, while only 2 mothers (10%) had moderate knowledge. None of the mothers had inadequate knowledge.

This indicates that most of the mothers are having good knowledge about domestic waste management, although a small number still need some improvement.

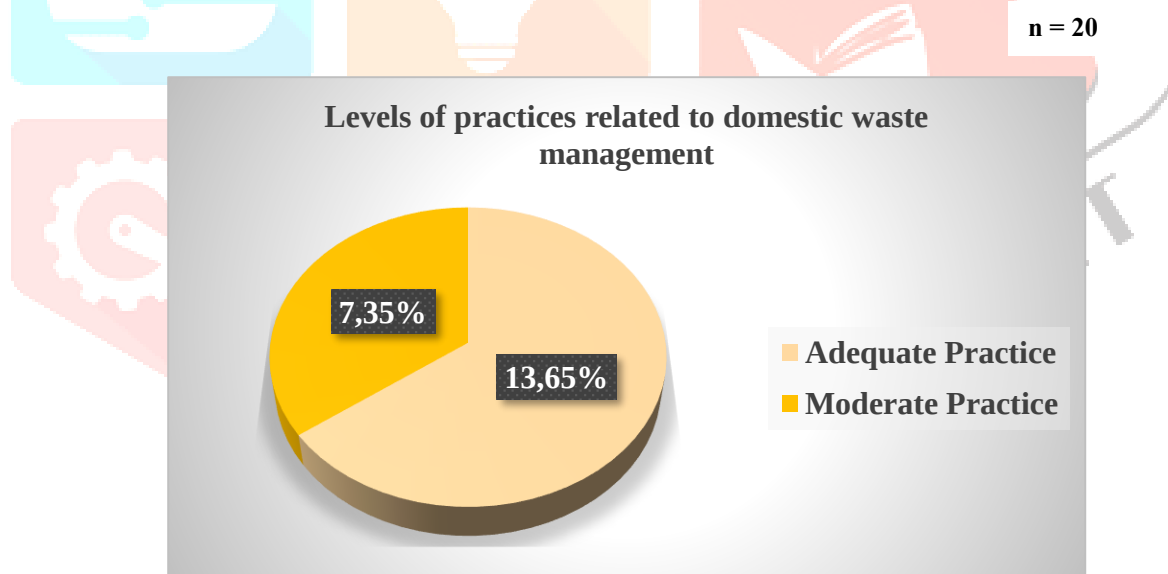


Figure 2 : Pie chart showing frequency and percentage distribution of levels of practices related to domestic waste management.

The Fig. 2 shows the level of practice of mothers related to domestic waste management. Most of the mothers, 13 (65%), had adequate practice. Seven mothers (35%) had moderate practice. None of the mothers (0%) had inadequate practice. Overall, the results show that most mothers are managing waste properly, but some still need more guidance and awareness to reach the best level of practice.

Table 4 : Fisher's exact test of association between knowledge scores of mothers with demographic variables

S.No	Demographic Variables	Knowledge Score			Fisher's Exact Test (p-value)
		Inadequate	Moderate	Adequate	
1	Age (In Years)				1
	21 – 30	0	1	4	
	31 – 40	0	0	3	
	41 – 50	0	0	5	
	51 – 60	0	1	6	
2	Educational Qualification				0.742
	Primary school	0	0	0	
	Middle school	0	0	0	
	High school	0	1	6	
	Higher secondary	0	1	5	
	Graduate and above	0	0	7	
3	Occupation				1
	Government service	0	0	4	
	Private service	0	0	3	
	Self employed	0	1	3	
	Retired	0	0	1	
	Homemaker	0	1	7	
4	Types of family				0.900
	Nuclear family	0	2	17	
	Joint family	0	0	1	
	Extended family	0	0	0	
5	Socio – Economic Class				0.632
	Upper Class	0	0	0	
	Upper middle	0	2	14	
	Lower Middle	0	0	4	
	Upper Lower	0	0	0	
	Lower Class	0	0	0	

The association between knowledge scores on domestic waste management and selected demographic variables was analyzed using Fisher's Exact Test, as the expected cell frequencies in the contingency tables were less than five, making the Chi-square test inappropriate. The analysis revealed that there was no statistically significant association between knowledge scores and any of the selected demographic variables, including age, educational qualification, occupation, type of family, and socio-economic status ($p > 0.05$). With regard to age, although the majority of respondents across all age groups demonstrated adequate knowledge, the association was not statistically significant ($p = 1.000$). Similarly, educational qualification did not show a significant relationship with knowledge levels ($p = 0.742$), despite a higher

proportion of adequately knowledgeable participants among those with higher education. In terms of occupation, most respondents across different occupational categories exhibited adequate knowledge, and no significant association was observed ($p = 1.000$). Likewise, type of family showed no significant relationship with knowledge scores ($p = 0.900$), even though most participants belonged to nuclear families with adequate knowledge levels. Furthermore, socio-economic status was not significantly associated with knowledge scores ($p = 0.632$), although a larger proportion of respondents from the upper middle class demonstrated adequate knowledge.

Overall, the findings indicate that knowledge regarding domestic waste management among mothers was relatively consistent across different demographic groups. The lack of significant associations suggests that knowledge levels may be influenced by factors other than the selected demographic variables, such as community awareness programs, media exposure, or local environmental initiatives.

Table 4 : Fisher's exact test of association between practice scores of mothers with demographic variables

S.No	Demographic Variables	Practice Score			Fisher's Exact Test (p-value)
		Inadequate	Moderate	Adequate	
1	Age (In Years)				0.919
	21 – 30	0	1	4	
	31 – 40	0	1	2	
	41 – 50	0	2	3	
	51 – 60	0	3	4	
2	Educational Qualification				0.602
	Primary school	0	0	0	
	Middle school	0	0	0	
	High school	0	3	4	
	Higher secondary	0	1	5	
	Graduate and above	0	3	4	
3	Occupation				0.173
	Government service	0	2	2	
	Private service	0	2	1	
	Self employed	0	0	4	
	Retired	0	1	0	
	Homemaker	0	2	6	
4	Types of family				0.350
	Nuclear family	0	6	13	
	Joint family	0	1	0	
	Extended family	0	0	0	
5	Socio – Economic Class				0.587
	Upper Class	0	0	0	
	Upper middle	0	5	11	
	Lower Middle	0	2	2	
	Upper Lower	0	0	0	

	Lower Class	0	0	0	
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The table shows the association between practice scores and selected demographic variables among mothers in the selected community of Aizawl, Mizoram. Fisher's exact test was used to assess statistical significance. The findings indicate that there was no statistically significant association ($p > 0.05$) between practice scores and any of the selected demographic variables, including age, educational qualification, occupation, type of family, and socio-economic class. With regard to age, the majority of mothers across all age groups demonstrated adequate practice; however, the association was not significant ($p = 0.919$). Similarly, educational qualification showed no significant relationship with practice scores ($p = 0.602$), even though adequate practice was more commonly observed among mothers with higher secondary and graduate-level education. In terms of occupation, homemakers and self-employed mothers appeared to have relatively higher adequate practice compared to other groups, but this difference was not statistically significant ($p = 0.173$). Likewise, most mothers from nuclear families demonstrated adequate practice, yet no significant association was found ($p = 0.350$). Regarding socio-economic status, mothers belonging to the upper middle class showed a higher proportion of adequate practice; however, the association between socio-economic class and practice score was not statistically significant ($p = 0.587$).

Furthermore, the analysis suggests that practice of domestic waste management among mothers was not significantly influenced by the selected demographic variables, indicating that other factors may contribute to their practice levels.

DISCUSSION

The discussion section interprets the findings of the present study and relates them to results reported in similar studies carried out in various settings.

In the present study, majority of mothers (90%) had adequate knowledge, while 10% had moderate knowledge. None of the respondents had inadequate knowledge.

The findings of the present study was supported by Chitra et al. in a descriptive study conducted in rural areas of Puducherry, where 76% of housewives had adequate knowledge, 20% had moderate knowledge, and 4% had inadequate knowledge regarding domestic waste management.^[7]

The present study shows a difference when compared with the study conducted by Priya Gill, which examined the knowledge and attitude of housewives regarding household waste management in a selected urban area of Himachal Pradesh. The study reported that most participants (77%) had moderate knowledge, followed by 13% with adequate knowledge and 10% with inadequate knowledge. In contrast, the current study found that the majority of mothers had adequate knowledge about domestic waste management. This variation may be explained by differences in educational level, exposure to awareness programmes, and variations in access to environmental health information between the study settings.^[5]

In the present study, majority of the mothers 65% had adequate practice and 35% had moderate practice, with none demonstrating inadequate practice.

The present study findings was supported by a cross-sectional study conducted by Ori K et al. in the urban field practice area of GIMS, Kalaburagi, which assessed knowledge and practice of domestic waste management among households. The study reported that 68.8% had adequate practice regarding domestic waste management.^[4] These findings are closely consistent with the present study, Similarly, both studies indicate that the majority of respondents possess satisfactory levels of practice in domestic waste management, and poor practice is minimal or absent.

The present analysis of association between knowledge scores and selected demographic variables indicated that there was no statistically significant association between knowledge scores and age, educational qualification, occupation, type of family, or socio-economic status ($p > 0.05$).

The present study findings was supported by Ori K et al. in the urban field practice area of GIMS, Kalaburagi, which assessed knowledge and practice of domestic waste management among households, where demographic variables such as age, family and socio economic status were also found no significant relationship with knowledge levels.^[4]

The current study demonstrated that there was no significant association between practice scores and selected demographic factors, including age, educational level, occupation, family type, and socio-economic status ($p > 0.05$). A similar pattern was observed in a study by Madhushree P. and Mable Baptist conducted among households in a rural area of Mangaluru, where demographic variables such as age, educational qualification, occupation, income, and family type were also found to have no significant relationship with practice levels.^[8]

In the same way, the present findings suggest that domestic waste management practices are not strongly influenced by socio-demographic characteristics. This may indicate that such practices are more likely shaped by general awareness, environmental conditions, and community-based initiatives rather than individual background factors. Therefore, strengthening universal health education and promoting community-wide awareness programmes may be more effective than targeting specific demographic groups alone.

RECOMMENDATIONS

- The study can be replicated on a larger sample to make the findings more generalizable.
- Future investigations can include participants from varied population groups to obtain a more comprehensive understanding.
- The scope of the study can be broadened by conducting it in multiple communities to improve representativeness of the results.
- Comparative studies can be undertaken between urban and rural settings to examine variations in knowledge and practice related to domestic waste management.

CONCLUSION

The present study assessed the mothers knowledge and practices related to domestic waste management in a selected community of Aizawl, Mizoram. The findings indicated that most of the mothers had adequate knowledge and generally good practices in relation to domestic waste management. A small proportion of respondents, however, showed only moderate levels of knowledge and practice, suggesting the need for further improvement. The study also revealed that there was no significant association between knowledge and practice scores with selected socio-demographic variables. This indicates that knowledge and practices related to domestic waste management were relatively consistent across different age groups, educational levels, occupations, family types, and socio-economic backgrounds. Therefore, the study concludes that while the situation is satisfactory in terms of knowledge and practices, continuous education and awareness programmes are necessary to further strengthen and sustain proper domestic waste management practices among mothers in the community.

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CONFLICT OF INTEREST

The authors declare no conflict of interests.

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