

Assessment of Knowledge, Attitude and Practice of Segregation and Disposal of Solid Waste at Household Level in a Suburban Area of Chennai

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Abstract:-

➤ Introduction

Solid waste is a by product of human activities. These can be classified according to their use their physical nature and their composition. Due to urbanization and changing lifestyles and increase in human population, this has lead to rapid generation of human solid wastes. The government although responsible for this cannot do this altogether because of lack of infrastructure. So in many countries people have started participating in the segregation of wastes.

➤ Aim and Objective

To assess the knowledge attitude and practice of segregation and disposal of solid wastes at the household level and perceived impact of plastic ban on the society in a suburban township in Chennai

➤ Materials and Methods

A cross sectional study was conducted among the households of suburban population in Avadi municipal area. 10 out of 48 wards of Avadi were randomly selected and 30 households from each ward were included in the study. Data was collected by interviewing the head of family using a structured questionnaire. Data was entered in MS excel and was analysed.

➤ Results

From the study 63% of the head of the family had higher education(above 12 grade) . 33% were professionals. 95% lived in a nuclear family. 99% had good knowledge on the segregation and disposal of wastes. 90% gained the knowledge of segregation of wastes at the household level from the social media. But only 66% of them has a good practice score. Among those who practised, 80% had the practise of segregation of the wastes in different coloured bins. 36% had practise of preparing manure pit. 21% of the people burn plastics. 74% of the people were aware of the plastic ban .

➤ Conclusion

The study clearly depicts that even though the people had knowledge on segregation of the wastes many did not practice the segregation of the wastes.

I. INTRODUCTION

The product of human and animal activities results in the generation of solid waste ⁽¹⁾. These can be classified in terms of their original use, the material, their physical properties, their origin and safety parameters. Due to urbanization and the increasing standards of the modern people and a rise in the population have led to increased generation of solid wastes in the environment. The total municipal solid wastes generated in urban india alone has been estimated to be 64 million tons per year⁽²⁾. In india an individual produces an average of 0.8kg/waste/person daily⁽³⁾. So this has led to a most challenging problem in the today'sworld. The government however who is responsible for this situation due to lack of infrastructure and financial hardships can't do this alone altogether. So in many countries the community have participated and made a drastic change in the process of disposing the solid wastes even starting at the household level. Even for recycling the wastes the process of separation has to be done.

The purpose of this research is to access the knowledge, attitude and practise of the households in segregation and disposal of the wastes at their level and also the knowledge and practise of recycling. This study looks at the characteristics that are related to waste separation activities. Another important objective of this study is to know the awareness of the plastic ban on the lives of the people and whether they accept this current ban and also thinks that the current plan would benefit for the betterment of the society.

II. METHODOLOGY

A cross sectional study was done from march 2019 to June 2019. The study area is AVADI(municipal area) with a area of 39km² with a population of 345,996.It has totally 48 wards. The data for the study was collected from 300 households in AVADI. According to the formula $4pq/l^2$ where $p = 51.3$, $q= 100-p$ and $l= 20\%$ of p the sample size is 150. From reference ^[4]. The sampling effect is 2 , so the final sample size was 300. Cluster sampling was done and 6 wards out of the 48 wards were selected randomly and out of that 6 wards 50 houses were selected randomly by applying PROBABILITY PROPOTIONAL SIZE (PPS) . A structured questionnaire was used to collect the information. The questionnaire was designed in such a

way as it covered questions related to knowledge such as - have you heard about the term segregation and do you and your family members have a knowledge about the bio and non biodegradable wastes. Attitude questions such as- do you feel that streets should be clean and free of solid wastes and - have you ever thought of solid waste segregation at home. Practise questions such as - do you burn the plastics , do you practise segregation of the wastes. And questions on the awareness of the plastic ban such as are you aware of this plan and are you happy with is action. And also the questionnaire had some basic demographic questions. All individuals who took part in this study were included and those who were not willing to take part were excluded. A set of questions were used to assess the knowledge, attitude and practice and scores were awarded to each household.

III. RESULTS

➤ *A total of 300 households were included in the study.*

The demographic and sociodemographic profile of the study population from table 1 shows that among the 300 households 61% had higher education(12 grade and above) 95% of the people lived in nuclear family and only 5% of the people lived in joint family. 100 out of 300 people about 33% were professionals. This depicts the good education status of the locality. 98% of the people had the knowledge of segregation of the household wastes from social media and only 2% of the people from other sources.

As the purpose of the study is to assess the knowledge attitude and practice of segregation and disposal of wastes at the household level separate scores were given each to knowledge attitude and practice. 6 questions in each knowledge attitude and practice were taken for awarding the scores. The scores were entered in ms excel and analysed. Good corresponds to 6, intermediate corresponds to 5 and 4 and poor score corresponds to 3 and below. Every household was taken as a unit and the scores were awarded.

99% of the people had good knowledge about the segregation and disposal of the wastes which is seen from the table 2. It is seen from table 2 that the practice and attitude scores were less when compared to their knowledge. This clearly depicts that the people of the locality even though they have good knowledge they aren't practicing the segregation and disposal of the household wastes.

36% of the people prepare manure pit in their homes as depicted from the table 3. This idea of manure pit reduces the amount of the solid waste generated and also this would serve as a manure for the plants grown in their homes. 28 % of the people burn plastics which is not good for the environment.

A separate set of questions were asked to know the awareness of plastic ban which was implemented in the current year 2019. 224 out of the 300 households did not face any difficulty in their daily lives do the implementation of the plastic ban.

Education of head of family	Frequency(n=300)	Percentage
Primary	14	4.6%
Secondary	102	34%
Higher	184	61.3%
Type of family		
Nuclear	286	95.5%
Joint	14	4.7%
Occupation		
Professional	100	33.3%
Sem iprofessional	50	16.7%
Skilled	60	20%
unskilled	80	26.6%

Table 1:- Basic Demographic Details

	Frequency(n=300)	Percentage
Knowledge		
Good	297	99%
Intermediate	2	0.5%
Low	1	0.5%
Attitude score		
Good	140	46.6%
Intermediate	152	50.67%
Low	8	2.6%
Practice score		
Good	198	66%
Intermediate	67	22.33%
Low	35	11.6%

Table 2:- Level of knowledge, attitude and practice regarding solid waste disposal

	Frequency	Percentage
Practice Segregation of wastes	290	96.6%
Yes	10	3.2%
No		
Do you segregate in different bins	242	80.6%
Yes	58	19.4%
No		
Come and collect waste	227	75.6%
Yes	73	24.33%
No		
Do you Prepare manure pit	108	36%
Yes	192	64%
No		
Do you Burn plastics	85	28.3%
Yes	215	71.67%
No		
Do you sell old bottles to scrap	84	28%
Yes	216	72%
No		

Table 3:- Practice of solid waste disposal in households

	Frequency	Percentage
Aware of this ban		
Yes	222	74%
No	78	26%
Difficulties in your daily lives		
Yes	76	25.33%
No	224	75.7%

Table 4:- Awareness of plastic ban

IV. DISCUSSION

From this study we have accessed the attitude, knowledge and practice of segregation and disposal of wastes at the household level. Many had the knowledge about the segregation of the wastes from social media. This is similar the study done in Gandhi nagar ⁽⁴⁾. Also from the reference articles and comparing the results ^(4,5,6), the people of this locality had more knowledge about the waste segregation. This is very high when compared to other studies⁽⁵⁾ may be this is due to their level of education very high.(64% higher education). According to this study many had knowledge but did not practice the segregation of wastes which is similar to the study done by C.D Lincy etal ⁽⁶⁾. Many had awareness about the plastic ban from this year and many gave a welcoming response to that action. They too said that the plastic ban didn't have any major difficulty in their lives.

V. CONCLUSION

The study thus concludes that the household of the AVADI municipal corporation has a good education profile. The people of the locality have good knowledge about the segregation and disposal of the wastes. But compared to their knowledge their practice was less as it was depicted by the practice score as compared to their knowledge score. About 36% have the habit of preparing manure pit in their homes. The people of the locality were aware of the plastic ban which was implemented in the year 2019. About 75% of the people of the locality did not face any difficulty in their daily lives due to the plastic ban.

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