



## PLASTIC CARRY BAGS, USES AND MISUSES- A MICRO LEVEL PERCEPTION STUDY

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### ABSTRACT:

Plastic was first invented in 1862 and becomes an essential part in everyone's daily life. The demand for plastic commodities increases rapidly from 1.5 million tons in 1950 to 245 million tons in 2008 and the annual growth rate is nearly 9%. It seems to be one of the biggest potential growth areas in rapidly developing countries like India. Nowadays a serious problem emerges with this commodities as plastics mostly used in food packaging is practically non-degradable and takes nearly 60 to 70 decades or even more to decay. These plastics create a serious environmental pollution regarding solid waste. Today about 4% volume of total one lakh tons of solid waste generates everyday are acquired by plastics. The uncontrolled waste often finds their way to the vacant land and road side drains resulting in land degradation, soil erosion and severe water logging.

The present paper tries to relate the consciousness level among the people of using or misusing the plastic commodities, their way of disposal and the probable health impacts. About 52 local shops are surveyed selling food items in Bhatpara Municipality (ward no 24 and 25) and the interesting and expected results came out. Only 3 branded confectionary refuses to give plastic carry bags, 1 fast food selling shop gives the food item in aluminum foil and the rest 48 shops spontaneously gave the food items may it be raw or processed in the plastic carry bags. About 104 women are surveyed and their opinions are given special emphasis as women found to be powerful enough in various environmental issues. It is found that nearly 80% of women accept plastic carry bags from shops, 55% of them use it to refrigerate and store food items and almost 100% use it to dispose domestic garbage which further creates visual pollution. The health impacts found to be severe and diseases related with waterlogging, bacterial infection increased about 30% in the last two years are quite alarming according to the medical practitioners. No law can solve the problem related with this plastic carry bags until people becomes aware of it. Other healthy alternatives like use of jute bags, bio plastics should be encouraged.

**KEY WORDS:** - Conciousness, plastic carry bags, pollution.

### INTRODUCTION:

Plastic commodities have become an invariable part of our daily life as these are inexpensive, durable, strong and corrosion resistant and also light weight with high thermal and electrical insulation properties. Virgin plastics are nontoxic, but the commonly used plastic carry bags when going through the process of commercial production, mixed with various additives (the inorganic fillers such as carbon, silica) and become potentially toxic. Since its invention in 1862, plastic has been a boon to humanity, but now people using plastic carry bags are unaware of the fact that these carry bags are responsible for the overall environmental degradation. After disposal it takes almost 60 to 70 decades to decompose and sometimes the period extends to more than a million years.

The rapid growth in population and industrialization has resulted in the generation of huge quantities of waste materials including the huge amount of plastic carry bags. The improper disposal of these plastic carry bags leads to severe environmental problems like soil, air and water pollution affecting the quality of life causing severe health hazard. The insanitary management of solid waste is responsible for the outbreak of many diseases. Increasing population has made solid waste management an important issue. As per current estimate, the total quantity of Municipal Solid Waste produced in 23 metro cities in India is approximately 30000 tonnes per day. Today about 4% volume of total one lakh tonnes of solid waste generation every day are acquired by plastics. Obviously the uncontrolled waste often finds their way to the vacant land and roadside drains resulting in land degradation and severe water logging. The production of plastics has increased over the last 60 years, around 0.5 million tonnes in 1950 to over 300 million tonnes in 2015 and increasing in a rapid rate.

The present paper tries to relate the consciousness level among women of using or misusing plastic carry bags, their way of disposal and the probable health impacts. Study area is 24 and 25 no of ward of Bhatpara Municipality of Barrackpore II C D block of 24 Parganas (North) District of West Bengal. The paper deals with the domestic waste mostly the plastic carry bags which constitute about 42% of the daily solid waste of Bhatpara Municipality.

#### OBJECTIVES OF THE STUDY:

Major objectives are as follows-

- \* To assess the consciousness level among women in using first to lowest grade plastic carry bags in their life.
- \* To assess the mode of disposal of used plastic carry bags.
- \* To identify the related health hazards in the locality caused by these carry bags.
- \* To suggest measures for plastic free and eco-friendly environment.

#### DATA AND METHODS:

Data was collected from both secondary and primary sources. Secondary data was collected from publications of West Bengal Pollution Control Board, World Health Organization (WHO).

Primary data was collected by random sample survey among 104 women of different age group with different educational qualification and different occupational status. Of the surveyed women 46% are home makers, 32% are working mainly in the organized sector and 22% of them are student. The primary data is collected through a specially designed questionnaire schedule, then the data is tabulated and statistical analysis is done.

Indian philosophy designated women 'Prakriti' means nature. A mother is the best teacher for the child to make him conscious about the environment and its gradual degradation. The practical experiences among women are abundant inspite of lack of their academic qualification. In the present paper women are given the special emphasis as women found to be powerful enough to fight against those adversities. Women have enormous contribution in forest management, soil conservation, waste disposal and management and tree plantation. In many situations it is found that women took the leading role in protecting the nature and the environment.

Sl no.	No of samples	Age groups(yrs)	Educational qualification	Occupation	Acceptance of plastic carry bags from shops	Use to refrigerate	To dispose garbage
1.	23	15-25	ClassVIII to Post graduate	Student	15(65%)	06(26%)	10(43%)

2.	48	20-66	ClassVIII to Post graduate	Home maker	41(85%)	48(100%)	40(83%)
3.	12	24-37	Graduate and more	Teacher	12(100%)	12(100%)	10(83%)
4.	10	27-60	Higher secondary and more	Office worker	07(70%)	05(50%)	10(100%)
5.	06	25-45	Graduate and more	Bankers	06(100%)	06(100%)	06(100%)
6.	05	>62	Madhyamik and more	Retired	05(100%)	05(100%)	05(100%)

Source: Data collected from field survey in November, December 2016, by the author.

The table shows that inspite of their high academic qualification and better occupational status about 70 to 100% teachers, bankers and the retired aged women are using or rather misusing plastic carry bags to refrigerate food items including raw meat and raw fish and about 80% women are using the already used plastic carry bags to dispose the domestic garbages creating severe water logging problem mainly in the rainy season in the locality and creating a huge visual pollution.

An attempt is made to analyze the relationship between occupational status and acceptance of plastic carry bags from shops or from any other sources among the surveyed women.

Sl no.	Occupation	Sample no(x)	Acceptance of carry bags(y)	$X = x - \bar{x}$	$Y = y - \bar{y}$	$(x - \bar{x})^2$	$(y - \bar{y})^2$	XY
1	Students	23	15	5.66	0.66	32.0356	0.4356	3.7356
2	Home makers	48	41	30.66	26.66	940.0356	710.7556	817.3956
3	Teachers	12	12	-5.34	-2.34	28.5156	5.4756	12.4956
4	Office workers	10	07	-7.34	-7.34	53.8756	53.8756	53.8756
5	Bankers	06	06	-11.34	-8.34	128.5956	69.5556	94.5756
6	Retired	05	05	-12.34	-9.34	152.2756	87.2356	115.2556
		$\Sigma 104$	$\Sigma 86$	$\Sigma X = -0.04$	$\Sigma Y = -0.04$	$\Sigma 1335.3336$	$\Sigma 927.3336$	$\Sigma 1097.3336$

Where  $\bar{x}$  is mean of x,  $\bar{y}$  is mean of y.

Using the formula  $r = \frac{\Sigma XY}{\sqrt{(\Sigma X^2 - \Sigma Y^2)}}$

**$\sqrt{(\Sigma X^2 - \Sigma Y^2)}$  (Karl Pearson Co-relation Co-efficient)**

We get the r value of 0.986110978 which is significant enough.

The analysis clearly shows that educational qualification of the surveyed women and their perception in using plastic carry bags to dispose the daily domestic waste is quite significant as the r value is 0.986110978 and the relationship is positive. It is already defined that the surveyed women are selected randomly and of them 2 are class VIII pass, 14 are Madhyamik or class X pass, 21 are Higher Secondary or

class XII, 49 graduate, 15 post graduate and 3 of them have vocational computer training. Out of 104 women 89 (85%) uses plastic carry bags to dispose their daily domestic waste.

We know that Bivariate Analysis is one of the simplest forms of Quantitative analysis. It involves two variable (here the variables are the educational qualification of the sample and the no of the samples who dispose garbage in the plastic carry bags) and the analysis also explain the empirical relationship between the two.

Sl No.	Educational qualification	Sample Size(x)	Dispose garbage(y)
1.	Class VIII	02	01
2.	Madhyamik	14	10
3.	Higher Secondary	21	20
4.	Graduate	49	45
5.	Post Graduate	15	10
6.	Vocational Training	03	03
Total		$\sum x=104$	$\sum y=89$

**Source:** Data collected by the author in November, December 2016.

Using the co-relation coefficient formula by Bivariate Method the value of  $r=0.99389$ , which denotes a significant relationship.

The most interesting fact found in the survey that almost 45% of women are very much aware of the lethal effects and health hazards of using the plastic carry bags. It is found that the carry bag used to store raw fish and raw meat contain coli form bacteria and the hazard increases tenfold in cases of repeated use.

The surveyed women are found to throw the carry bags carelessly. Apart from the environmental degradation it creates a severe visual pollution also. In order to bring ecological balance, it is necessary to have effective management by minimizing solid waste generation and maximizing effective disposal techniques. The problem is severe in the study area due to absence of proper municipal amenities. Due to added surge of migratory population from the fringe area made the situation more haphazard and disorganized. The recycled carry bags are non bio degradable and remain intact for thousands of years without decomposition.

#### **ENVIRONMENTAL DEGRADATION AND ASSOCIATED HEALTH HAZARDS FROM PLASTIC CARRY BAGS:**

The non bio degradable used carry bags are one of the cause of the deterioration of local ecosystem. Very often waste plastics find their way into various surface water bodies hindering the re-aeration process. Plastics choke municipal sewer lines and water drains and clogs the bar screens of sewage treatment plants. Apart from these, researches show that various forms of diseases occur from this low quality no degradable plastic carry bags.

# Reuse of plastic bags increases the contamination of E-Coli bacteria in the form of urinary tract infections among women and to some extent the endocrinological disorder.

# Phthalates and BPA (Bisphenol A) common constituents in Plastic carry bags can bio accumulate in different organs and this may stimulate abnormally high estrogen level and cause cysts other than typical functional cysts to develop.

# Outbreak of norovirus induced diarrhea and nausea.

# Various researches show that more than 50% of reused plastic carry bags contain coli form bacteria. Almost 80% samples surveyed said that they keep meat, fish and vegetables in the used carry bags and store under refrigeration. It is found that the reuse of the carry bags increases the growth of bacteria tenfold. The field survey also supports the fact that the above mentioned diseases increases in the last three years. It is found from the survey that 22 no. of women had urinary tract infection among the 104 women and the

proportion is quite high. 5 women had developed polycystic ovarian syndrome (PCOS) and 25 are found to have endocrinological disorder. It is also observed that the occurrences of diseases increase in the rainy season.

### CONCLUSION:

It does not seem that we are approaching to the end of plastic age. Life in 2030 will be unrecognizable without plastic commodities. True long term solution can be seen if suitable biodegradable plastics are developed. Alternative disposal methods like recycling or incineration can be done, though it has some technical and logistic problems. Use of biodegradable polymers should be promoted. Researches prove that bio degradation of these polymers by micro bacterial activity has become possible in laboratory, though these methods are highly expensive. Other non expensive and healthy alternatives such as use of paper bags, jute bags should be encouraged. No law can solve the problem of thrown and discarded plastic carry bags until people change their habit of misusing of plastic carry bags. The problem of plastic carry bags is mostly a human created problem and its solution depends only on collective human actions and efforts. Women has to play an enormous and important role to overcome the situation. Now it is time to make the right choice. If unchecked it can be the cause of serious health hazard. It is high time to think positively and act accordingly to overcome the problem.

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