Impact of Plastic waste Pollution on Human Health and Environment

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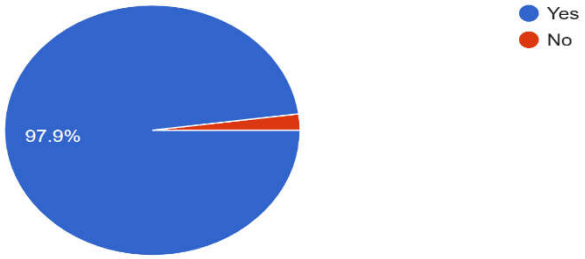
Abstract: A survey was conducted to assess the student's perspective on the impact of plastic waste pollution on human health and environment. A questionnaire consisting of relevant questions was circulated among college students of Haryana and the results were analyzed. Overall results show that plastic waste causes negative and deleterious impact on human health and environment.

Key words: Plastic pollution, survey, questionnaire, students

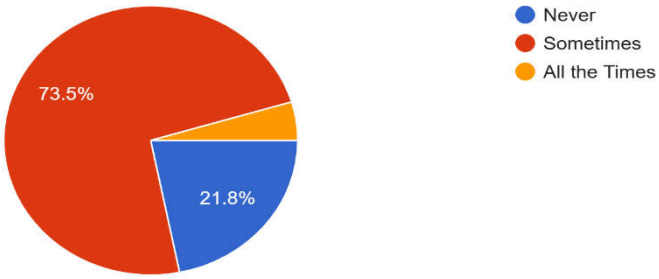
Introduction: Nowadays, Plastic pollution is the most common worldwide problem which have deleterious impact on environment and alsoadversely affect the human life, wild life and their habitat.Accumulation of plastic productsi.e.plastic bottles, bags and plastic particlescauses the plastic pollution and causes hazardous effect on land, waterways and oceans.Plastics have complex chemical composition. This makes plastic to be durable and do not break down easily (Obebe and Adamu, 2020). Plastic being inert, inexpensive,light weight, durable and easily available, is used more by humans (Reddy *et al*, 2014). These are the reason why the plastic production by humans is very high and the demand keeps on increasing day by day.The production of plastics has increased substantially over the last 60 years from around 0.5 million tonnes in 1950 to over 260 million tonnes till 2009 (Thompson *et al*, 2009). Globally, plastic production was estimated to be 380 million tonnes in 2018 (Alabi *et al*, 2019). In this paper, investigation and analysis was done on the potential consequences of the plastic waste pollution on human health and environment.

Methodology: A questionnaire consisted of 11 questions was circulated among the undergraduate students of colleges of Haryana using Google Form from 13January, 2023-31January, 2023. It restricted the multiple entries from the individual account. Participants were asked to describe how they can help in reducing the pollution caused by plastic waste. The data was collected from the questionnaire and analyzed using Microsoft Excel.

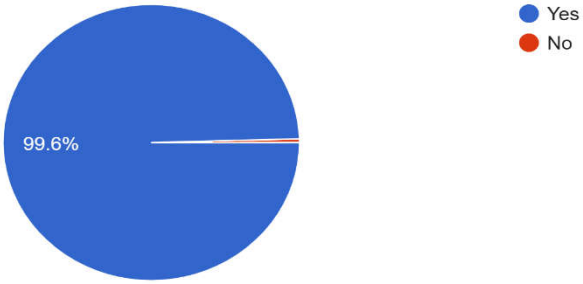
1. Do you Know what Plastic pollution is?
238 responses



2. How often do you buy things made of plastic (Plastic bags, plastic bottles etc.)?
238 responses



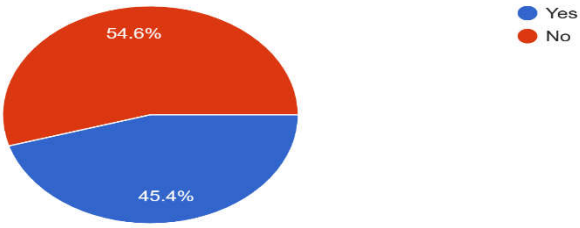
3. Do you think plastic waste is a problem for human health and environment?
238 responses



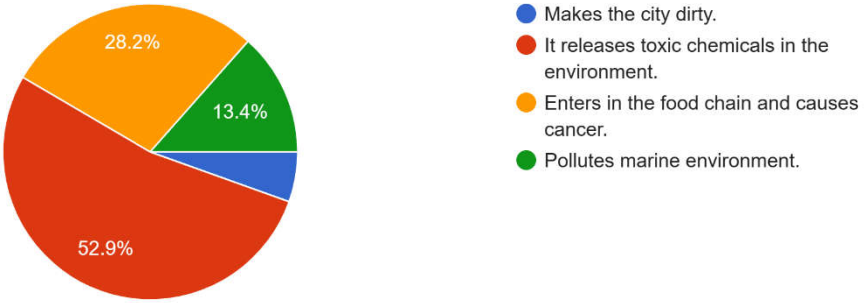
4. Why do you prefer using plastic products?
238 responses

5. How often do you help in reducing plastic pollution?
238 responses

6. Do you think all kind of plastics can be recycled?
238 responses

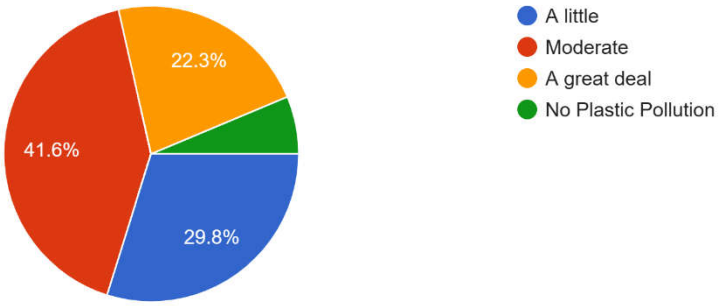


7. Among these, which do you think is the most harmful plastic pollution problem?
238 responses



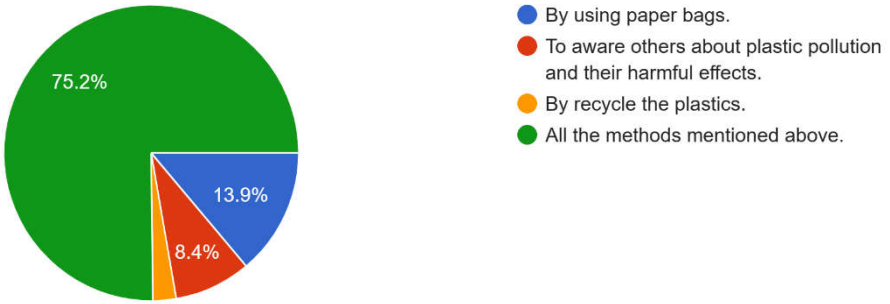
8. How much plastic pollution is there in the area that you live in?

238 responses



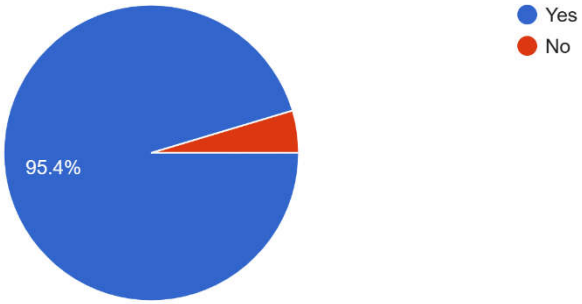
9. How can you overcome the plastic pollution problem?

238 responses



10. Do you help in reducing the plastic waste?

238 responses



Result and discussion: A total of 238 responses were received. 97.9% respondents were aware about plastic pollution. 99.6% respondents knew about harmful effects of plastic pollution on environment and human health.Respondents knew that plastic pollution releases toxic chemicals in the environment, enters in the food chain and causes cancer, also pollutes the marine environment.Use of toxic plastic causes different human health problems like breathing difficulties, headache, dizziness, respiratory problems, liver dysfunction, cancer,

skin diseases, chronic inflammation, rheumatoid arthritis, lungs problems, neuro-degenerative, reproductive, cardiovascular and gastrointestinal diseases (Proshad*et al*, 2018).

Plastic is lightweight, versatile, strong, flexible,inexpensive, corrosion resistant and moisture resistant material. Plastics are used to make many products that bring medical and technological advances and social benefits (Thompson *et al*, 2009). Plastics can cause serious environment problems such as soil pollution, water pollution, air pollution, killing of animals and also have negative impact on food chain also.Degradation of plastics leads to the release of methane which is a major contributor of greenhouse effect (Reddy *et al*, 2014). The presence of plastic wastes (plastic bottles, plastic cans etc.) in water bodies disturbs the natural flow of water, limits the ability of fish to reproduce and destroys helpfulmicroorganisms. Plastic waste incineration releases harmful chemicals in the environment which triggers air pollution and also causes negative impacton human health (Nagy and Kuti, 2016; Alabi *et al*, 2019).Moharam and Maqtari(2014) observed that plastic waste material causes serious environmental problems and leads to contaminated and distorted environment. All the respondents knew how to overcome the plastic pollution problem. Some respondents described various methods to reduce plastic waste pollution are mentioned below:

- ✓ By using paper bags
- ✓ By avoiding buying plastic products
- ✓ By plastic waste management and recycling
- ✓ To aware others about plastic pollution and their harmful effects
- ✓ By Reduce, Reuse and Recycle
- ✓ By Policy making
- ✓ Education and public awareness

Some of the measures reducing plastic waste are: Reduce, Reuse, Recycle, Recovery and landfilling (Tanwer, 2022; Singh and Trivedi, 2020). Use of oxo-biodegradable additive is also an important step for reducing plastic waste. Also, educating and spreading the awareness among people to clean the water bodies like rivers, ponds and lakes can reduce the mortality of fishes and sea animals due to plastic pollution.

Conclusion: This study reveals the negative consequences of plastic pollution on human health and environment. We can conclude that plastic pollution is unprecedently problematic and its instigators have evaded real accountability for too long. All of us have to take

immediate and necessary action to bring this crisis under control. Our environment needs to be protected from future damage and actions need to be taken to establish a world with free-plastic wastes. The government, health authorities and law implementing agencies of the country should take more steps and pay attention to sustainable production, use and disposal of plastic waste.

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