Impacts of Plastic Usage on Human Health

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Abstract

To date, most of natural materials used in manufacturing such as paper, glass, and cotton, have been replaced by plastic. Global production currently exceeds 320 million tonnes (Mt) per year, over 40% of which is used as single-use packaging, resulting in plastic waste [1]. In Malaysia, plastic shopping or carrier bags are one of the main sources of plastic waste, therefore, Malaysia is tracking global trends in both the overall generation of plastic waste and the consumption of single-use plastics. Malaysia ranks second in Asia after Philippines for annual per capita plastic use and, it ranks eighth among nations worldwide that mismanage plastic waste [2].

At every stage of its lifecycle, plastic poses distinct risks to human health. However, many traders still prefer to use non-environmentally friendly plastic bags because they are cheaper than biodegradable ones [2]. Chemicals are added to plastics to give them characteristics such as plasticity, colour, malleability, durability, or the hardness that some products need. Some groups of these chemicals such as bisphenol A (BPA) and phthalates have been identified as hazardous for human health, as they have been suspected of disrupting our hormonal system. BPA has been associated with several health problems such as ovarian chromosomal damage, decreased sperm production, rapid puberty, rapid changes in immune system, type-2 diabetes, cardiovascular disorder, obesity etc. Some studies have also claimed that BPA increases the risk of breast cancer, prostate cancer, pains, metabolic disorders, etc. BPA in women can be associated with impaired health, including obesity, endometrial hyperplasia, recurrent miscarriages, sterility, and polycystic ovarian syndrome [4]. Moreover, substances such as POPs, benzyne, and VOCs are present, which are all proven to adversely affect human health [3].

Exposure to harmful chemicals during manufacturing, leaching in the stored food items while using plastic packages or chewing of plastic teethers and toys by children are linked with severe adverse health outcomes such as cancers, birth defects, impaired immunity, endocrine disruption, developmental and reproductive effects etc. [3]. Thus, the objective of this study is to determine the impact of plastic to human health. This paper involved with secondary data collected from journals, proceedings, books, and internet sources regarding the topic.

To conclude, Malaysia recycled just 24% of key plastic resins in 2019 and currently is not on track to meet the JPSPN (National Solid Waste Management Department) recycling target of 40% by 2025. Hence, removing plastic from the environment is incredibly urgent, as it creates environmental and health problems for both humans and marine life. Thus, plastics recognized to be a global contaminant of concern by policymakers, scientists, media, and public attention on the issue steadily increasing. Hence, promotion of plastics substitutes and safe disposal of plastic waste requires urgent and definitive action to take care of this potential health hazard in future.

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One of the immediate campaigns launched was a No Plastic Bag Day (NPBD) in 2011 in raising awareness and reducing the use of single-use plastics in Malaysia. Through this campaign, free plastic bags in grocery stores were banned nationwide with a levy of 0.20 MYR was also added per plastic bag consumed in grocery stores and supermarkets to change consumer behaviour. This was followed by a nationwide ban on the use of straws in 2020. Recognizing that plastic pollution is a serious emerging issue, Malaysia’s Roadmap towards Zero Single-Use Plastics 2018–2030 was gazetted back in 2018 with the vision to take a phased, evidence-based, and holistic approach by involving all stakeholders in jointly addressing single-use plastics pollution in Malaysia.

Keywords
Chemicals, Health problems, Plastic, Preventive strategies

References