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Microplastic Contamination in Seafood: Knowledge and Awareness of Fishermen and Consumers in Negombo Lagoon Area

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Abstract

Microplastics (MP) are tiny plastic particles (<5 mm) which are widespread in freshwater, marine, and terrestrial ecosystems. MP become significant environmental threat and there is a possibility to end up MP in seafoods. The present study assessed the level of awareness regarding contamination of seafood with MP among consumers and fishermen in Negombo lagoon area. Data were collected from 60 participants (30 fishermen and 30 consumers) via administered questionnaire with closed-ended and open-ended questions which extract the information on awareness about MP. Findings revealed that awareness on MP were relatively low in Fishermen (36.67%) but higher in consumers (63.33%). Further 40% of fishermen and 60% of consumers had knowledge on impact of MPs on human health. However, some fishermen (56.67%) and consumers (43.33%) had no knowledge about the sources of MP. Majority of respondents had given X-press pearl (47.06%) and hotel wastage (29.41%) as the main sources of MP. Moreover, 45% of fishermen had observed plastics attached in gills and gut of fish. Respondents were generally aware that there is a risk of bioaccumulating MP after consuming seafood and apprehension regarding potential hazard to human health. Durability was the main reason for the selection of plastics used by respondents while recyclability played a lesser role. Only 36% of fishermen and 64% of consumers were found to be aware of the methods for reducing MP pollution. Both consumers and fishermen have acknowledged the importance of awareness programs on plastic pollution and its harmful effects, as well as the importance of reducing and recycling plastics in mitigating the issue. Majority of consumers (75%) and a smaller number of fishermen (25%) have actively engaged in environmental initiatives, such as beach clean-ups. All participants display a strong willingness to adopt biodegradable alternatives, emphasizing their commitment to eco-friendly practices. Educational campaigns and media awareness, coupled with stringent policy enforcement and eco-friendly plastic adoption, can mitigate plastic and microplastic pollution, addressing the ongoing issue effectively.

Keywords: Microplastic, Awareness, Fishermen, Consumers, Seafood