

## Evaluating the Knowledge, Attitude and Practices Regarding Radioactive Waste amongst the Scrap Dealerships in Delhi

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### Background

With nuclear technology rapidly taking the spotlight in the last 50 years, radiation accidents seem to be a harsh reality of the modern world. India has luckily managed to remain in the penumbra of radiation disasters. The Mayapuri Radiation leak accident of 2010 was the worst radiation accident India has yet dealt with.

### Aims & Objectives

To assess the awareness and practices regarding radioactive waste amongst scrap dealers, to assess deficiencies in radiation disaster preparedness and guiding them to prevent similar accidents.

### Material & Methods

This is a community based cross-sectional study. The study population consisted of 209 volunteers (from 108 scrap dealerships) including 108 shop-owners and 101 shop-workers segregated as Group A consisting of 54 dealerships in the Mayapuri scrap colony and Group B consisting of 54 dealerships from the rest of the city (divided into 9 districts). After obtaining a valid and informed consent, the subjects were asked to complete a comprehensive questionnaire to assess their knowledge, attitude and practices pertaining to radioactive waste management.

### Results

Awareness about radioactive waste varied significantly with level of education ( $p=0.024$ ), Kuppuswamy's socio-economic scale ( $p=0.005$ ), age of the respondent ( $p=0.049$ ) and his work experience ( $p=0.045$ ). Knowledge of the radioactivity symbol varied significantly with Kuppuswamy's scale ( $p=0.038$ ) and with Per-Capita Income ( $p=0.052$ ). Scrap dealers dealing in ferrous metals, who were at a higher potential risk of exposure, were more aware of mitigation and response methods to deal with radiation hazard than those dealing in non-ferrous substances. The larger dealerships in Mayapuri were better equipped in terms of record maintenance and monitoring of waste dispatch while also undertaking regular preventive medical check-ups.

### Conclusions

Our observations suggest that much of the knowledge regarding radioactive waste and its handling was inherently gained with little active intervention on part of the governmental and non-governmental agencies. Knowledge was greater within Mayapuri than at other locations. This may be suggestive of either witness-based learning or an agency-based response to the 2010 accident. The study paved the way for designing a step-by-step source to victim response plan.