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Regulation of Highly Hazardous Pesticides for Pesticide Suicide Prevention in Nepal

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BACKGROUND/OBJECTIVE: Pesticide self-poisoning kills more than 150,000 people worldwide and at least 1,000 people in Nepal annually. Pesticide regulation to remove highly hazardous pesticides (HHP) from agricultural practice will be key to preventing such deaths. We studied the process of pesticide regulation in minimizing the pesticide related suicide cases in Nepal.

METHODS: We performed a qualitative descriptive study of the problem of pesticide self-poisoning in Nepal and the regulatory response to the problem over the last 15 years.

RESULTS: A study was done from 2004-2005 and found that 68% of pesticide suicides attempts were due to consumption of the WHO Class-Ia toxicity organophosphorus (OP) insecticide methyl-parathion. The technical registration committee from the Plant Quarantine and Pesticide Management Centre (government organization) reviewed the situation in 2006 and ban methyl-parathion and the Class-Ib insecticide monocrotophos. In 2012, endosulfan was banned following its recognition as a persistent organic pollutant. Recent Centre for Pesticide Suicide Prevention revealed that dichlorvos and aluminium phosphide were the most important causes of pesticide suicide; organochlorine insecticide poisoning was the third most important. Of note, there were no proven fatal cases of methyl-parathion/monocrotophos poisoning despite smuggling of these compounds across the Indian border. The last organochlorine pesticide dicofol was banned in 2019 along with five HHP: dichlorvos, triazophos, carbaryl, benomyl, carbofuran. Following the Indian experience, where a reduction in deaths was noted after a shift from aluminium phosphide 3g tablets to a powder such tablets were banned during August 2019.

CONCLUSIONS: We found that pesticide regulation is playing a key role in minimizing pesticide suicide cases in Nepal. Following the recent ban of aluminum phosphide 3g tablet and five HHP, we hope for a further reduction in suicide cases in Nepal. Regional cooperation in pesticide regulation is required to prevent smuggling of HHP across borders.